



**Department of
Design and
Construction**

**CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF PUBLIC BUILDINGS
VOLUME 1 – BID BOOKLET
SINGLE PLA CONTRACT VERSION**

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Introduction

This Bid Booklet is intended to provide general information necessary for bidding on a DDC public works project and is part of the Contract Documents, as per Article 1.1 of the Standard Construction Contract.

As this contract is solicited via the PASSPort system, the bidder will be required to complete all of the PASSPort forms and questionnaires. These forms and questionnaires, along with the bidder's responses, will become part of the Bid Booklet.

Additional information on the PASSPort system can be found at the following website:

<https://www1.nyc.gov/site/mocs/systems/passport-user-materials.page>

Bid Submission Requirements

THE FOLLOWING MUST BE COMPLETED AND SUBMITTED FOR THE BID TO BE CONSIDERED RESPONSIVE:

1. Completed electronic bid submission in PASSPort;
 - a. All required fields in PASSPort must be completed.
2. One-page signed Bid Submission Form delivered in person to DDC before the bid due date; and
3. Bid security, if required.
 - a. If Bid security is in a form of a bid bond, bidders must include it with their electronic PASSPort submission.
 - b. If Bid security is in a form of a certified check, bidders must deliver the certified check with the signed Bid Submission Form.

BIDDERS ARE ADVISED THAT PAPER BID SUBMISSIONS WILL BE DEEMED NON-RESPONSIVE. BIDDERS MUST SUBMIT THEIR BIDS ELECTRONICALLY IN PASSPORT, PROVIDE THE BID SECURITY, AND DELIVER TO DDC THE ONE-PAGE SIGNED BID SUBMISSION FOR THE BID TO BE CONSIDERED RESPONSIVE.

THE FOLLOWING MAY RESULT IN THE BID BEING FOUND NON-RESPONSIVE:

1. Any discrepancy between the total bid price listed on the Bid Submission Form and the bid information submitted in PASSPort.
2. Failure to upload required files or documents as part of a mandatory PASSPort Questionnaire response.
3. Uploading an incorrect file as part of a mandatory PASSPort Questionnaire response.
 - a. For clarity, this includes uploading the bid breakdown on a form other than the Excel file provided in the PASSPort Questionnaire.

Notices to Bidders

Project Labor Agreement & Single Contract

PROJECT LABOR AGREEMENT: This contract is subject to a Project Labor Agreement (“PLA”) entered into between the City and the Building and Construction Trades Council of Greater New York (“BCTC”) affiliated Local Unions. By submitting a bid, the Contractor agrees that the PLA is binding on the Contractor and all subcontractors of all tiers. The bidder to be awarded the contract will be required to execute a “Letter of Assent” prior to award.

The Bidder is advised to review the following: (1) Notice regarding the PLA, (2) the PLA, and (3) the Letter of Assent, all of which are set forth at the beginning of Volume 2 of the Contract Documents.

SINGLE CONTRACT: As stated above, this contract is subject to a PLA. The requirements of the Wicks Law for separate prime contractors DO NOT APPLY to any project that is covered by a PLA. Accordingly, the requirements of the Wicks Law for separate prime contractors do not apply to this Project. The Project consists of a single contract.

The Bidder is advised to review the Notice set forth at the beginning of Volume 2 of the Contract Documents. The Notice specifies revisions to the Contract Documents to provide that the Project consists of a single contract and to delete any and all references to separate prime contractors.

Pre Bid Questions (PBQs)

Please be advised that PBQs should be submitted to the Agency Contact Person (CSB_projectinquiries@ddc.nyc.gov) at least five (5) business days (by 5:00 PM EST) prior to the bid opening date as indicated in the PASSPort procurement.

All PBQs must reference the Project ID. If a bidder has multiple PBQs for the same Project ID, the PBQs must be numbered sequentially, even if they are submitted separately.

While the PASSPort system has a facility for submitting inquiries, bidders are directed to send PBQs as directed above instead of using the PASSPort inquiry system.

Inquiries sent using the PASSPort inquiry system will not be considered PBQs.

NYC Contract Financing Loan Fund

Loans at a 3% annual interest rate to perform on New York City contracts

If your business is working as a prime or subcontractor on a project with a City agency or City-funded entity, you may be eligible for a Contract Financing Loan from a participating lender coordinated with the NYC Department of Small Business Services (SBS). Loan repayment terms align with the contract payment schedule.

Loans of up to \$500,000 at an annual interest rate of 3% are available to eligible* businesses to perform on New York City contracts. Closing fees apply.

*To be eligible for a loan, you must:

- Have an operating business, AND
- Be applying for financing as a prime or sub-contractor to use toward a contract with a City agency or City-funded entity.
- Additional Eligibility requirements may also apply.

How it works:

Step 1: Fill out the Contract Financing inquiry form at nyc.gov/contractfinancing

Step 2: If Eligible, a participating lender will contact you within two business days.

Step 3: Begin the loan application process

For more information: Call 311 or visit nyc.gov/contractfinancing

NYC Bond Collateral Assistance Fund:

If your business is bidding or planning to bid on a project as a prime or subcontractor with a City agency or the NYC Economic Development Corporation (NYCEDC) and the project requires surety bonding, you may be eligible* to receive up to \$500,000 in Collateral Assistance to enhance your surety bond application from a participating bond service provider coordinated with the NYC Department of Small Business Services (SBS).

*To be eligible, you must:

- Have an operating construction business, AND
- Be bidding or planning to bid as a prime or subcontractor on a contract with a City agency or NYCEDC that requires bonding

- Additional Eligibility requirements may apply.

How it works:

Step 1: Fill out the Bond Collateral Assistance Fund inquiry form at nyc.gov/bondfund

Step 2: If Eligible, the bond service provider will contact you within two business days

Step 3: Begin the bond application process

For more information: Call 311 or visit nyc.gov/bondfund

M/WBE Notice to Prospective Contractors

PARTICIPATION BY MINORITY-OWNED AND WOMEN-OWNED BUSINESS ENTERPRISES IN CITY PROCUREMENT (9/2020 version)

ARTICLE I. M/WBE PROGRAM

Section 6-129 of the Administrative Code of the City of New York ("Section 6-129") establishes the program for participation in City procurement ("M/WBE Program") by minority-owned business enterprises ("MBEs") and women-owned business enterprises ("WBEs"), certified in accordance with Section 1304 of the New York City Charter. As stated in Section 6-129, the intent of the program is to address the impact of discrimination on the City's procurement process, and to promote the public interest in avoiding fraud and favoritism in the procurement process, increasing competition for City business, and lowering contract costs. The contract provisions contained herein are pursuant to Section 6-129, and the rules of the Department of Small Business Services ("DSBS") promulgated thereunder.

If this Contract is subject to the M/WBE Program established by Section 6-129, the specific requirements of MBE and/or WBE participation for this Contract are set forth in Schedule B of the Contract (entitled the "M/WBE Utilization Plan") and are detailed below. Contracts solicited through the Procurement and Sourcing Solutions Portal (PASSPort) will contain a Schedule B in the format outlined in the Schedule B – M/WBE Utilization Plan & PASSPort rider. The provisions of this notice will apply to contracts subject to the M/WBE Program established by Section 6-129 regardless of solicitation source.

The Contractor must comply with all applicable MBE and WBE requirements for this Contract.

All provisions of Section 6-129 are hereby incorporated in the Contract by reference and all terms used herein that are not defined herein shall have the meanings given such terms in Section 6-129.

References to MBEs or WBEs shall also include such businesses certified pursuant to the executive law where credit is required by section 311 of the New York City Charter or other provision of law.

Article I, Part A, below, sets forth provisions related to the participation goals for construction, standard and professional services contracts.

Article I, Part B, below, sets forth miscellaneous provisions related to the M/WBE Program.

PART A

PARTICIPATION GOALS FOR CONSTRUCTION, STANDARD

AND PROFESSIONAL SERVICES CONTRACTS OR TASK ORDERS

1. The **MBE and/or WBE Participation Goals** established for this Contract or Task Orders issued pursuant to this Contract, ("**Participation Goals**"), as applicable, are set forth on Schedule B, Part 1 to this Contract (see Page 1, Line 1 Total Participation Goals) or will be set forth on Schedule B, Part 1 to Task Orders issued pursuant to this Contract, as applicable.

The **Participation Goals** represent a percentage of the total dollar value of the Contract or Task Order, as applicable, that may be achieved by awarding subcontracts to firms certified with DSBS as MBEs and/or WBEs, and/or by crediting the participation of prime contractors and/or qualified joint ventures as provided in Section 3 below, unless the goals have been waived or modified by Agency in accordance with Section 6-129 and Part A, Sections 10 and 11 below, respectively.

2. If **Participation Goals** have been established for this Contract or Task Orders issued pursuant to this Contract, Contractor agrees or shall agree as a material term of the Contract that Contractor shall be subject to the **Participation Goals**, unless the goals are waived or modified by Agency in accordance with Section 6-129 and Part A, Sections 10 and 11 below, respectively.

3. If **Participation Goals** have been established for this Contract or Task Order issued pursuant to this Contract, a Contractor that is an MBE and/or WBE shall be permitted to count its own participation toward fulfillment of the relevant **Participation Goal**, provided that in accordance with Section 6-129 the value of Contractor's participation shall be determined by subtracting from the total value of the Contract or Task Order, as applicable, any amounts that the Contractor pays to direct subcontractors (as defined in Section 6-129(c)(13)), and provided further that a Contractor that is certified as both an MBE and a WBE may count its own participation either toward the goal for MBEs or the goal for WBEs, but not both.

A Contractor that is a qualified joint venture (as defined in Section 6-129(c)(30)) shall be permitted to count a percentage of its own participation toward fulfillment of the relevant **Participation Goal**. In accordance with Section 6-129, the value of Contractor's participation shall be determined by subtracting from the total value of the Contract or Task Order, as applicable, any amounts that Contractor pays to direct subcontractors, and then multiplying the remainder by the percentage to be applied to total profit to determine the amount to which an MBE or WBE is entitled pursuant to the joint venture agreement, provided that where a participant in a joint venture is certified as both an MBE and a WBE, such amount shall be counted either toward the goal for MBEs or the goal for WBEs, but not both.

4. A. If **Participation Goals** have been established for this Contract, a prospective contractor shall be required to submit with its bid or proposal, as applicable, a completed Schedule B, M/WBE Utilization Plan, Part 2 (see Pages 1-2) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end; as well as the name, addresses, and telephone numbers of the M/WBE subcontractors if required by the solicitation; and (d) the prospective contractor's required certification and affirmations. In the event that this M/WBE Utilization Plan indicates that the bidder or proposer, as applicable, does not intend to meet the **Participation Goals**, the bid or proposal, as applicable, shall be deemed non-responsive, unless Agency has granted the bidder or proposer, as applicable, a pre-award waiver of the **Participation Goals** in accordance with Section 6-129 and Part A, Section 10 below.

B. (i) If this Contract is for a master services agreement or other requirements type contract that will result in the issuance of Task Orders that will be individually registered ("Master Services Agreement") and is subject to M/WBE **Participation Goals**, a prospective contractor shall be required to submit with its bid or proposal, as applicable, a completed Schedule B, M/WBE Participation Requirements for Master Services Agreements That Will Require Individually Registered Task Orders, Part 2 (page 2) indicating the prospective contractor's certification and required affirmations to make all reasonable good faith efforts to meet participation goals established on each individual Task Order issued pursuant to this Contract, or if a partial waiver is obtained or such goals are modified by the Agency, to meet the modified **Participation Goals** by soliciting and obtaining the participation of certified MBE and/or WBE firms. In the event that the Schedule B indicates that the bidder or proposer, as applicable, does not intend to meet the **Participation Goals** that may be established on Task Orders issued pursuant to this Contract, the bid or proposal, as applicable, shall be deemed non-responsive.

(ii) **Participation Goals** on a Master Services Agreement will be established for individual Task Orders issued after the Master Services Agreement is awarded. If **Participation Goals** have been established on a Task Order, a contractor shall be required to submit a Schedule B – M/WBE Utilization Plan For Independently Registered Task Orders That Are Issued Pursuant to Master Services Agreements, Part 2 (see Pages 1-2) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end; as well as the name, addresses, and telephone numbers of the M/WBE subcontractors if required by the solicitation; and (d) the prospective contractor's required certification and affirmations. The contractor must engage in good faith efforts to meet the **Participation Goals** as established for the Task Order unless Agency has granted the contractor a pre-award waiver of the **Participation Goals** in accordance with Section 6-129 and Part A, Section 10 below.

C. THE BIDDER/PROPOSER MUST COMPLETE THE SCHEDULE B INCLUDED HEREIN (SCHEDULE B, PART 2). A SCHEDULE B SUBMITTED BY THE BIDDER/PROPOSER WHICH DOES NOT INCLUDE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS WILL BE DEEMED TO BE NON-RESPONSIVE, UNLESS A FULL WAIVER OF THE PARTICIPATION GOALS IS GRANTED (SCHEDULE B, PART 3). IN THE EVENT THAT THE CITY DETERMINES THAT THE BIDDER/PROPOSER HAS SUBMITTED A SCHEDULE B WHERE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS ARE COMPLETED BUT OTHER ASPECTS OF THE SCHEDULE B ARE NOT COMPLETE, OR CONTAIN A COPY OR COMPUTATION ERROR THAT IS AT ODDS WITH THE VENDOR CERTIFICATION AND AFFIRMATIONS, THE BIDDER/PROPOSER WILL BE NOTIFIED BY THE AGENCY AND WILL BE GIVEN FOUR (4) CALENDAR DAYS FROM RECEIPT OF NOTIFICATION TO CURE THE SPECIFIED DEFICIENCIES AND RETURN A COMPLETED SCHEDULE B TO THE AGENCY. FAILURE TO DO SO WILL RESULT IN A DETERMINATION THAT THE BID/PROPOSAL IS NON-RESPONSIVE. RECEIPT OF NOTIFICATION IS DEFINED AS THE DATE NOTICE IS E-MAILED OR FAXED (IF THE BIDDER/PROPOSER HAS PROVIDED AN E-MAIL ADDRESS OR FAX NUMBER), OR NO LATER THAN FIVE (5) CALENDAR DAYS FROM THE DATE OF MAILING OR UPON DELIVERY, IF DELIVERED.

5. Where an **M/WBE** Utilization Plan has been submitted, the Contractor shall, within 30 days of issuance by Agency of a notice to proceed, submit a list of proposed persons or entities to which it intends to award subcontracts within the subsequent 12 months. In the case of multi-year contracts, such list shall also be submitted every year thereafter. The Agency may also require the Contractor to report periodically about the contracts awarded by its direct subcontractors to indirect subcontractors (as defined in Section 6-129(c)(22)). **PLEASE NOTE: If this Contract is a public works project subject to GML §101(5) (i.e., a contract valued at or below \$3M for projects in New York City) or if the Contract is subject to a project labor agreement in accordance with Labor Law §222, and the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades (plumbing and gas fitting; steam heating, hot water heating, ventilating and air conditioning (HVAC); and electric wiring), the Contractor must identify all those to which it intends to award construction subcontracts for any portion of the Wicks trade work at the time of bid submission, regardless of what point in the life of the contract such subcontracts will occur. In identifying intended subcontractors in the bid submission, bidders may satisfy any Participation Goals established for this Contract by proposing one or more subcontractors that are MBEs and/or WBEs for any portion of the Wicks trade work.** In the event that the Contractor's selection of a subcontractor is disapproved, the Contractor shall have a reasonable time to propose alternate subcontractors.

6. MBE and WBE firms must be certified by DSBS in order for the Contractor to credit such firms' participation toward the attainment of the **Participation Goals**. Such certification must occur prior to the

firms' commencement of work. A list of city-certified MBE and WBE firms may be obtained from the DSBS website at www.nyc.gov/buycertified, by emailing DSBS at buyer@sbs.nyc.gov, by calling (212) 513-6451, or by visiting or writing DSBS at One Liberty Plaza, New York, New York, 10006, 11th floor. Eligible firms that have not yet been certified may contact DSBS in order to seek certification by visiting www.nyc.gov/getcertified, emailing MWBE@sbs.nyc.gov, or calling the DSBS certification helpline at (212) 513-6311. A firm that is certified as both an MBE and a WBE may be counted either toward the goal for MBEs or the goal for WBEs, but not both. No credit shall be given for participation by a graduate MBE or graduate WBE, as defined in Section 6-129(c)(20).

7. Where an **M/WBE** Utilization Plan has been submitted, the Contractor shall, with each voucher for payment, and/or periodically as Agency may require, submit statements, certified under penalty of perjury, which shall include, but not be limited to, the total amount the Contractor paid to its direct subcontractors, and, where applicable pursuant to Section 6-129(j), the total amount direct subcontractors paid to indirect subcontractors; the names, addresses and contact numbers of each MBE or WBE hired as a subcontractor by the Contractor, and, where applicable, hired by any of the Contractor's direct subcontractors; and the dates and amounts paid to each MBE or WBE. The Contractor shall also submit, along with its voucher for final payment: the total amount it paid to subcontractors, and, where applicable pursuant to Section 6-129(j), the total amount its direct subcontractors paid directly to their indirect subcontractors; and a final list, certified under penalty of perjury, which shall include the name, address and contact information of each subcontractor that is an MBE or WBE, the work performed by, and the dates and amounts paid to each.

8. If payments made to, or work performed by, MBEs or WBEs are less than the amount specified in the Contractor's **M/WBE** Utilization Plan, Agency shall take appropriate action, in accordance with Section 6-129 and Article II below, unless the Contractor has obtained a modification of its **M/WBE** Utilization Plan in accordance with Section 6-129 and Part A, Section 11 below.

9. Where an **M/WBE** Utilization Plan has been submitted, and the Contractor requests a change order the value of which exceeds the greater of 10 percent of the Contract or Task Order, as applicable, or \$500,000, Agency shall review the scope of work for the Contract or Task Order, as applicable, and the scale and types of work involved in the change order, and determine whether the **Participation Goals** should be modified.

10. Pre-award waiver of the **Participation Goals**.

(a) A bidder or proposer, or contractor with respect to a Task Order, may seek a pre-award full or partial waiver of the Participation Goals in accordance with Section 6-129, which requests that Agency change one or more **Participation Goals** on the grounds that the **Participation Goals** are unreasonable in light of the availability of certified firms to perform the services required, or by demonstrating that it has legitimate business reasons for proposing a lower level of subcontracting in its M/WBE Utilization Plan.

(b) To apply for a full or partial waiver of the **Participation Goals**, a bidder, proposer, or contractor, as applicable, must complete Part 3 of Schedule B and submit such request no later than seven (7) calendar days prior to the date and time the bids, proposals, or Task Orders are due, in writing to the Agency by email at MWBEModification@ddc.nyc.gov. Full or partial waiver requests that are received later than seven (7) calendar days prior to the date and time the bids, proposals, or Task Orders are due may be rejected as untimely. Bidders, proposers, or contractors, as applicable, who have submitted timely requests will receive an Agency response by no later than two (2) calendar days prior to the due date for bids, proposals, or Task Orders; provided, however, that if that date would fall on a weekend or holiday, an

Agency response will be provided by close-of-business on the business day before such weekend or holiday date.

(c) If the Agency determines that the **Participation Goals** are unreasonable in light of the availability of certified firms to perform the services required, it shall revise the solicitation and extend the deadline for bids and proposals, or revise the Task Order, as applicable.

(d) Agency may grant a full or partial waiver of the **Participation Goals** to a bidder, proposer or contractor, as applicable, who demonstrates—before submission of the bid, proposal or Task Order, as applicable—that it has legitimate business reasons for proposing the level of

subcontracting in its **M/WBE** Utilization Plan. In making its determination, Agency shall consider factors that shall include, but not be limited to, whether the bidder, proposer or contractor, as applicable, has the capacity and the bona fide intention to perform the Contract without any subcontracting, or to perform the Contract without awarding the amount of subcontracts represented by the **Participation Goals**. In making such determination, Agency may consider whether the **M/WBE** Utilization Plan is consistent with past subcontracting practices of the bidder, proposer or contractor, as applicable, whether the bidder, proposer or contractor, as applicable, has made efforts to form a joint venture with a certified firm, and whether the bidder, proposer, or contractor, as applicable, has made good faith efforts to identify other portions of the Contract that it intends to subcontract.

11. Modification of **M/WBE** Utilization Plan. (a) A Contractor may request a modification of its **M/WBE** Utilization Plan after award of this Contract. **PLEASE NOTE: If this Contract is a public works project subject to GML §101(5) (i.e., a contract valued at or below \$3M for projects in New York City) or if the Contract is subject to a project labor agreement in accordance with Labor Law §222, and the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades (plumbing and gas fitting; steam heating, hot water heating, ventilating and air conditioning (HVAC); and electric wiring), the Contractor may request a Modification of its M/WBE Utilization Plan as part of its bid submission.** The Agency may grant a request for Modification of a Contractor's **M/WBE** Utilization Plan if it determines that the Contractor has established, with appropriate documentary and other evidence, that it made reasonable, good faith efforts to meet the **Participation Goals**. In making such determination, Agency shall consider evidence of the following efforts, as applicable, along with any other relevant factors:

(i) The Contractor advertised opportunities to participate in the Contract, where appropriate, in general circulation media, trade and professional association publications and small business media, and publications of minority and women's business organizations;

(ii) The Contractor provided notice of specific opportunities to participate in the Contract, in a timely manner, to minority and women's business organizations;

(iii) The Contractor sent written notices, by certified mail or facsimile, in a timely manner, to advise MBEs or WBEs that their interest in the Contract was solicited;

(iv) The Contractor made efforts to identify portions of the work that could be substituted for portions originally designated for participation by MBEs and/or WBEs in the **M/WBE** Utilization Plan, and for which the Contractor claims an inability to retain MBEs or WBEs;

(v) The Contractor held meetings with MBEs and/or WBEs prior to the date their bids or proposals were due, for the purpose of explaining in detail the scope and requirements of the work for which their bids or proposals were solicited;

- (vi) The Contractor made efforts to negotiate with MBEs and/or WBEs as relevant to perform specific subcontracts, or act as suppliers or service providers;
- (vii) Timely written requests for assistance made by the Contractor to Agency's M/WBE liaison officer and to DSBS;
- (viii) Description of how recommendations made by DSBS and Agency were acted upon and an explanation of why action upon such recommendations did not lead to the desired level of participation of MBEs and/or WBEs.

Agency's M/WBE officer shall provide written notice to the Contractor of the determination.

(b) The Agency may modify the **Participation Goals** when the scope of the work has been changed by the Agency in a manner that affects the scale and types of work that the Contractor indicated in its **M/WBE Utilization Plan** would be awarded to subcontractors.

12. If the Contractor was required to identify in its bid or proposal the MBEs and/or WBEs they intended to use in connection with the performance of the Contract or Task Order, substitutions to the identified firms may only be made with the approval of the Agency, which shall only be given when the Contractor has proposed to use a firm that would satisfy the **Participation Goals** to the same extent as the firm previously identified, unless the Agency determines that the Contractor has established, with appropriate documentary and other evidence, that it made reasonable, good faith efforts. In making such determination, the Agency shall require evidence of the efforts listed in Section 11(a) above, as applicable, along with any other relevant factors.

13. If this Contract is for an indefinite quantity of construction, standard or professional services or is a requirements type contract and the Contractor has submitted an **M/WBE Utilization Plan** and has committed to subcontract work to MBEs and/or WBEs in order to meet the **Participation Goals**, the Contractor will not be deemed in violation of the M/WBE Program requirements for this Contract with regard to any work which was intended to be subcontracted to an MBE and/or WBE to the extent that the Agency has determined that such work is not needed.

14. If **Participation Goals** have been established for this Contract or a Task Order issued pursuant to this Contract, at least once annually during the term of the Contract or Task Order, as applicable, Agency shall review the Contractor's progress toward attainment of its **M/WBE Utilization Plan**, including but not limited to, by reviewing the percentage of work the Contractor has actually awarded to MBE and/or WBE subcontractors and the payments the Contractor made to such subcontractors.

15. If **Participation Goals** have been established for this Contract or a Task Order issued pursuant to this Contract, Agency shall evaluate and assess the Contractor's performance in meeting those goals, and such evaluation and assessment shall become part of the Contractor's overall contract performance evaluation.

PART B

MISCELLANEOUS

1. The Contractor shall take notice that, if this solicitation requires the establishment of a **M/WBE Utilization Plan**, the resulting contract may be audited by DSBS to determine compliance with Section 6-129. See §6-129(e)(10). Furthermore, such resulting contract may also be examined by the City's Comptroller to assess compliance with the **M/WBE Utilization Plan**.

2. Pursuant to DSBS rules, construction contracts that include a requirement for a **M/WBE** Utilization Plan shall not be subject to the law governing Locally Based Enterprises set forth in Section 6-108.1 of the Administrative Code of the City of New York.
3. DSBS is available to assist contractors and potential contractors in determining the availability of MBEs and/or WBEs to participate as subcontractors, and in identifying opportunities that are appropriate for participation by MBEs and/or WBEs in contracts.
4. Prospective contractors are encouraged to enter into qualified joint venture agreements with MBEs and/or WBEs as defined by Section 6-129(c)(30).
5. By submitting a bid or proposal the Contractor hereby acknowledges its understanding of the M/WBE Program requirements set forth herein and the pertinent provisions of Section 6-129, and any rules promulgated thereunder, and if awarded this Contract, the Contractor hereby agrees to comply with the M/WBE Program requirements of this Contract and pertinent provisions of Section 6-129, and any rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract. The Contractor hereby agrees to make all reasonable, good faith efforts to solicit and obtain the participation of MBEs and/or WBEs to meet the required **Participation Goals**.

ARTICLE II. ENFORCEMENT

1. If Agency determines that a bidder or proposer, as applicable, has, in relation to this procurement, violated Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, Agency may disqualify such bidder or proposer, as applicable, from competing for this Contract and the Agency may revoke such bidder's or proposer's prequalification status, if applicable.
2. Whenever Agency believes that the Contractor or a subcontractor is not in compliance with Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to any **M/WBE** Utilization Plan, Agency shall send a written notice to the Contractor describing the alleged noncompliance and offering the Contractor an opportunity to be heard. Agency shall then conduct an investigation to determine whether such Contractor or subcontractor is in compliance.
3. In the event that the Contractor has been found to have violated Section 6-129, the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to, any **M/WBE** Utilization Plan, Agency may determine that one of the following actions should be taken:
 - (a) entering into an agreement with the Contractor allowing the Contractor to cure the violation;
 - (b) revoking the Contractor's pre-qualification to bid or make proposals for future contracts;
 - (c) making a finding that the Contractor is in default of the Contract;
 - (d) terminating the Contract;
 - (e) declaring the Contractor to be in breach of Contract;
 - (f) withholding payment or reimbursement;
 - (g) determining not to renew the Contract;
 - (h) assessing actual and consequential damages;

(i) assessing liquidated damages or reducing fees, provided that liquidated damages may be based on amounts representing costs of delays in carrying out the purposes of the M/WBE Program, or in meeting the purposes of the Contract, the costs of meeting utilization goals through additional procurements, the administrative costs of investigation and enforcement, or other factors set forth in the Contract;

(j) exercising rights under the Contract to procure goods, services or construction from another contractor and charge the cost of such contract to the Contractor that has been found to be in noncompliance; or

(k) taking any other appropriate remedy.

4. If an **M/WBE** Utilization Plan has been submitted, and pursuant to this Article II, Section 3, the Contractor has been found to have failed to fulfill its **Participation Goals** contained in its **M/WBE** Utilization Plan or the **Participation Goals** as modified by Agency pursuant to Article I, Part A, Section 11, Agency may assess liquidated damages in the amount of ten percent (10%) of the difference between the dollar amount of work required to be awarded to MBE and/or WBE firms to meet the **Participation Goals** and the dollar amount the Contractor actually awarded and paid, and/or credited, to MBE and/or WBE firms. In view of the difficulty of accurately ascertaining the loss which the City will suffer by reason of Contractor's failure to meet the **Participation Goals**, the foregoing amount is hereby fixed and agreed as the liquidated damages that the City will suffer by reason of such failure, and not as a penalty. Agency may deduct and retain out of any monies which may become due under this Contract the amount of any such liquidated damages; and in case the amount which may become due under this Contract shall be less than the amount of liquidated damages suffered by the City, the Contractor shall be liable to pay the difference.

5. Whenever Agency has reason to believe that an MBE and/or WBE is not qualified for certification, or is participating in a contract in a manner that does not serve a commercially useful function (as defined in Section 6-129(c)(8)), or has violated any provision of Section 6-129, Agency shall notify the Commissioner of DSBS who shall determine whether the certification of such business enterprise should be revoked.

6. Statements made in any instrument submitted to Agency pursuant to Section 6-129 shall be submitted under penalty of perjury and any false or misleading statement or omission shall be grounds for the application of any applicable criminal and/or civil penalties for perjury. The making of a false or fraudulent statement by an MBE and/or WBE in any instrument submitted pursuant to Section 6-129 shall, in addition, be grounds for revocation of its certification.

7. The Contractor's record in implementing its **M/WBE** Utilization Plan shall be a factor in the evaluation of its performance. Whenever Agency determines that a Contractor's compliance with an **M/WBE** Utilization Plan has been unsatisfactory, Agency shall, after consultation with the City Chief Procurement Officer, file an advice of caution form for inclusion in PASSPort as caution data.

Affirmation

The Bidder affirms and declares:

1. The said bidder is of lawful age and the only one interested in this bid; and no person, firm or corporation other than hereinbefore named has any interest in this bid, or in the Contract proposed to be taken.
2. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief: (1) the prices in this bid have been arrived at independently without collusion, consultation, communication or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor; (2) unless otherwise required by law, the prices quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly, to any other bidder or to any competitor; and (3) no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.
3. No councilman or other officer or employee or person whose salary is payable in whole or in part from the City Treasury is directly or indirectly interested in this bid, or in the supplies, materials, equipment, work or labor to which it relates, or in any of the profits thereof.
4. The bidder is not in arrears to the City of New York upon debt or contract or taxes, and is not a defaulter, as surety or otherwise, upon any obligation of the City of New York, and has not been declared not responsible, or disqualified, by any agency of the City of New York or State of New York, nor is there any proceeding pending relating to the responsibility or qualification of the bidder to receive public contracts except as disclosed in PASSPort.
5. The bidder hereby affirms that it has paid all applicable City income, excise and other taxes for all it has conducted business activities in New York City.
6. The bidder, as an individual, or as a member, partner, director or officer of the bidder, if the same be a firm, partnership or corporation, executes this document expressly warranting and representing that should this bid be accepted by the City and the Contract awarded to him, he and his subcontractors engaged in the performance:

(1) will comply with the provisions of Section 6-108 of the Administrative Code of the City of New York and the non-discrimination provisions of Section 220a of the New York State Labor Law, as more expressly and in detail set forth in the Agreement; (2) will comply with Section 6-109 of the Administrative Code of the City of New York in relation to minimum wages and other stipulations as more expressly and in detail set forth in the Agreement; (3) have complied with the provisions of the aforesaid laws since their respective effective dates, and (4) will post notices to be furnished by the City, setting forth the requirements of the aforesaid laws in prominent and conspicuous places in each and every plant, factory, building and structure where employees engaged in the performance of the Contract can readily view it, and will continue to keep such notices posted until the supplies, materials and equipment, or work labor and services required to be furnished or rendered by the Contractor have been finally accepted by the City. In the event of any breach or violation of the foregoing, the Contractor may be subject to damages, liquidated or otherwise, cancellation of the Contract and suspension as a

bidder for a period of three years. (The words, "the bidder", "he", "his", and "him" where used shall mean the individual bidder, firm, partnership or corporation executing this bid).

7. Compliance Report

The bidder, as an individual, or as a member, partner, director, or officer of the bidder, if the same be a firm, partnership, or corporation, (1) represents that his attention has been specifically drawn to Executive Order No. 50, dated April 25, 1980, on Equal Employment Compliance of the contract, and (2) warrants that he will comply with the provisions of Executive Order No. 50. The Employment Report must be submitted as part of the bid.

8. The bidder, as an individual, or as a member, partner, director, or officer of the bidder, if the same be a firm, partnership, or corporation, executes this document expressly warranting that he will comply with: (1) the provision of the contract on providing records, Chapter 8.
9. By submission of this bid, the bidder certifies that it now has and will continue to have the financial capability to fully perform the work required for this contract. Any award of this contract will be made in reliance upon such certification. Upon request therefor, the bidder will submit written verification of such financial capability in a form that is acceptable to the department.
10. In accordance with Section 165 of the State Finance Law, the bidder agrees that tropical hardwoods, as defined in Section 165 of the State Finance Law, shall not be utilized in the performance of this Contract, except as the same are permitted by the foregoing provision of law.
11. The bidder has visited and examined the site of the work and has carefully examined the Contract in the form approved by the Corporation Counsel, and will execute the Contract and perform all its items, covenants and conditions, and will provide, furnish and deliver all the work, materials, supplies, tools and appliances for all labor and materials necessary or required for the hereinafter named work, all in strict conformity with the Contract, for the prices set forth in the Bid Schedule.
12. M/WBE UTILIZATION PLAN: By signing its bid, the bidder agrees to the M/WBE Vendor Certification and Required Affirmations set forth below, unless a full waiver of the Participation Goals is granted.

I hereby:

- 1) acknowledge my understanding of the M/WBE participation requirements as set forth in this Contract and the pertinent provisions of Section 6-129 of the Administrative Code of the City of New York and the rules promulgated thereunder;
- 2) affirm that the information supplied in support of the M/WBE Utilization Plan is true and correct;
- 3) agree, if awarded this Contract, to comply with the M/WBE participation requirements of this Contract, the pertinent provisions of Section 6-129, and the rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract;
- 4) agree and affirm that it is a material term of this Contract that the Vendor will award the total dollar value of the M/WBE Participation Goals to certified MBEs and/or WBEs, unless a full waiver is obtained or such goals are modified by the Agency; and

agree and affirm, if awarded this Contract, to make all reasonable, good faith efforts to meet the M/WBE Participation Goals, or If a partial waiver is obtained or such goals are modified by the Agency, to meet the modified Participation Goals by soliciting and obtaining the participation of certified MBE and/or WBE firms.

Qualification Form

Project ID: PV467WFAC

List previous projects completed to meet the special experience requirements for this contract. Please photocopy this form for submission of all required projects.

Name of Contractor: SHARAN BUILDERS, INC.

Name of Project: 111 CENTRE STREET-BULKHEAD RESTORATION

Location of Project: 111 CENTRE STREET, NEW YORK, NY 10013

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: ALI AZAD

Title: DEPUTY PROGRAM DIRECTOR Phone Number: 917-279-3690

Brief description of work completed: BRICKWORK, STONE REPLACEMENT, GRANITE, AND LIMESTONE REPLACEMENT

Was the work performed as a prime or a subcontractor: PRIME

Amount of Contract: \$5,468,000.00

Date of Completion: 4/2019

Name of Contractor: SHARAN BUILDERS, INC.

Name of Project: LEXINGTON ARMORY

Location of Project: 68 LEXINGTON AVENUE, NEW YORK, NY 10010

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: JUAN ALVARENGA

Title: AREA SUPERVISOR Phone Number: 845-374-2922

Brief description of work completed: BRICK REPAIR, STONE REPAIR, AND REPLACEMENT

Was the work performed as a prime or a subcontractor: PRIME

Amount of Contract: \$1,011,790.00

Date of Completion: 5/2017

Qualification Form

Project ID: PV467WFAC

List previous projects completed to meet the special experience requirements for this contract. Please photocopy this form for submission of all required projects.

Name of Contractor: SHARAN BUILDERS, INC.

Name of Project: FEDERAL HALL NATIONAL MEMORIALS

Location of Project: 26 WALL STREET, NEW YORK, NY 10005

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: RICHARD CHILCOAT

Title: ENGINEER

Phone Number: 978-970-5167

Brief description of work completed: STONework, POINTING, BRICKWORK, SHORING, BRICK REPLACEMENT

Was the work performed as a prime or a subcontractor: PRIME

Amount of Contract: \$194,000.00

Date of Completion: 8/2018

Name of Contractor: SHARAN BUILDERS, INC.

Name of Project: ATTICA CORRECTIONAL FACILITY

Location of Project: 639 EXCHANGE ST RD, ATTICA, NY 14011

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: ANDREW R YAMBOR

Title: ASSOC. SUPERINTENDENT

Phone Number: 585-591-0356

Brief description of work completed: STRUCTURAL CRACK WORK IN BRICK, SLATE ROOF, GUTTER/LEADER REPLACEMENT, STONE WORK, HISTORIC BRICK WORK, TERRACOTA WORK

Was the work performed as a prime or a subcontractor: PRIME

Amount of Contract: \$293,000.00

Date of Completion: 7/2013

Qualification Form

Project ID: PV467WFAC

List previous projects completed to meet the special experience requirements for this contract. Please photocopy this form for submission of all required projects.

Name of Contractor: SHARAN BUILDERS, INC.

Name of Project: REHABILITATE TOWER LOGGIAS BUILDING 5

Location of Project: 2834 RTE 17M, NEW HAMPTON, NY

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: GEORGE ARMSTRONG

Title: _____ Phone Number: 845-386-4020

Brief description of work completed: MASONRY, SLATE ROOFING, COPPER GUTTERS

Was the work performed as a prime or a subcontractor: PRIME

Amount of Contract: \$245,080.00

Date of Completion: 9/2017

Name of Contractor: SHARAN BUILDERS, INC.

Name of Project: _____

Location of Project: 851 GRAND CONCOURSE

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: VIKRANT SAMPAT

Title: PRINCIPAL Phone Number: 646-528-7262

Brief description of work completed: MASONRY PINNING, STONE REPAIR, CRACK REPAIR, STONE POINTING

Was the work performed as a prime or a subcontractor: PRIME

Amount of Contract: \$150,000.00

Date of Completion: _____

Qualification Form

Project ID: PV467WFAC

List previous projects completed to meet the special experience requirements for this contract. Please photocopy this form for submission of all required projects.

Name of Contractor: SHARAN BUILDERS, INC.

Name of Project: FISP CYCLE 8 - UNSAFE CONDITIONS REPAIR

Location of Project: 60 CENTRE STREET, NEW YORK, NY 10007

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: VIKRANT SAMPAT

Title: PRINCIPAL

Phone Number: 646-528-7262

Brief description of work completed: STONE REPAIR

Was the work performed as a prime or a subcontractor: PRIME

Amount of Contract: \$130,500.00

Date of Completion: _____

Name of Contractor: SHARAN BUILDERS, INC.

Name of Project: _____

Location of Project: 1 CENTRE STREET NEW YORK, NY 10007

Owner or Owner's representative (Architect or Engineer) who is familiar with the work performed:

Name: VIKRANT SAMPAT

Title: PRINCIPAL

Phone Number: 646-528-7262

Brief description of work completed: STONE REPAIR

Was the work performed as a prime or a subcontractor: PRIME

Amount of Contract: \$370,200.00

Date of Completion: _____

BID BOND 1
FORM OF BID BOND

KNOW ALL MEN BY THESE PRESENTS. That we,
SHARAN BUILDERS, INC.

128-12 18TH AVENUE, COLLEGE POINT, NY 11356

hereinafter referred to as the "Principal", and

The Hartford Casualty Insurance Company
One Hartford Plaza, Hartford, CT 06155

hereinafter referred to as the "Surety" are held and firmly bound to THE CITY OF NEW YORK, hereinafter referred to as the "CITY", or to its successors and assigns in the penal sum of

Ten Percent of Amount of Bid

(\$ 10%), Dollars lawful money of the United States, for the payment of which said sum of money well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Whereas, the Principal is about to submit (or has submitted) to the City the accompanying proposal, hereby made a part hereof, to enter into a contract in writing for

THE HECKSCHER BUILDING - PARTIAL EXTERIOR ENVELOPE UPGRADE;
PROJECT No. PV467WFAC; CONTRACT 1- GENERAL CONSTRUCTION;
1230 5TH AVENUE, NEW YORK, NY 10029

NOW, THEREFORE, the conditions of this obligation are such that if the Principal shall not withdraw said Proposal without the consent of the City for a period of forty-five (45) days after the opening of bids and in the event of acceptance of the Principal's Proposal by the City, if the Principal shall:

(a) Within ten (10) days after notification by the City, execute in quadruplicate and deliver to the City all the executed counterparts of the Contract in the form set forth in the Contract Documents, in accordance with the proposal as accepted, and

(b) Furnish a performance bond and separate payment bond, as may be required by the City, for the faithful performance and proper fulfillment of such Contract, which bonds shall be satisfactory in all respects to the City and shall be executed by good and sufficient sureties, and

(c) In all respects perform the agreement created by the acceptance of said Proposal as provided in the Information for Bidders, bound herewith and made a part hereof, or if the City shall reject the aforesaid Proposal, then this obligation shall be null and void; otherwise to remain in full force and effect.

BID BOND 2

In the event that the Proposal of the Principal shall be accepted and the Contract be awarded to him the Surety hereunder agrees subject only to the payment by the Principal of the premium therefore, if requested by the City, to write the aforementioned performance and payment bonds in the form set forth in the Contract Documents.

It is expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

There shall be no liability under this bond if, in the event of the acceptance of the Principal's Proposal by the City, either a performance bond or payment bond, or both, shall not be required by the City on or before the 30th day after the date on which the City signs the Contract.

The surety, for the value received, hereby stipulates and agrees that the obligations of the Surety and its bond shall in no way be impaired or affected by any postponements of the date upon which the City will receive or open bids, or by any extensions of time within which the City may accept the Principal's Proposal, or by any waiver by the City of any of the requirements of the Information for Bidders, and the Surety hereby waives notice of any such postponements, extensions, or waivers.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers the 9th day of August, 2021.

(Seal)

SHARAN BUILDERS, INC. (L.S.)
Principal

By:

Manjit Singh

MANJIT SINGH, PRESIDENT

(Seal)

The Hartford Casualty Insurance Company
Surety

By:

Paul DeMasi

Paul DeMasi, Attorney-In-Fact

BID BOND 3

ACKNOWLEDGEMENT OF PRINCIPAL, IF A CORPORATION

State of New York County of Queens ss:
On this 9th day of AUGUST, 2021, before me personally came
Manjit Singh to me known, who, being by me duly sworn, did depose and say that he
resides at 55 Bregman Avenue, New Hyde Park, NY 11040
that he is the President of Sharan Builders, Inc.
the corporation described in and which executed the foregoing instrument; that he knows the seal of said
corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the
directors of said corporation, and that he signed his name thereto by like order.

JULIA TARLO
Notary Public, State of New York
No. 01TA6041048
Qualified in Kings County
Commission Expires May 01, 2022

Julia Tarlo
Notary Public

ACKNOWLEDGEMENT OF PRINCIPAL, IF A PARTNERSHIP

State of _____ County of _____ ss:
On this _____ day of _____, _____, before me personally appeared
_____ to me known and known to me to be one of the members of the firm of
_____ described in and who executed the foregoing instrument, and he
acknowledged to me that he executed the same as and for the act and deed of said firm.

Notary Public

ACKNOWLEDGEMENT OF PRINCIPAL, IF AN INDIVIDUAL

State of _____ County of _____ ss:
On this _____ day of _____, _____, before me personally appeared
_____ to me known and known to me to be the person described in and who
executed the foregoing instrument and acknowledged that he executed the same.

Notary Public

AFFIX ACKNOWLEDGEMENTS AND JUSTIFICATION OF SURETIES

Individual Acknowledgment

State of _____)
) ss.
County of _____)

On this _____ day of _____, _____, before me personally came _____ to me known, and known to me to be the individual described in and who executed the foregoing instrument, and acknowledged to me that he executed the same.

My commission expires _____

Notary Public

Firm Acknowledgment

State of _____)
) ss.
County of _____)

On this _____ day of _____, _____, before me personally came _____ to me known and known to me to be a member of the firm of _____ described in and who executed the foregoing instrument, and he thereupon acknowledged to me that he executed the same as and for the act and deed of said firm.

My commission expires _____

Notary Public

Corporation Acknowledgment

State of New York)
) ss.
County Queens)

JULIA TARLO
Notary Public, State of New York
No. 01TA6041048
Qualified in Kings County
Commission Expires May 01, 2022

On this 9th day of August, 2021, before me personally came Manjit Singh to me known, who being by me duly sworn, did depose and say that he is the PRESIDENT of SHARAN BUILDERS, INC. the corporation described in and which executed the above instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

My commission expires 5/1/22

Julia Tarlo
Notary Public

Surety Acknowledgment

State of New York)
) ss.
County of Suffolk)

On this 9th day of August, 2021, before me personally came Paul DeMasi to me known, who, being by me duly sworn, did depose and say that he is an attorney-in-fact of Hartford Casualty Insurance Company the corporation described in and which executed the within instrument; that he knows the corporate seal of said corporation; that the seal affixed to the within instrument is such corporate seal, and that he signed the said instrument and affixed the said seal as Attorney-in-Fact by authority of the Board of Directors of said corporation and by authority of this office under the Standing Resolutions thereof.

My commission expires _____

Carolyn A. Harris
Notary Public

POWER OF ATTORNEY

Direct Inquiries/Claims to:

THE HARTFORD

BOND, T-12

One Hartford Plaza

Hartford, Connecticut 06155

Bond.Claims@thehartford.com

call: 888-266-3488 or fax: 860-757-5835

KNOW ALL PERSONS BY THESE PRESENTS THAT:

Agency Name: PROFESSIONAL RISK PLANNERS INC

Agency Code: 12-128299

- ☒ Hartford Fire Insurance Company, a corporation duly organized under the laws of the State of Connecticut
- ☒ Hartford Casualty Insurance Company, a corporation duly organized under the laws of the State of Indiana
- ☐ Hartford Accident and Indemnity Company, a corporation duly organized under the laws of the State of Connecticut
- ☐ Hartford Underwriters Insurance Company, a corporation duly organized under the laws of the State of Connecticut
- ☐ Twin City Fire Insurance Company, a corporation duly organized under the laws of the State of Indiana
- ☐ Hartford Insurance Company of Illinois, a corporation duly organized under the laws of the State of Illinois
- ☐ Hartford Insurance Company of the Midwest, a corporation duly organized under the laws of the State of Indiana
- ☐ Hartford Insurance Company of the Southeast, a corporation duly organized under the laws of the State of Florida

having their home office in Hartford, Connecticut, (hereinafter collectively referred to as the "Companies") do hereby make, constitute and appoint, **up to the amount of Unlimited :**

David R. Afanador, Robert P. Deane, Paul DeMasi, Angelique Falcon of HAUPPAUGE, New York

their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign its name as surety(ies) only as delineated above by ☒, and to execute, seal and acknowledge any and all bonds, undertakings, contracts and other written instruments in the nature thereof, on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

In Witness Whereof, and as authorized by a Resolution of the Board of Directors of the Companies on May 6, 2015 the Companies have caused these presents to be signed by its Senior Vice President and its corporate seals to be hereto affixed, duly attested by its Assistant Secretary. Further, pursuant to Resolution of the Board of Directors of the Companies, the Companies hereby unambiguously affirm that they are and will be bound by any mechanically applied signatures applied to this Power of Attorney.



John Gray

John Gray, Assistant Secretary

M. Ross Fisher

M. Ross Fisher, Senior Vice President

STATE OF CONNECTICUT

COUNTY OF HARTFORD

ss. Hartford

On this 5th day of January, 2018, before me personally came M. Ross Fisher, to me known, who being by me duly sworn, did depose and say: that he resides in the County of Hartford, State of Connecticut; that he is the Senior Vice President of the Companies, the corporations described in and which executed the above instrument; that he knows the seals of the said corporations; that the seals affixed to the said instrument are such corporate seals; that they were so affixed by authority of the Boards of Directors of said corporations and that he signed his name thereto by like authority.



CERTIFICATE

Kathleen T. Maynard

Kathleen T. Maynard
Notary Public

My Commission Expires July 31, 2021

I, the undersigned, Assistant Vice President of the Companies, DO HEREBY CERTIFY that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is still in full force effective as of August 9, 2021

Signed and sealed at the City of Hartford.



Kevin Heckman

Kevin Heckman, Assistant Vice President

HARTFORD CASUALTY INSURANCE COMPANY

Indianapolis, Indiana

Financial Statement, December 31, 2020

Statutory Basis

ASSETS

U.S. Government Bonds	\$	39,258,831
Bonds of Other Governments		2,654,211
State, County Municipal		
Miscellaneous Bonds		2,008,983,930
Stocks		2,342,599
Short Term Investments		29,099,825
	\$	<u>2,082,339,396</u>
Real Estate	\$	0
Cash		217,485
Agents' Balances (Under 90 Day)		34,611,413
Other Invested Assets		176,746
Miscellaneous		303,830,271
Total Admitted Assets	\$	<u>2,421,175,311</u>

LIABILITIES

Reserve for Claims	\$	
and Claim Expense		1,179,222,774
Reserve for Unearned Premiums		275,792,832
Reserve for Taxes, License		
and Fees		5,270,038
Miscellaneous Liabilities		39,352,011
Total Liabilities	\$	<u>1,499,637,655</u>
Capital Paid In	\$	4,800,000
Surplus		<u>916,737,657</u>
Surplus as regards Policyholders	\$	<u>921,537,657</u>
Total Liabilities, Capital		
 and Surplus	\$	<u>2,421,175,311</u>

STATE OF FLORIDA
SEMINOLE COUNTY
CITY OF LAKE MARY

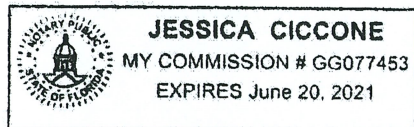
} SS.

Joelle L. LaPierre, Assistant Vice President and Shelby Wiggins, Assistant Secretary of the Hartford Casualty Insurance Company, being duly sworn, each deposes and say that the foregoing is a true and correct statement of the said company's financial condition as of December 31, 2020.

Subscribed and sworn to before me this
22nd day of March, 2021.

Jessica Ciccone

Notary Public



Joelle L. LaPierre
Assistant Vice President

Shelby Wiggins
Assistant Secretary

BID SUBMISSION FORM

Bidder Name: SHARAN BUILDERS, INC.

Procurement Title: 85021B0179-PV467WFAC - The Heckscher Building
- Partial Exterior Envelope Upgrade Rebid

RFx Name: 85021B0179-PV467WFAC - The Heckscher Building
- Partial Exterior Envelope Upgrade Rebid

The above-named bidder affirms and declares:

1. The bidder has completed and submitted all required information for the above procurement in the PASSPort system;
2. Any discrepancy between the bid price listed on this Bid Submission Form and the bid information submitted in PASSPort may result in the agency finding the bid non-responsive; and
3. This bid is being submitted in accordance with New York State General Municipal Law § 103.

Total Bid Price: \$ 4,896,053.24

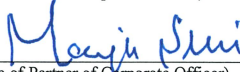
(a/k/a Total
Proposal Amount)

Bidder Signature

EIN (if applicable): 20-3937029
(EIN must match the EIN of the entity that submitted bid information in PASSPort)

Bidder Name: SHARAN BUILDERS, INC.

By: MANJIT SINGH, PRESIDENT
(Name of Partner of Corporate Officer)

Signature: 
(Signature of Partner of Corporate Officer)

Code	Label	Additions	YOU MUST ENTER 1 IN THE BOXES BELOW	Additions _1	Field type
i2_1	ALLOWANCE for Incidental Asbestos Abatement (Section 028013 of the Specifications)	15000	1	15000	Additional Fees
i1_2	ALLOWANCE for Expanded Work (Section 012200 of the Specifications)	139713.24	1	139713.24	Additional Fees

Code	CSI	Label	Quantity	Unit	Unit Price	Total	Field type
i3-1	04 03 10	EFF - Cast stone and brick masonry efflorescence removal.	80	SF	35	2800	Required Item
i3-2	04 03 10	SC1 - Cast stone masonry biological soiling removal.	70	SF	35	2450	Required Item
i3-3	04 03 10	SC2 - Cast stone masonry atmospheric soiling removal.	80	SF	35	2800	Required Item
i3-4	04 03 22	BRP - Brick masonry replacement: Remove and replace cracked, spalled or otherwise defective brick with new to match existing in size, color and texture.	20	SF	100	2000	Required Item
i3-5	04 03 22	LRP - Lintel replacement: Remove and replace lintel with new to match existing. Install membrane flashing over lintel with SS steel drip edge and re-brick with new brick to match existing.	5	LF	175	875	Required Item
i3-6	04 03 42	SP - Cast Stone patch repair: Perform cast stone patch repairs with compatible patching compound and repairs of underlying reinforcement as required.	10	SF	350	3500	Required Item
i3-7	04 03 42	SC - Cast Stone crack repair: Route-out crack at ports and inject a cementitious crack filler into cracks. Finish crack with compatible patching compound to match existing cast stone.	10	LF	100	1000	Required Item
i3-8	04 20 00	PR1 - Main roof parapet replacement: Remove existing sheet metal cladding. Remove brick parapet down to spandrel, rebuild parapet with bricks. Replace cast-stone copings with new.	35	LF	1500	52500	Required Item
i3-9	04 20 00	PR2 - Main roof front parapet replacement: Remove existing sheet metal cladding. Remove brick parapet down to spandrel beam and rebuild parapet with new. Replace cast stone copings with new.	5	LF	1500	7500	Required Item
i3-10	04 72 00	WS - Window sill replacement: Remove existing window sill, install zinc-coated copper flashing below sill and stainless steel spring loaded dowels. Replace sill with new to match existing.	20	LF	175	3500	Required Item
i3-11	04 72 00	CRP - 6th floor cornice replacement: Remove and replace existing cast stone cornice down to frieze stone. Scrape, prime and paint exposed spandrel beams.	35	LF	1500	52500	Required Item



Project: Heckscher Building - Partial Exterior Envelope Upgrade Rebid

Location: 1230 5th Avenue, New York NY 10029

Bidder: _____

DDC ID: PV467WFAC

Sponsor Agency: DCLA

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
	CONTRACT 1 - GENERAL CONSTRUCTION WORK							
01 0000	GENERAL REQUIREMENTS (DDC GENERAL CONDITIONS)							
01 0000	GENERAL REQUIREMENTS (DDC GENERAL CONDITIONS)							
	Temporary Power/ Lighting	1	LS					\$48,000.00
	Sidewalk Shed Installation and dismantle	340	LF	\$200.00				\$68,000.00
	Sidewalk Shed Rental	13	Months					
	Scaffolding Installation and dismantle	31900	SF	\$15.00				\$478,500.00
	Scaffolding Rental	16	Months					
	Mobilization	1	LS					\$50,647.00
	Subtotal							\$645,147.00
02 0000	EXISTING CONDITIONS							
02 4296	HISTORIC REMOVAL AND DISMANTLING							
	BRP - Remove cracked, spalled or otherwise defective brick at West Facades	50	SF	\$8.00	\$400	\$12.00	\$600	\$1,000.00
	BR - Cutting and grinding cracked, eroded or otherwise defective brick masonry mortar joints	12675	SF	\$5.00	\$63,375	\$5.00	\$63,375	\$126,750.00
	LRP - Remove three (3) Courses of brick above existing lintel, remove lintel, place temp shoring unit new lintel is installed	50	LF	\$30.00	\$1,500	\$70.00	\$3,500	\$5,000.00
	SR1 - Cutting and grinding cracked, eroded or otherwise defective cast-stone mortar joints at belt courses and window cornices	1090	LF	\$2.00	\$2,180	\$3.00	\$3,270	\$5,450.00
	SR2 - Cutting and grinding cracked, eroded or otherwise defective cast-stone masonry mortar joints along the 1st floor	1090	LF	\$2.00	\$2,180	\$3.00	\$3,270	\$5,450.00
	CT - Remove existing paint coating over the cast-stone at the 1st and 2nd floors	2500	SF	\$1.00	\$2,500	\$3.00	\$7,500	\$10,000.00
	X-cost for masking doors and windows	4327	SF	\$5.00	\$21,635	\$5.00	\$21,635	\$43,270.00
	X-cost for pedestrian protection (10%)	2728	SF	\$5.00	\$13,640	\$10.00	\$27,280	\$40,920.00
	WS - Remove cast-stone window's sills	200	LF	\$10.00	\$2,000	\$40.00	\$8,000	\$10,000.00
	PR1 - Remove and discard existing sheet metal cladding from exterior face of roof parapets	310	LF	\$5.00	\$1,550	\$3.00	\$930	\$2,480.00
	PR1 - Remove three-Wythe brick parapet in its entirety including flashings, copings, anchors, etc. down to spandrel beam	310	LF	\$40.00	\$12,400	\$60.00	\$18,600	\$31,000.00
	PR2 - Remove and discard existing sheet metal cladding from exterior face of roof parapets	35	LF	\$10.00	\$350	\$6.00	\$210	\$560.00
	PR2 - Remove three-Wythe brick parapet in its entirety including flashings, copings, anchors, etc. down to spandrel beam	35	LF	\$90.00	\$3,150	\$54.00	\$1,890	\$5,040.00
	CRP - Remove existing 6th floor cast-stone cornice down to frieze stone	350	LF	\$60.00	\$21,000	\$90.00	\$31,500	\$52,500.00
	CRP - Remove existing concrete filling from 6th floor spandrel beam	350	LF	\$10.00	\$3,500	\$20.00	\$7,000	\$10,500.00



Project: Heckscher Building - Partial Exterior Envelope Upgrade Rebid

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CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
	CRP - Remove existing 6th floor frieze stone	350	LF	\$10.00	\$3,500	\$10.00	\$3,500	\$7,000.00
	W1 - Remove Window type 1	1450	SF	\$34.00	\$49,300	\$23.00	\$33,350	\$82,650.00
	W2 - Remove Window type 2	1710	SF	\$52.00	\$88,920	\$35.00	\$59,850	\$148,770.00
	W3 - Remove Window type 3	468	SF	\$59.00	\$27,612	\$39.00	\$18,252	\$45,864.00
	W4 - Remove Window type 4	210	SF	\$47.00	\$9,870	\$31.00	\$6,510	\$16,380.00
	W5 - Remove Window type 5	198	SF	\$40.00	\$7,920	\$27.00	\$5,346	\$13,266.00
	W6 - Remove Window type 6	225	SF	\$44.00	\$9,900	\$29.00	\$6,525	\$16,425.00
	W7 - Remove Window type 7	36	SF	\$110.00	\$3,960	\$73.00	\$2,628	\$6,588.00
	W8 - Remove Window type 8	30	SF	\$18.00	\$540	\$12.00	\$360	\$900.00
	Debris Disposal	100	TON	\$250.00	\$25,000	\$150.00	\$15,000	\$40,000.00
	Subtotal							\$727,763.00
02 8213	ASBESTOS ABATEMENT							
	Asbestos Abatement		LS					\$331,340.00
	Subtotal							\$331,340.00
04 0000	MASONRY							
04 0310	HISTORIC MASONRY TREATMENT							
	EFF - Perform cleaning of efflorescence at brick and cast stone masonry with a pH neutral or nearly neutral cleaner.	930	SF	\$3.00	\$2,790	\$5.00	\$4,650	\$7,440.00
	BC - Perform cleaning of biological and atmospheric and soiling at brick masonry with an alkaline cleaner.	12675	SF	\$10.00	\$126,750	\$15.00	\$190,125	\$316,875.00
	SC1 - Perform cleaning of biological soiling at cast-stone masonry with an alkaline cleaner	765	SF	\$14.00	\$10,710	\$21.00	\$16,065	\$26,775.00
	SC2 - Perform cleaning of atmospheric soiling at cast-stone masonry an alkaline cleaner	800	SF	\$14.00	\$11,200	\$21.00	\$16,800	\$28,000.00
	Subtotal							\$379,090.00
04 0322	HISTORIC BRICK MASONRY UNIT MASONRY REPAIR							
	BRP - Replace cracked, spalled or otherwise defective brick with new to match existing in size, color and texture at localized areas	50	SF	\$32.00	\$1,600	\$48.00	\$2,400	\$4,000.00
	LRP - Lintel replacement with hot-dip galvanized steel angles (size to match existing). Paint angles with 2 coats of Tnemec (or equal) paint with primer	50	LF	\$100.00	\$5,000	\$250.00	\$12,500	\$17,500.00
	Subtotal							\$21,500.00
04 0323	HISTORIC BRICK MASONRY UNIT MASONRY REPOINTING							
	BR - Repoint cracked, eroded or otherwise defective brick masonry mortar joints	12675	SF	\$8.00	\$101,400	\$12.00	\$152,100	\$253,500.00
	Subtotal							\$253,500.00
04 0342	HISTORIC CAST STONE MASONRY REPAIR							



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Sponsor Agency: DCLA

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
	SC - Perform cast-stone crack repairs. Route-out crack at ports and inject a cementitious crack filler into cracks	60	LF	\$40.00	\$2,400	\$60.00	\$3,600	\$6,000.00
	SP - Perform cast-stone patch repairs with a compatible compound and repairs of underlying reinforcement	100	SF	\$140.00	\$14,000	\$210.00	\$21,000	\$35,000.00
	Subtotal							\$41,000.00
04 0343	HISTORIC CAST STONE MASONRY REPOINTING							
	SR1 - Repoint cracked, eroded or otherwise defective cast-stone mortar joints at belt courses and window cornice	1090	LF	\$3.00	\$3,270	\$7.00	\$7,630	\$10,900.00
	SR2 - Repoint cracked, eroded or otherwise defective cast-stone masonry mortar joints along the 1st floor	1090	LF	\$3.00	\$3,270	\$7.00	\$7,630	\$10,900.00
	Subtotal							\$21,800.00
04 2000	UNIT MASONRY REBUILDING							
	LRP - Replace at least three (3) courses of brick above existing lintel. Replace displaced and deflected lintels with hot-dip galvanized steel angles . Paint angles with 2 coats of Tnemec paint with primer	50	LF	\$70.00	\$3,500	\$175.00	\$8,750	\$12,250.00
	PR1 - Rebuild the parapet with bricks to match existing. Parapet height to match existing. Provide reinforcing steel and stainless steel mesh trusses every 3 courses	310	SF	\$100.00	\$31,000	\$128.00	\$39,680	\$70,680.00
	PR2 - Rebuild the parapet with bricks to match existing. Parapet height to match existing. Provide reinforcing steel and stainless steel mesh trusses every 3 courses	35	LF	\$400.00	\$14,000	\$500.00	\$17,500	\$31,500.00
	Subtotal							\$114,430.00
04 7200	CAST STONE MASONRY REBUILDING							
	PR1 - Coping stone	310	LF	\$25.00	\$7,750	\$60.00	\$18,600	\$26,350.00
	PR2 - Coping stone	35	LF	\$25.00	\$875	\$60.00	\$2,100	\$2,975.00
	WS - Replace cast-stone window's sills. Install stainless steel flashing below sills and stainless steel anchorage as necessary	200	LF	\$40.00	\$8,000	\$60.00	\$12,000	\$20,000.00
	CRP - Replace 6th floor cast-stone cornice down to frieze stone	350	LF	\$300.00	\$105,000	\$1,200.00	\$420,000	\$525,000.00
	CRP - Replace 6th frieze stone	350	LF	\$100.00	\$35,000	\$200.00	\$70,000	\$105,000.00
	CRP - Replace concrete filling from 6th floor spandrel beams	350	LF	\$20.00	\$7,000	\$50.00	\$17,500	\$24,500.00
	BM - Spandrel beam reinforcement, welded plate to support cornice	115	LF	\$300.00	\$34,500.00	\$700.00	\$80,500	\$115,000.00
	Subtotal							\$818,825.00
07 0000	THERMAL AND MOISTURE PROTECTION							
07 1416	COLD FLUID-APPLIED WATERPROOFING							



Project: Heckscher Building - Partial Exterior Envelope Upgrade Rebid

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Bidder: _____

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Sponsor Agency: DCLA

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
	LRP - Install membrane flashing over lintel with lead coated copper drip edge For Lintel replacement	50	LF	\$25.00	\$1,250	\$50.00	\$2,500	\$3,750.00
	CRP - Liquid applied PMMA membrane flashing at new cornice	350	LF	\$30.00	\$10,500	\$40.00	\$14,000	\$24,500.00
	PR1 - Liquid applied PMMA (coordinated with roof replacement scope)	341	LF	\$40.00	\$13,640	\$60.00	\$20,460	\$34,100.00
	PR2 - Liquid applied PMMA (coordinated with roof replacement scope)	341	LF	\$36.00	\$12,276	\$54.00	\$18,414	\$30,690.00
	Subtotal							\$93,040.00
07 6200	SHEET METAL FLASHING AND TRIM							
	WS - Install stainless steel flashing below sills at cast-stone window's sills replacement West Facades.	341	LF	\$6.00	\$2,046	\$14.00	\$4,774	\$6,820.00
	CRP - Two piece copper through-wall counter flashing	350	LF	\$15.00	\$5,250	\$25.00	\$8,750	\$14,000.00
	PR1 - Two piece copper through-wall counter flashing	341	LF	\$15.00	\$5,115	\$25.00	\$8,525	\$13,640.00
	PR2 - Two piece copper through-wall counter flashing	341	LF	\$15.00	\$5,115	\$25.00	\$8,525	\$13,640.00
	Subtotal							\$48,100.00
07 9100	PERFORMED JOINT SEALS							
	(Included with 071416 Cold Fuild-Applied Waterproofing)							
07 9200	JOINT SEALANTS							
	(Included with 071416 Cold Fuild-Applied Waterproofing)							
08 0000	OPENINGS							
08 5113	ALUMINUM WINDOWS							
	W1 - Window type 1 new sachets set in existing frames (non-custom)	1450	SF	\$110.00	\$159,500	\$75.00	\$108,750	\$268,250.00
	W2 - Window type 2 new sachets set in existing frames (non-custom)	1710	SF	\$172.00	\$294,120	\$115.00	\$196,650	\$490,770.00
	W3 - Window type 3 new sachets set in existing frames (non-custom)	468	SF	\$195.00	\$91,260	\$130.00	\$60,840	\$152,100.00
	W4 - Window type 4 new sachets set in existing frames (non-custom)	210	SF	\$155.00	\$32,550	\$103.00	\$21,630	\$54,180.00
	W5 - Window type 5 new sachets set in existing frames (non-custom)	198	SF	\$133.00	\$26,334	\$89.00	\$17,622	\$43,956.00
	W6 - Window type 6 new sachets set in existing frames (non-custom)	225	SF	\$145.00	\$32,625	\$97.00	\$21,825	\$54,450.00
	W7 - Window type 7 new sachets set in existing frames (non-custom)	36	SF	\$367.00	\$13,212	\$244.00	\$8,784	\$21,996.00
	PR2 - Two piece copper through-wall counter flashing	35	LF	\$24.00	\$840	\$36.00	\$1,260	\$2,100.00
	Subtotal							\$1,087,802.00

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
08 9119	FIXED LOUVERS							
	W8 - Window type 8 new sachets set in existing frames (non-custom)	30	SF	\$59.00	\$1,770	\$40.00	\$1,200	\$2,970.00
	Subtotal							\$2,970.00
09 0000	FINISHES							
09 9600	HIGH-PERFORMANCE COATINGS							
	PA - Scrape prime and paint deteriorated window lintels	350	LF	\$3.00	\$1,050	\$6.00	\$2,100	\$3,150.00
	CRP - prime and paint exposed spandrel beams	350	LF	\$3.00	\$1,050	\$6.00	\$2,100	\$3,150.00
	Subtotal							\$6,300.00
09 9653	ELASTOMERIC COATINGS							
	WSC - Install elastomeric coating at cast-stone window's sills	4327	SF	\$2.00	\$8,654	\$2.00	\$8,654	\$17,308.00
	Subtotal							\$17,308.00
	TOTAL CONTRACT 1 - GENERAL CONSTRUCTION WORK							\$4,609,915.00

SCHEDULE B – M/WBE Utilization Plan

Part 1: M/WBE Participation Goals

Contract Overview (To be completed by contracting agency)

APT E-Pin# 85021B0179 FMS Project ID# PV467WFAC
 Project Title _____ Agency PIN# 8502021PV0006C
 Contracting Agency NYC DDC Bid/Proposal Response Date 8/13/2021
 Agency Address 30-30 Thomson Ave City Long Island City State NY ZIP 11101
 Contact Person Brandon A. Milliner Sr. Title M/WBE Compliance Analyst/Design Build
 Telephone 718-391-1416 Email Millinebr@ddc.nyc.gov

Project Description (attach additional pages if necessary)

The Heckscher Building-Partial Exterior Envelope Upgrade (REBID)-Borough of Manhattan

Bidder or proposer ☐ is required OR ☐ is not required to specifically identify the contact information of all M/WBE firms they intend to use as a subcontractor on this contract, including the M/WBE vendor name, address and telephone number in the space provided below in Part 2 Section 4.

M/WBE Participation Goals for Services

Enter the percentage amount for each category or for an unspecified Goal.

Prime Contract Industry: Construction

Category and Breakdown:

Unspecified 17.00 %
 Black American _____ %
 Hispanic American 5.00 %
 Asian American _____ %
 Women _____ %

Total Participation Goals 22.00 %
 Line 1

Part 2: M/WBE Participation Plan

(To be completed by the bidder/proposer unless granted a full waiver, which must be submitted with the bid/proposal in lieu of this form)

Section 1: Prime Contractor Contact Information

Tax ID# 20-3937029 FMS Vendor ID# PV467WFAC
 Business Name SHARAN BUILDERS, INC. Contact Person MANJIT SINGH
 Business Address 12812 18TH AVENUE City COLLEGE POINT State NY ZIP 11356
 Telephone 718-361-1700 Email SHARANBUILDERSINC@GMAIL.COM

Section 3: Contractor M/WBE Utilization Plan

Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation. Check applicable box. The Proposer or Bidder will fulfill the M/WBE Participation Goals:

- ☒ As an M/WBE Prime Contractor that will self-perform and/or subcontract to other M/WBE firms a portion of the contract the value of which is at least the amount located on Lines 2 or 3 in the panels in Section 2, as applicable. The value of any work subcontracted to non-M/WBE firms will not be credited towards fulfillment of M/WBE Participation Goals. Please check all that apply to Prime Contractor: ☒ MBE ☐ WBE
- ☐ As a Qualified Joint Venture with an M/WBE partner, in which the value of the M/WBE partner's participation and/or the value of any work subcontracted to other M/WBE firms is at least the amount located on Lines 2 or 3 in the panels in Section 2, as applicable. The value of any work subcontracted to non-M/WBE firms will not be credited towards fulfillment of M/WBE Participation Goals.
- ☐ As a non-M/WBE Prime Contractor that will enter into subcontracts with M/WBE firms the value of which is at least the amount located on Lines 2 or 3 in the panels in Section 2, as applicable.

Section 2: M/WBE Utilization Goal Calculation

Prime Contractor Adopting Agency Participation Goals

For Prime Contractors (including Qualified Joint Ventures and M/WBE firms) adopting Agency M/WBE Participation Goals.

Total Bid/Proposal Value \$ 4,896,053.24
 multiplied by x
 Total Participation Goals 22.00 %
 (Line 1 above)

Calculated M/WBE Participation Amount \$ 1,077,131.71
 Line 2

OR

Prime Contractor With Partial Waiver Approval Adopting Revised Participation Goals

For Prime Contractors (including Qualified Joint Ventures and M/WBE firms) adopting Revised M/WBE Participation Goals.

Total Bid/Proposal Value \$ _____
 multiplied by x
 Total Revised Participation Goals _____ %

Calculated M/WBE Participation Amount \$ _____
 Line 3

Section 4: General Contract Information

What is the expected percentage of the total contract dollar value that you expect to award in subcontracts for services, regardless of M/WBE status?

31.00 %

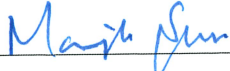
Enter a brief description of the type(s) and dollar value of subcontracts for all services you plan to subcontract if awarded this contract, along with the anticipated start and end dates for such subcontracts. For each item, indicate whether the work is designated for participation by an M/WBE. Where the contracting agency's solicitation has indicated a requirement that the bidder or proposer specifically identify the contact information of all M/WBEs they intend to use on this contract, vendors must also include the M/WBE vendor name, address and telephone number in the space provided below. Use additional sheets if necessary.

Description of Work	Start Date (MM/YY)	End Date (MM/YY)	Planned \$ Amount	Designated for M/WBE		M/WBE Vendor Name	M/WBE Address	M/WBE Telephone
				Y	N			
1. ASBESTOS ABATEMENT	TBD /	480 /	\$ 220,700.00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	CMC ENVIROMENTAL CORP	12925 134TH STRET SOUTH OZONE PARK, NY 11420	(718) 845 - 1387
2. SCAFFOLDING SHED	TBD /	480 /	\$ 300,000.00	<input type="checkbox"/>	<input type="checkbox"/>	TBD		() -
3. WINDOW WORK	TBD /	480 /	\$ 983,229.00	<input type="checkbox"/>	<input type="checkbox"/>	TBD		() -
4. DEBRIS CONTAINER	TBD /	480 /	\$ 25,000.00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	AAC BUILDERS CARTING LLC	182 SHAW AVENUE, IRVINGTON, NJ 07111	(973) 923 - 1551
5. _____	/	/	\$ _____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	() -
6. _____	/	/	\$ _____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	() -
7. _____	/	/	\$ _____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	() -
8. _____	/	/	\$ _____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	() -
9. _____	/	/	\$ _____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	() -
10. _____	/	/	\$ _____	<input type="checkbox"/>	<input type="checkbox"/>	_____	_____	() -

Section 5: Vendor Certification and Required Affirmations

I hereby:

1. acknowledge my understanding of the M/WBE participation requirements as set forth herein and the pertinent provisions of Section 6-129 of the Administrative Code of the City of New York ("Section 6-129"), and the rules promulgated thereunder;
2. affirm that the information supplied in support of this M/WBE Utilization Plan is true and correct;
3. agree, if awarded this Contract, to comply with the M/WBE participation requirements of this Contract, the pertinent provisions of Section 6-129, and the rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract;
4. agree and affirm that it is a material term of this Contract that the Vendor will award the total dollar value of the M/WBE Participation Goals to certified MBEs and/or WBEs, unless a full waiver is obtained or such Goals are modified by the Agency; and
5. agree and affirm, if awarded this Contract, to make all reasonable, good faith efforts to meet the M/WBE Participation Goals, or If a partial waiver is obtained or such Goals are modified by the Agency, to meet the modified Participation Goals by soliciting and obtaining the participation of certified MBE and/or WBE firms.

Signature 

Date 12-28-2021

Print Name MANJIT SINGH

Title PRESIDENT

Pre-Award Process

The bidder is advised that as part of the pre-award review of its bid, it may be required to submit the information described in Sections (A) through (D) below. If required, the bidder must submit such information within five (5) business days following receipt of notification from DDC that it is among the low bidders. Such notification from DDC will be by email and will specify the types of information which must be submitted directly to DDC.

In the event the bidder fails to submit the required information within the specified time frame, its bid may be rejected as nonresponsive.

- (A) **Project Reference Form:** If required, the bidder must complete and submit the Project Reference Form set forth in this Bid Booklet. The Project Reference Form consists of 3 parts: (1) Contracts Completed by the Bidder, (2) Contracts Currently Under Construction by the Bidder, and (3) Pending Contracts Not Yet Started by the Bidder.
- (B) **Copy of License:** If required, the bidder must submit a copy of the license under which the bidder will be performing the work. Such license must clearly show the following: (1) Name of the Licensee, (2) License Number, and (3) Expiration date of the License. A copy of the license will be required from bidders for the following contracts: Plumbing Work, Electrical Work and Asbestos Abatement.
- (C) **Financial Information:** If required, the bidder must submit the financial information described below:
 - (1) **Audited Financial Statements:** Financial statements (Balance Sheet and Income Statement) of the entity submitting the bid, as audited by an independent auditor licensed to practice as a certified public accountant (CPA). Audited financial statements for the three most recent fiscal years must be submitted. Each such financial statement must include the auditor's standard report.

If the bidder does not have audited financial statements, it must submit an affidavit attesting to the fact that the bidder does not have such statements. In addition, the bidder must submit the following documentation covering the three most recent fiscal years: signed federal tax returns, unaudited financial statements, and a "certified review letter" from a certified public accountant (CPA) verifying the unaudited financial statements.

Unless the most recent audited or unaudited financial statement was issued within ninety (90) days, the bidder must submit interim financial information that includes data on financial position and results of operation (income data) for the current fiscal year. Such information may be summarized on a monthly or quarterly basis or at other intervals.
 - (2) **Schedule of Aged Accounts Receivable,** including portion due within ninety (90) days.

(D) **Project Specific Information:** If required, the bidder must submit the project specific information described below:

- (1) Statement indicating the number of years of experience the bidder has had and in what type of construction.
- (2) Resumes of all key personnel to be involved in the project, including the proposed project superintendent.
- (3) List of significant pieces of equipment expected to be used for the contract, and whether such equipment is owned or leased.
- (4) Description of work expected to be subcontracted, and to what firms, if known.
- (5) List of key material suppliers.
- (6) Preliminary bar chart time schedule
- (7) Contractor's expected means of financing the project. This should be based on the assumption that the contractor is required to finance 2X average monthly billings throughout the contract period.
- (8) Any other issues the contractor sees as impacting his ability to complete the project according to the contract.

In addition to the information described in Sections (A) through (D) above, the bidder shall submit such additional information as the Commissioner may require, including without limitation, an explanation or justification for specific unit price items.

The bidder is further advised that it may be required to attend a pre-award meeting with DDC representatives. If such a meeting is convened, the bidder will be advised as to any additional material to be provided.

A. PROJECT REFERENCES – CONTRACTS COMPLETED BY THE BIDDER *updated with details**

List all contracts substantially completed within the last 4 years, up to a maximum of 10, in descending order of date of substantial completion.

Project & Location	Contract Type	Contract Amount (\$000)	Date Completed	Owner Reference & Tel. No.	Architect/Engineer Reference & Tel. No. if different from owner
BW1229585 Facade Restoration Woodside, Sotomayor	GC	\$3,179,511.65	12/2016	NYCHA 212-306-4203	Chirag Patel
BW1229585 Facade Restoration Coney Island, Forest	GC	\$4,575,763.68	11/2015	NYCHA 212-306-4203	Chirag Patel
44401-C Lexington Armory	GC	\$1,011,790	03/2017	NYS OGS 845-374-2922	Juan Alvarenga
EC081-C Sandy Remediation, South Beach PC, Interior Damages Repairs	GC	\$1,601,036	04/2015	NYS OGS 718-668-0741	Miriam Morros
PV466CRLB Queens Theatre in the Park- Circular Lobby Reconstruction	GC	\$1,184,000.00	04/2018	NYC DDC 718-787-6766	Joe Tambarino
CO284EXT2 111 Center Street Bulkhead Restoration & Roof	GC	\$5,468,000.00	4/20/2019	NYC DDC 718-391-1108	Ali Azad
45021-C SUNY DOWNSTATE MEDICAL CENTER Masonry Work	GC	\$1,076,000.00	7/2019	NYS OGS 516-972-3967	Pierre Boucicaut

B. PROJECT REFERENCES – CONTRACTS CURRENTLY UNDER CONSTRUCTION BY THE BIDDER

List all contracts currently under construction even if they are not similar to the contract being awarded.

Project & Location	Contract Type	Contract Amount (\$000)	Subcontracted to Others (\$000)	Uncompleted Portion (\$000)	Date Scheduled to Complete	Owner Reference & Tel. No.	Architect/Engineer Reference & Tel. No. if different from owner
LNXA12GRC Grand Concourse Library Interior ADA Upgrade	GC	\$3,230,999.60	\$970,350	\$323,099.96	3/31/2021	NYC DDC 646-235-3427	Hamid Tavana
LNEA13TNK Throgs Neck Roof & HVAC Upgrade	GC	\$2,786,000.00	\$1,229,063.00	\$278,600.00	3/31/2021	NYC DDC	Bienvenidd Perez JR
PV226EXT Mind Builders Center Exterior Rennovation	GC	\$1,849,000.00	\$213,500.00	\$652,803.26	4/30/2021	NYC DDC 718-391-1352	Shavar Lewis
PV464PRKG Wave Hill Parking Lot and Gate House	GC	\$3,321,000.00	\$1,665,957.00	\$969,028.50	3/31/2021	NYC DDC 718-391-1352	Shavar Lewis
BG-918M Sidewalk Replacement	GC	\$1,775,000.00	\$300,000.00	\$200,000.00	8/31/2021	NYC Parks 718-361-8352	Amanda Diamond
QG-1118M Sidewalk Replacement	GC	\$2,275,000.00	\$300,000.00	\$113,750	9/21/2021	NYC Parks 718-361-8352	Courtney Rose

B. PROJECT REFERENCES – CONTRACTS CURRENTLY UNDER CONSTRUCTION BY THE BIDDER

List all contracts currently under construction even if they are not similar to the contract being awarded.

Project & Location	Contract Type	Contract Amount (\$000)	Subcontracted to Others (\$000)	Uncompleted Portion (\$000)	Date Scheduled to Complete	Owner Reference & Tel. No.	Architect/Engineer Reference & Tel. No. if different from owner
Clinton CF Rehabilitate Perimeter Wall GC 45929C		5,780,300.00	450,000.00	5,730,000.00	11/24/2022	NYS OGS 518-492-2200	WILLIAM MINER

C. PROJECT REFERENCES – PENDING CONTRACTS NOT YET STARTED BY THE BIDDER

List all contracts awarded to or won by the bidder but not yet started.

Project & Location	Contract Type	Contract Amount (\$000)	Date Scheduled to Start	Owner Reference & Tel. No.	Architect/Engineer Reference & Tel. No. if different from owner
N.A					

SAFETY QUESTIONNAIRE

The Bidder must include, with its bid, all information requested on this Safety Questionnaire. Failure to provide a completed and signed Safety Questionnaire at the time of bid opening may result in disqualification of the bid as non-responsive. This Safety Questionnaire will be reviewed as per Section V of the Safety Requirements for Construction Contracts, found in Volume 2 of the Contract.

1. Bidder Information:

Company Name: **SHARAN BUILDERS, INC.**

DDC Project Number: **PV467WFAC**

Company Size: ☐ Ten (10) employees or less

☒ Greater than ten (10) employees

Company has previously worked for DDC: ☒ YES ☐ NO

2. Type(s) of Construction Work:

Identify the types of work that the Bidder has performed in the last three years, and the types of work that are part of this Contract.

<u>TYPE OF WORK</u>	<u>LAST 3 YEARS</u>	<u>THIS PROJECT</u>
General Building Construction	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Residential Building Construction	<input type="checkbox"/>	<input type="checkbox"/>
Nonresidential Building Construction	<input type="checkbox"/>	<input type="checkbox"/>
Heavy Construction, except building	<input type="checkbox"/>	<input type="checkbox"/>
Highway and Street Construction	<input type="checkbox"/>	<input type="checkbox"/>
Heavy Construction, except highways	<input type="checkbox"/>	<input type="checkbox"/>
Plumbing, Heating, HVAC	<input type="checkbox"/>	<input type="checkbox"/>
Painting and Paper Hanging	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Electrical Work	<input type="checkbox"/>	<input type="checkbox"/>
Masonry, Stonework and Plastering	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Carpentry and Floor Work	<input type="checkbox"/>	<input type="checkbox"/>
Roofing, Siding, and Sheet Metal	<input type="checkbox"/>	<input type="checkbox"/>
Concrete Work	<input type="checkbox"/>	<input type="checkbox"/>
Specialty Trade Contracting	<input type="checkbox"/>	<input type="checkbox"/>
Asbestos Abatement	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify) _____	<input type="checkbox"/>	<input type="checkbox"/>

3. Experience Modification Rate:

The Experience Modification Rate (EMR) is a rating generated by the National Council of Compensation Insurance (NCCI). This rating is used to determine the contractor's premium for worker's compensation insurance. The Bidder / Contractor may obtain its EMR by contacting its insurance broker or the NCCI. If the Bidder cannot obtain its EMR, it must submit a written explanation as to why.

The Bidder must indicate its Intrastate and Interstate EMR for the past three years. [Note: For contractors with less than three years of experience, the EMR will be considered to be 1.00].

YEAR	INTRASTATE RATE	INTERSTATE RATE
2020	0.94	0
2019	0.94	0
2018	0.94	0

If the Intrastate and/or Interstate EMR for any of the past three years is greater than 1.00, the Bidder / Contractor must attach, to this questionnaire, a written explanation for the rating and identify what corrective action was taken to correct the situation resulting in that rating.

4. OSHA Information:

☐ YES ☒ NO Contractor has received a willful violation issued by OSHA or a New York City Department of Buildings (NYCDOB) construction-related violation within the last three years.

☐ YES ☒ NO Contractor has had an incident requiring OSHA notification within 8 hours (all work-related fatalities) or an incident requiring OSHA notification within 24 hours (work-related in-patient hospitalization, amputation and all loss of an eye).

The OSHA Form 300 "Log of Work-Related Injuries and Illnesses" and OSHA Form 300A "Summary of Work-Related Injuries and Illnesses" must be submitted for the last three years for Contractors with more than ten employees.

The Bidder / Contractor must indicate the total number of hours worked by its employees, as reflected in payroll records for the past three (3) years.

The Bidder / Contractor must submit the Incident Rate for Lost Time Injuries (the Incident Rate) for the past three (3) years. The Incident Rate is calculated in accordance with the formula set forth below. For each given year, the total number of incidents is the total number of non-fatal injuries and illnesses reported on the OSHA Form 300 and OSHA Form 300A. The 200,000 hours represents the equivalent of 100 employees working forty hours a week, fifty (50) weeks per year.

$$\text{Incident Rate} = \frac{\text{Total Number of Incidents} \times 200,000}{\text{Total Number of Hours Worked by Employees}}$$

YEAR	TOTAL NUMBERS OF HOURS WORKED BY EMPLOYEES	INCIDENT RATE
2020	28,453	0
2019	19,473	0
2018	14,274	0

If the Bidder's / Contractor's Incident Rate for any of the past three years is one point higher than the Incident Rate for the type of construction it performs (listed below), the Bidder / Contractor must attach, to this questionnaire, a written explanation for the relatively high rate.

General Building Construction	8.5
Residential Building Construction	7.0
Nonresidential Building Construction	10.2
Heavy Construction, except building	8.7
Highway and Street Construction	9.7
Heavy Construction, except highways	8.3
Plumbing, Heating, HVAC	11.3
Painting and Paper Hanging	6.9
Electrical Work	9.5
Masonry, Stonework and Plastering	10.5
Carpentry and Floor Work	12.2
Roofing, Siding, and Sheet Metal	10.3
Concrete Work	8.6
Specialty Trade Contracting	8.6

5. Safety Performance on Previous DDC Project(s)

☐ YES ☒ NO Fatality or an incident requiring OSHA notification within 24 hours (work-related in-patient hospitalization, amputation and all loss of an eye) on DDC Project(s) within the last three (3) years.

DDC Project Number(s): _____, _____, _____

The Bidder hereby affirms that all the information provided in this Safety Questionnaire and all additional pages and/or attachments, if applicable, consist of accurate representations.

Date: 1-24-22

By: 
(Signature of Bidder: Owner, Partner, Corporate Officer)

Title: **PRESIDENT**

ADDENDA CONTROL SHEET

TITLE: The Heckscher Building – Partial Exterior Envelope Upgrade
Rebid

**GENERAL
COUNSEL**

DATE

[illegible]

THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF PUBLIC BUILDINGS

August 3, 2021

ADDENDUM No. # 1

FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

85021B0179 – PV467WFAC

The Heckscher Building – Partial Exterior Envelope Upgrade Rebid

This addendum is issued for the purpose of amending the requirements of the Bid and Contract Documents and is hereby made a part of said Bid and Contract Documents to the same extent as though it were originally included therein.

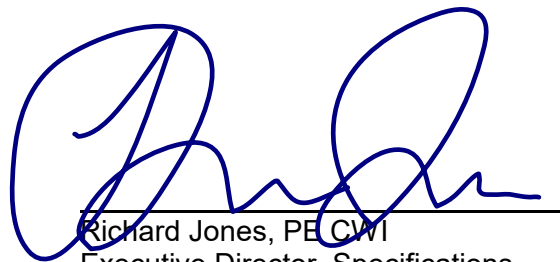
The bidder is advised that the items listed below apply to the project:

1. **Bidders Questions and Responses to Questions:**
See Attachment A.
2. **Revisions to PASSPort forms:**
See Attachment B.
3. **Revisions to Documents:**
See Attachment C.

Transferring Data Between Rounds of an RFX: A new document titled “Transferring Data Between Rounds of an RFX” has been added to the Documents section of the View RFX tab. Please refer to this document when an addendum has been issued. Note: Whenever an addendum is issued, the RFX item grid will be cleared. You can import the work you have already done by following the steps on this document.

DDC strongly advises vendors to finalize and submit bids 48 hours prior to due date and time. The City is not responsible for technical issues (e.g. internet connection, power outages, technology malfunction, computer errors, etc.) related to bid submissions.

If additional information is required, please contact the Department of Design and Construction, Contract Section at (718) 391-1041 or by email at CSB_projectinquiries@ddc.nyc.gov.



Richard Jones, PE, CWM
Executive Director, Specifications

DDC PROJECT #: PV467WFAC

PROJECT NAME: The Heckscher Building – Partial Envelope Upgrade Rebid

ATTACHMENT A - BIDDERS QUESTIONS AND DDC RESPONSES

No.	Bidders Questions	DDC Responses
1	Please provide engineers estimate for this project.	DDC does not disclose this information.
2	None of the following required items for bidding in Volume 1 are provided: <ul style="list-style-type: none">• Volume 1 Bid Booklet: All information for the bidder. This is not project specific.• PASSPort Questionnaire: Forms for use during the bid.• PASSPort Item Grids: Where bid prices are entered.• PASSPort Subcontractor and Joint Venture: where subcontractors are entered. The subcontractor information is used to determine compliance with the M/WBE goals. Please provide these missing documents.	This information is within the PASSPort procurement. Contact help@mocs.nyc.gov for assistance.

DDC PROJECT #: PV467WFAC

PROJECT NAME: The Heckscher Building – Partial Envelope Upgrade Rebid

ATTACHMENT B – REVISIONS TO THE DOCUMENTS

Not Used

DDC PROJECT #: PV467WFAC

PROJECT NAME: The Heckscher Building – Partial Envelope Upgrade Rebid

ATTACHMENT C – REVISIONS TO PASSPORT FORMS

This Addendum initiates Round 2 of the procurement.

Please note that numbering of addenda is independent of rounds.

Questionnaire Changes:

Question added for Pre-Award Process Contact Person

Item Grid Changes:

- Deleted Allowance for Proprietary Items
- Added Allowance for Expanded Work
- Fixed Item Grid functionality



**Department of
Design and
Construction**

PROJECT ID:

PV467WFAC

**THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF PUBLIC BUILDINGS**

30-30 THOMSON AVENUE
LONG ISLAND CITY, NEW YORK 11101-3045
TELEPHONE (718) 391-1000
WEBSITE www.nyc.gov/buildnyc

VOLUME 2 OF 3

**PROJECT LABOR AGREEMENT
INFORMATION FOR BIDDERS
CONTRACT
PERFORMANCE AND PAYMENT BONDS
SCHEDULE OF PREVAILING WAGES
GENERAL CONDITIONS**

FOR FURNISHING ALL LABOR AND MATERIALS
NECESSARY AND REQUIRED FOR THE PROJECT

**The Heckscher Building - Partial
Exterior Envelope Upgrade Rebid**

**LOCATION:
BOROUGH:
CITY OF NEW YORK**

**1230 5th Avenue
Manhattan, NY 10029**

CONTRACT NO. 1

GENERAL CONSTRUCTION WORK

NYC Department of Cultural Affairs

Thornton Tomasetti

Date:

May 26, 2021





**Department of
Design and
Construction**

**THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF PUBLIC BUILDINGS**

30-30 THOMSON AVENUE
LONG ISLAND CITY, NEW YORK 11101-3045
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VOLUME 2 OF 3

**PROJECT LABOR AGREEMENT
INFORMATION FOR BIDDERS
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GENERAL CONDITIONS**

FOR FURNISHING ALL LABOR AND MATERIALS
NECESSARY AND REQUIRED FOR THE PROJECT



NOTICE TO BIDDERS

This contract is subject to a new 2020 Project Labor Agreement

This contract is subject to the attached Project Labor Agreement (“PLA”) entered into between the City and the Building and Construction Trades Council of Greater New York (“BCTC”) affiliated Local Unions. By submitting a bid, the Contractor agrees that if awarded the Contract the PLA is binding on the Contractor and all subcontractors of all tiers.

The bidder to be awarded the contract will be required to execute a Letter of Assent prior to award. The Contractor shall include in any subcontract a requirement that the subcontractor, and sub-subcontractors of all tiers, become signatory to and bound to the PLA with respect to the subcontracted work. The Contractor will also be required to have all subcontractors of all tiers execute a Letter of Assent prior to such subcontractors performing any Program Work.

Bidders are advised that the City of New York and City agencies have entered into multiple PLAs. The terms of each PLA, while similar, are not identical. Please also note that there are revisions between the 2020 Citywide Renovation PLA attached to this bid and the prior 2015 Citywide Renovation PLA.

All bidders are urged to review the entire 2020 Citywide Renovation PLA prior to submitting a bid.

To the extent that the terms of the PLA conflict with any other terms of the invitation for bids, including the Standard Construction Contract, the terms of the PLA shall govern. For example, the PLA section that authorizes the scheduling of a four-day week, ten hours per day on straight time at the commencement of the job, PLA Article 12, Section 1(A), overrides the Standard Construction Contract’s provision concerning a five-day work week with a maximum of eight hours in a day, Standard

Construction Contract Article 37.2.1. Where, however, the invitation for bids, including the Standard Construction Contract, requires the approval of the City/Department, the PLA does not supersede or eliminate that requirement.

This Contract is subject to the apprenticeship requirements of Labor Law § 222 and to apprenticeship requirements established by the Department pursuant to Labor Law § 816-b. Please be advised that the involved trades have apprenticeship programs that meet the statutory requirements of Labor Law § 222(e) and the requirements set by the Department pursuant to Labor Law § 816-b, Contractors and subcontractors who agree to perform the Work pursuant to the PLA are participating in such apprenticeship programs within the meaning of Labor Law § 222(e) and the Department's directive.

If this Contract is subject to the Minority-Owned and Women-Owned Business Enterprise ("M/WBE") program implemented pursuant to New York City Administrative Code § 6-129, the specific requirements of M/WBE participation for this Contract are set forth elsewhere in this bid package. If such requirements are included with this Contract, the City strongly advises Contractors to read those provisions, as well as PLA Article 4, Section 4. A list of certified M/WBE firms may be obtained from the Department of Small Business Services (DSBS) website at <http://mtprawvwsbswtp1-1.nyc.gov/>, emailing MWBE@sbs.nyc.gov, or by calling the DSBS certification hotline at (212) 513-6311, or by visiting or writing the DSBS at One Liberty Plaza, 11th Floor, New York, New York, 10006.

The local collective bargaining agreements (CBAs) that are incorporated into the PLA as PLA Schedule A Agreements are available from the Department's Agency Chief Contract Officer upon the request of any prospective bidder.

Please note that the "PLA Schedule A" is distinct from the Department's Schedule A that is a part of this invitation for bids.

2020 Citywide Renovation Project Labor Agreement Frequently Asked Questions

1. **Q.** Does a Contractor need to be signatory with the unions in the NYC Building and Construction Trades Council (“BCTC”) in order to bid on projects under the PLA?

A. No, any contractor may bid by signing and agreeing to the terms of the PLA. The contractor need not be signatory with these unions by any other labor agreement or for any other project.

2. **Q.** Does a Contractor agreeing to the PLA and signing the Letter of Assent create a labor agreement with these unions outside of the project covered by the PLA?

A. No, the PLA applies only to those projects that the Contractor agrees to perform under the PLA and makes no labor agreement beyond those projects. Contractors do not need to sign any additional agreements (*e.g.*, a collective bargaining agreement) with a union aside from the Letter of Assent to work on a PLA project.

3. **Q.** Do the provisions of the PLA apply equally to subcontractors as well as contractors and how does the PLA affect the subcontractors that a bidder may utilize on the project?

A. Yes, the PLA applies to subcontractors and all subcontractors performing Program Work must agree to become party to the PLA. Subject to the Agency’s approval of subcontractors pursuant to Article 17 of the Standard Construction Contract, a Contractor may use any subcontractor, union or non-union, as long as the subcontractor signs the Letter of Assent. See PLA Article 2, Section 8.

4. **Q.** Are bidders required to submit Letters of Assent signed by proposed subcontractors with their bid in order to be found responsive?

A. No, bidders do not have to submit signed Letters of Assent from their subcontractors with their bid. However, subcontractors performing Program Work will be required to sign the Letter of Assent prior to being approved by the Agency.

5. **Q.** May a Contractor or subcontractor use any of its existing employees to perform this work?

A. Generally, labor will be referred to the Contractor from the respective signatory local unions. However, Contractors and subcontractors may use up to 12% of their existing, qualifying labor force for this work. Certified M/WBEs for which participation goals are set pursuant to NYC Administrative Code § 6-129 that are not signatory to any Schedule A collective bargaining agreements (“CBAs”) may use their existing employees for the 2nd, 4th, 6th and 8th employee (per trade) needed on the job if their contracts are valued at or under \$2,000,000. Any additional workers will be referred to the Contractor in accordance with the 12% referral requirements set forth in the PLA. See PLA Article 4, Section 2.

6. **Q.** Must the City set M/WBE participation goals for the particular project or contract in order for a certified M/WBE to utilize the provisions of PLA Article 4, Section 2(C)?

A. No. PLA Article 4, Section 2(C) specifies what categories of M/WBEs are eligible to take advantage of this provision (i.e., those M/WBEs for which the City is authorized to set participation goals under § 6-129). For purposes of Article 4, Section 2(C), it is not necessary for the project to be subject to § 6-129 or for the City to have actually set participation goals for the particular contract or project. The result is the same where a project receives State funding and therefore is subject to the requirements of Article 15-A of the Executive Law.

7. **Q.** May a Contractor bring in union members from locals that are not signatory unions?

A. Referrals will be from the respective signatory locals and/or locals listed in Schedule A of the PLA. Contractors may utilize ‘traveler provisions’ contained in the local CBAs where such provisions exist and/or in accordance with the provisions of PLA Article 4, Section 2.

8. **Q.** Does a non-union employee working under the PLA automatically become a union member?

A. No, the non-union employee does not automatically become a union member by working on a project covered by the PLA and nothing in the PLA requires employees to join a union or pay dues or fees to a union as a condition of working on the covered project. This Agreement is not, however, intended to supersede independent requirements in applicable local union agreements as to contractors that are otherwise signatory to those agreements and as to employees of such employers performing covered work. Non-union employees will be enrolled in the appropriate benefit plans and earn credit toward various union benefit programs except in certain circumstances as set forth in the PLA. See PLA Article 4, Section 6 and Article 11.

9. **Q.** Are all Contractors and subcontractors working under the PLA, including non-union Contractors and Contractors signatory to CBAs with locals other than those that are signatories to the PLA, required to make contributions to designated employee benefit funds?

A. Except in certain circumstances, as described in the following paragraph, Contractors and subcontractors working under the PLA will be required to contribute on behalf of all employees covered by the PLA to established jointly trustee employee benefit funds designated in the Schedule A CBAs and required to be paid on public works under any applicable prevailing wage law. The Agency may withhold from amounts due the Contractor any amounts required to be paid, but not actually paid into any such fund by the Contractor or a subcontractor. See PLA Article 11, Section 2.

Non-union Contractors with bona fide private benefit plans that satisfy the requirements of Labor Law 220 will not be required to pay into union benefit funds for their employees working pursuant to Article 4, Section 2 (B) and (C) (“Core Employees”) who are already covered under their bona fide private benefit plans. Supplemental

benefit funds in excess of the annualized value of the private benefit plans will be paid directly to workers as additional wages in compliance with Labor Law § 220. At the time of contract award, the Contractor shall make available to the contracting Agency a complete set of plan documents for each private benefit plan into which contributions will be made and/or coverage provided. The Contractor shall also provide certification from a certified public accountant as to the annualized hourly value of such benefits consistent with the requirements of Labor Law § 220. See PLA Article 11, Section 2.

10. **Q.** When do Core Employees become eligible for union benefits?

A. Union benefit plans have their own plan documents that determine eligibility and workers will become eligible for certain benefits at different points in time. Contractors who will have Core Employees should speak with the respective union(s) as to benefit eligibility thresholds. Employees that may remain unaffiliated with any local union at the completion of their employment may apply for any distributions to which they may be entitled from the funds in accordance with the applicable rules and governing documents of the unions and the employee benefit funds.

11. **Q.** What happens if a Contractor or subcontractor fails to make a required payment to a designated employee benefit fund?

A. The PLA sets forth a process for unions to address a Contractor or a subcontractor's failure to make required payments. The process includes potentially the direct payment by the City to the benefit fund of monies owed and the corresponding withholding of payments to the Contractor. See PLA Article 11, Section 2.

Upon notification by a union or fringe benefit fund that a Contractor is delinquent in its payment of benefits and a determination by the Agency that the union or fund has submitted appropriate documentation of such delinquency, the Agency will thereafter require the Contractor to submit cancelled checks or other equivalent proof of payment of benefit contributions with certified payroll reports for work covered by this PLA on which the Contractor is engaged.

The City strongly advises Contractors to read these provisions carefully and to include appropriate provisions in subcontracts addressing these possibilities.

12. **Q.** Does signing on to the PLA satisfy the Apprenticeship Requirements established for this bid?

A. Yes. By agreeing to perform the Work subject to the PLA, the bidder demonstrates compliance with the apprenticeship requirements imposed by this Invitation for Bids.

13. **Q.** Who decides on the number of workers needed?

A. Except as expressly limited by a specific provision of the PLA, a Contractor retains full and exclusive authority for the management of their operations, including the determination as to the number of employees to be hired and the qualifications therefore and the promotion, transfer, and layoff of its employees. See PLA Article 6, Section 1.

14. **Q.** What happens if a union does not provide a worker within 48 hours from the request (Saturdays, Sundays, and holidays excepted)?
- A.** In the event that a Local Union does not fill any request for qualified employees within a 48-hour period after such requisition is made by a Contractor (Saturdays, Sundays and holidays excepted), a Contractor may employ qualified applicants from any other available source.
15. **Q.** May a Contractor discharge a union referral for lack of productivity?
- A.** Except as expressly limited by a specific provision of the PLA, a Contractor retains full and exclusive authority for the management of their operations, including the right to discipline or discharge for just cause its employees. See PLA Article 6, Section 1.
16. **Q.** May a contractor assign a management person to site?
- A.** Yes. Managers are not subject to the provisions of the PLA, so there is no restriction on management and/or other non-trade personnel, as long as such personnel do not perform trade functions. See Article 3, Section 1.
17. **Q.** What type of work can Stewards perform?
- A.** All Stewards must be working Stewards (*i.e.*, they must be performing Program Work). In addition, Stewards may perform other tasks such as receiving complaints or grievances from other employees of the Steward's trade. Stewards may not determine when overtime is worked. Stewards are entitled to the same wages as other employees of that trade. See PLA Article 5, Sections 2 and 3.
18. **Q.** Can a Contractor utilize apprentices?
- A.** Contractors are permitted to utilize apprentices so long as the ratios between journeyman and apprentice do not exceed the allowable ratios set by the New York State Department of Labor ("NYSDOL"). Should a Contractor request that apprentices be provided for Program Work, the referring Local Union shall comply with that request so long as it is consistent with the maximum ratios permitted by NYSDOL.
19. **Q.** What is HireNYC Construction Careers?
- A.** HireNYC Construction Careers is an initiative to advance career opportunities within the construction industry. The initiative has a target goal of 30% of all hours worked on PLA projects are performed by workers who reside in NYCHA housing or zip codes where 15% or more of the residences are below poverty. When a Contractor requests employees, the trades will take into account the target goals when they refer additional workers.

20. **Q.** Does the PLA provide a standard work day across all the signatory trades?
- A.** Yes, all signatory trades will work an eight (8) hour day, Monday through Friday with a day shift at straight time as the standard work week. The PLA also permits a Contractor to schedule a four-day (within Monday through Friday) work week, ten (10) hours per day at straight time if announced at the commencement of the project. See PLA Article 12, Section 1. This is an example where the terms of the PLA override provisions of the Standard Construction Contract (compare with section 37.2 of the Standard Construction Contract). The standard work week may be reduced to 35 or 37 ½ hours of work in those limited circumstances where the City states in the bid documents that the Contractor will not be given access to the site to accommodate an 8-hour day. The 8 hour, 7 ½ hour or 7-hour work day must be established at the commencement of the project by the Agency and may not be altered by the Contractor.
21. **Q.** Does the PLA create a common holiday schedule for all the signatory trades?
- A.** Yes, the PLA recognizes nine common holidays. See PLA Article 12, Section 4.
22. **Q.** Are workers entitled to holiday pay if they do not work on the holiday?
- A.** No. Workers are only entitled to pay if they work on the holiday. See PLA Article 12, Section 4.
23. **Q.** Does the PLA provide for a standard policy for ‘shift work’ across all signatory trades?
- A.** Yes, second and third shifts may be worked with a standard 5% premium pay. In addition, a day shift does not have to be scheduled in order to work the second and third shifts at the 1.05 hourly pay rate. See PLA Article 12, Section 3.
24. **Q.** May the Contractor schedule overtime work, including work on a weekend?
- A.** Yes, the PLA permits the Contractor to schedule overtime work, including work on weekends. See PLA Article 12, Sections 2, 3, and 5. To the extent that the Agency’s approval is required before a Contractor may schedule or be paid for overtime, that approval is still required notwithstanding the PLA language.
25. **Q.** Are overtime payments affected by the PLA?
- A.** Yes, all overtime pay incurred Monday through Saturday will be at time and one half (1 ½). There will be no stacking or pyramiding of overtime pay under any circumstances. See PLA Article 12, Section 2. Sunday and holiday overtime will be paid according to each trade’s CBA.
26. **Q.** Are there special provisions for Saturday work when a day is ‘lost’ during the week due to weather, power failure or other emergency?
- A.** Yes, when this occurs the Contractor may schedule Saturday work at weekday rates. See PLA Article 12, Section 5.

27. **Q.** Does the PLA contain special provisions for the staffing of temporary services?

A. Yes. Where temporary services are required by specific request of the Agency or construction manager, they shall be provided by the Contractor's existing employees during working hours in which a shift is scheduled for employees of the Contractor. The need for temporary services during non-working hours will be determined by the Agency or construction manager. There will be no stacking of trades on temporary services. See PLA Article 15.

28. **Q.** What do the workers get paid when work is terminated early in a day due to inclement weather or otherwise cut short of 8 hours?

A. The PLA provides that employees who report to work pursuant to regular schedule and not given work will be paid two hours of straight time. Work terminated early for severe weather or emergency conditions will be paid only for time actually worked. In other instances where work is terminated early, the worker will be paid for a full day. See PLA Article 12, Sections 6 and 8. The usual reporting pay requirement of two hours for employees who report to their work location pursuant to their regular schedule does not apply when the National Weather Service issues a Weather Advisory and the Contractor speaks to the employee at least four hours before their shift starting time. See PLA Article 12, Section 6.

29. **Q.** Should a local collective bargaining agreement of a signatory union expire during the project will a work stoppage occur on a project subject to the PLA?

A. No. All the signatory unions are bound by the 'no strike' agreement as to the PLA work. Work will continue under the PLA and the otherwise expired local CBA(s) until the new local CBA(s) are negotiated and in effect. See PLA Articles 7 and 19.

30. **Q.** May a Contractor working under the PLA be subject to a strike or other boycott activity by a signatory union at another site while the Contractor is a signatory to the PLA?

A. Yes. The PLA applies ONLY to work under the PLA and does not regulate labor relations at other sites even if those sites are in close proximity to PLA work.

31. **Q.** If a Contractor has worked under other PLAs in the New York City area, are the provisions in this PLA generally the same as the others?

A. While PLAs often look similar to each other, and particular clauses are often used in multiple agreements, each PLA is a unique document and should be examined accordingly.

32. **Q.** What happens if a dispute occurs between the Contractor and an employee during the project?

A. The PLA contains a grievance and arbitration process to resolve disputes between the Contractor and the employees. See PLA Article 9.

33. **Q.** What happens if there is a dispute between locals as to which local gets to provide employees for a particular project or a particular aspect of a project?

A. The PLA provides for jurisdictional disputes to be resolved in accordance with the NY Plan. A copy of the NY Plan is available upon request from the Agency. The PLA provides that work is not to be disrupted or interrupted pending the resolution of any jurisdictional dispute. The work proceeds as assigned by the Contractor until the dispute is resolved. See PLA Article 10.

34. **Q.** Does the PLA contain special provisions for JOCS or task order-based Contracts?

A. The PLA does not apply to Task Orders or Work Orders that do not exceed \$250,000 issued under JOCS or Requirements Contracts. See PLA Article 3, Section 1.

35. **Q.** How do the referral rules work for Operating Engineers Locals 14 and 15?

A. If there is Program Work within the jurisdiction of Operating Engineers Locals 14 or 15, the contractor shall request labor from the appropriate local union. If the locals provide labor consistent with the referral provisions outlined in Article 4, Section 2, the terms of the Local 14 CBA or Local 15 CBA will apply to that work. However, if the locals do not provide labor for that work, the terms of the PLA will apply to such work.

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District Councils & Affiliates Contact Information

Bricklayers & Allied Craftworkers Local 1
4 Court Square
Long Island City, NY 11101
Business Manager: Jack Argila
P: (718) 392-0525
email: jargila@bac1ny.com

BoilerMakers Local 5
24 Van Siclen Avenue
Floral Park, NY 11001
Business Manager: Steve Ludwigson
P: 516-326-2500
email: boilermakerslocal5@verizon.net

Building Concrete & Excavating Laborers Local 731
34-11 35th Avenue
Astoria, NY 11106
Business Manager: Joseph D'Amato
P: 718-706-0720
email: joed731bm@gmail.com

***NYC & Vicinity District Council of Carpenters**
395 Hudson Street, 9th Fl
New York, NY 10014
Business Manager: Joe Geiger
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email: jgeiger@nycdistrictcouncil.org

***Concrete Workers District Council No. 16**
30-56 Whitestone Expressway Suite 320
Flushing, NY 11354
Business Manager: Angelo Angelone
P: 718-886-0516
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Cement Masons Local #780
150-50 14th Rd Suite 4
Whitestone, NY 11357
Business Manager: Gino Castignoli
P: 718-357-3750
email: gcastignoli@noedc.org

Electrical Local 3
158-11 Harry Van Arsdale Jr. Avenue
Flushing, NY 11365
Business Manager: Chris Erikson
P: 718-591-4000
email: cerikson@local3ibew.org

Roofers & Waterproofers Local 8
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LIC, NY 11101
Business Manager: Nick Siciliano
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SheetMetal Workers Local 28
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New York, NY 10013
Business Manager: Eric Meslin
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SheetMetal Workers Local 137
21-42 44th Drive
LIC, NY 11101
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Elevator Constructors Local 1
47-24 27th Avenue
LIC, NY 11101
Business Manager: Lenny Legotte
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Engineers Local 14
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Business Manager: Edwin Christian
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Engineers Local 15, 15A, 15B, 15C & 15D
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Engineers Local 30
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Whitestone, NY 11357
Business Manager: William Lynn
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Engineers Local 94
331-337 West 44th Street
New York, NY 10036
Business Manager: Kuba Brown
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email: kubabrown@local94.com

Heat & Frost Insulators Local 12
35-53 24th Street
LIC, NY 11101
Business Manager: John Jovic
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Heat & Frost Insulators Local 12A
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College Point, NY 11356
Business Manager: Jamie Soto
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Steamfitters Local 638
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LIC, NY 11101
Business Manager: Scott Roche
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Lake Success, NY 11042
Business Manager: Tom Gesauldi
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Teamsters Local 814
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***Iron Workers District Council**
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***Mason Tenders District Council**
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Business Manager: Robert Bonanza
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***Painters District Council No. 9**
45 West 14th Street
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Business Manager: Joe Azzopardi
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Pavers & Roadbuilders DC No.1
136-25 37th Avenue, Suite 502
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Business Manager: Keith Lozcalzo
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Plasterers Local 262
2241 Conner Street
Bronx, NY 10466
Business Manager: Dale Alleyne
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Plumbers Local 1
50-02 5th Street
Long Island City, NY 11101
Business Manager: Michael Apuzzo
P: 718-738-7500 #5904
email: mapuzzo@ualocal1.org

Private Sanitation Local 813
45-18 Court Square, Suite 600
LIC, NY 11101
Business Manager: Sean Campbell
P: 718-937-7010 ext 244
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Tile Marble & Terrazzo Local 7
45-34 Court Square
LIC, NY 11101
Business Manager: William Hill
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Window Cleaners No. 2 SEIU 32BJ
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Business Manager: Gerard McEneaney
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Carpenters District Council

NYC & Vicinity District Council of Carpenters

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New York, NY 10014

Business Manager: Joe Geiger

P: 212-366-7500

Carpenters Local 20
900 South Avenue
Suite 53
Staten Island, NY 10310

Carpenters Local 926
373 96th Street
Brooklyn, NY 11209
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Carpenters Local 45
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Queens Village, NY 11427
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Dockbuilders/Timberman Local 1556
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New York, NY 10014

Carpenters Local 157
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Millwright & Machinery Erectors Local 740
89-07 Atlantic Avenue
Woodhaven, NY 11412
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Concrete Workers District Council No. 16

*Concrete Workers District Council No. 16
30-56 Whitestone Expressway Suite 320
Flushing, NY 11354
Business Manager: Angelo Angelone
P: 718-886-36432*

Cement & Concrete Workers Local 6A
30-56 Whitestone Expressway
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Business Manager: Anthony Amella Jr
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Cement & Concrete Workers Local 20
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LIC, NY 11106
Business Manager: John Peters
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Cement & Concrete Workers Local 18A
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Iron Workers District Council

****Iron Workers District Council***

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New York, NY 10022

Business Manager: James Mahoney

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IronWorkers Local 361

89-19 97th Avenue

Ozone Park, NY 11416

Business Manager: Matthew Chartrand

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email: mchartrand@local361.com

Metal Lathers Local 46

1332 Third Avenue

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Business Manager:

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email:

Ironworkers Local 40

451 Park Avenue South

New York, NY 10016

Business Manager: Bob Walsh

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Derrickmen & Riggers Local 197

35-53 24th Street

LIC, NY 11106

Business Manager: William Hayes

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Ornamental IronWorkers Local 580

501 West 42nd Street

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Business Manager: Pete Myers

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Mason Tenders District Council

****Mason Tenders District Council***

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New York NY 10018

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Construction & General Laborers Local 79

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New York, NY 10018

Business Manager: Michael Prohaska

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email: mpro@laborerslocal79.org

Asbestos Lead & Hazardous Waste Laborers Local 78

30 Cliff Street

New York, NY 10038

Business Manager: Pawell Gruchacz

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email: pgruchacz@local78.org

Painters District Council # 9

**Painters District Council No. 9*

45 West 14th Street

New York, NY 10011

Business Manager: Joseph Azzopardi

P: 212-255-2950

Drywall Tapers Local 1974

265 West 14th Street

New York, NY 10011

Business Manager: Sal Marsala

P: 212-242-8500

email:

Painters Structural Steel Local 806

40 West 27th Street

New York, NY 10001

Business Manager: Brian Casey

P: 212-447-1838/0149

email: bcasey6009@gmail.com

Glaziers Local 1087

45 West 14th Street

New York, NY 10011

Business Manager: Steve Birmingham

P: 212-924-5200

email: bermo1087@gmail.com

Metal Polishers Local 8A-28A

36-18 33rd Street 2nd Floor

LIC, NY 11106

Business Manager:

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email:

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

**PROJECT LABOR AGREEMENT
COVERING SPECIFIED
RENOVATION & REHABILITATION
OF CITY OWNED BUILDINGS AND STRUCTURES**

2020 – 2024

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

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2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

**PROJECT LABOR AGREEMENT COVERING SPECIFIED
RENOVATION & REHABILITATION OF NEW YORK CITY OWNED
BUILDINGS & STRUCTURES**

ARTICLE 1 - PREAMBLE

WHEREAS, the City of New York desires to provide for the cost efficient, safe, quality, and timely completion of certain rehabilitation and renovation work (“Program Work,” as defined in Article 3) in a manner designed to afford the lowest costs to the Agencies covered by this Agreement, and the public it represents, and the advancement of permissible statutory objectives;

WHEREAS, this Project Labor Agreement will foster the achievement of these goals, inter alia, by:

(1) providing a mechanism for responding to the unique construction needs associated with this Program Work and achieving the most cost-effective means of construction, including direct labor cost savings, by the Building and Construction Trades Council of Greater New York and Vicinity and the signatory Local Unions and their members waiving various shift and other hourly premiums and other work and pay practices which would otherwise apply to Program Work;

(2) expediting the construction process and otherwise minimizing the disruption to the covered Agencies’ ongoing operations at the facilities that are the subject of the Agreement;

(3) avoiding the costly delays of potential strikes, slowdowns, walkouts, picketing and other disruptions arising from work disputes, reducing jobsite friction on common situs worksites, and promoting labor harmony and peace for the duration of the Program Work;

(4) standardizing the terms and conditions governing the employment of labor on Program Work;

(5) permitting wide flexibility in work scheduling and shift hours and times to allow maximum work to be done during off hours yet at affordable pay rates;

(6) permitting adjustments to work rules and staffing requirements from those which otherwise might obtain;

(7) providing comprehensive and standardized mechanisms for the settlement of work disputes, including those relating to jurisdiction;

(8) fostering increased participation by Minority and Women-owned Business Enterprises (“MWBES”);

(9) encouraging the development of pathways to construction careers;

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

- (10) ensuring a reliable source of skilled and experienced labor; and
- (11) securing applicable New York State Labor Law exemptions.

WHEREAS, the Building and Construction Trades Council of Greater New York and Vicinity, its participating affiliated Local Unions and their members, desire to assist the City in meeting these operational needs and objectives as well as to provide for stability, security and work opportunities which are afforded by this Project Labor Agreement; and

WHEREAS, the Parties desire to maximize Program Work safety conditions for both workers and the community in the project area.

NOW, THEREFORE, the Parties enter into this Agreement:

SECTION 1. PARTIES TO THE AGREEMENT

This is a Project Labor Agreement (“Agreement”) entered into by the City of New York (“City”), on behalf of itself and the Agencies covered herein, including in their capacity as construction manager of covered projects and/or on behalf of any third party construction manager which may be utilized, and the Building and Construction Trades Council of Greater New York and Vicinity (“Council” or “BCTC”) (on behalf of itself) and the signatory affiliated Local Unions (“Unions” or “Local Unions”). The Council and each signatory Local Union hereby warrant and represents that it has been duly authorized to enter into this Agreement.

ARTICLE 2 - GENERAL CONDITIONS

SECTION 1. DEFINITIONS

A. The term “Agency” means the following New York City agencies: the Department for the Aging (“DFTA”), Administration for Children’s Services (“ACS”), Department of Citywide Administrative Services (“DCAS”), Department of Correction (“DOC”), Department of Design and Construction (“DDC”), Fire Department (“FDNY”), Department of Homeless Services (“DHS”), Human Resources Administration (“HRA”), Department of Health and Mental Hygiene (“DOHMH”), Department of Parks and Recreation (“DPR”), Police Department (“NYPD”),

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

Department of Sanitation (“DSNY”); Department of Transportation (“DOT”), Department of Buildings (“DOB”); with respect to Program Work as defined in Article 3, the New York City Agency that awards a particular contract subject to this Agreement may be referred to hereafter as the “Agency”;

B. The term “Agreement” means this project labor agreement (“PLA”), the applicable Schedule “A” Collective Bargaining Agreements (each a “CBA”) identified in Schedule “A”, and each Exhibit hereto;

C. The term “BCTC” refers to the Building and Construction Trades Council of Greater New York and Vicinity. The terms “BCTC” and “Council” are used interchangeably;

D. The term “Contractor(s)” shall include any Construction Manager, General Contractor and all other contractors, and subcontractors of all tiers engaged in Program Work within the scope of this Agreement as defined in Article 3. When an Agency acts as Construction Manager, unless otherwise provided, it has the rights and obligations of a “Construction Manager” in addition to the rights and obligations of an Agency;

E. The term “Core Employee” means an employee that has been on a contractor’s payroll consistent with Article 4, Section 2(B) and (C);

F. The term “Minor Repair” means routine repair, service, or maintenance that is recurrent, day to day, periodic scheduled or routine work required to preserve or restore a building, facility or system to working order;

G. The term “HireNYC Construction Careers” refers to the PLA initiative to advance career opportunities for Program Hires;

H. The term “Program Work” is the work covered by this Agreement as defined in Article 3;

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

I. The term “Program Hire” means an individual that resides in a zip code where at least 15% of the individuals residing in such zip code are below the federal poverty rate and residents of NYCHA housing regardless of zip codes; and

J. The term “Union(s)” or “Local Union(s)” refers to the various participating unions affiliated with the BCTC, singularly and collectively.

SECTION 2. CONDITIONS FOR AGREEMENT TO BECOME EFFECTIVE

This Agreement shall not become effective unless each of the following conditions are met: the Agreement is executed by (1) the Council, on behalf of itself, (2) the participating affiliated Local Unions; and (3) the mayor of the City of New York or their designee.

SECTION 3. ENTITIES BOUND & ADMINISTRATION OF AGREEMENT

This Agreement shall be binding on all participating Unions and their affiliates, the Construction Manager (in its capacity as such) and all Contractors of all tiers performing Program Work, as defined in Article 3. The Contractors shall include in any subcontract that they let for performance during the term of this Agreement a requirement that their subcontractors, of all tiers, become signatory and bound by this Agreement with respect to that subcontracted work falling within the scope of Article 3 and all Contractors (including subcontractors) performing Program Work shall be required to sign a “Letter of Assent” in the form annexed hereto as Exhibit “A”. This Agreement shall be administered by the applicable Agency or a Construction Manager or such other designee as may be named by the Agency or Construction Manager, on behalf of all Contractors.

SECTION 4. SUPREMACY CLAUSE

This Agreement, together with the local Collective Bargaining Agreements (each a “CBA”) appended hereto as Schedule “A”, represents the complete understanding of all signatories and supersedes any national agreement, local agreement or other CBA of any type which would otherwise apply to this Program Work, in whole or in part, except for Program Work which falls

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

within the jurisdiction of the Operating Engineers Locals 14 and 15. If Program Work falling within the jurisdiction of Operating Engineers Locals 14 and 15 is accepted by and performed by said locals, only then will such work be performed under the terms and conditions set out in the Schedule “A” agreements of Operating Engineers Locals 14 and 15. The CBAs of the affiliated local unions that cover the particular type of construction work to be performed by the contractor, and as set forth in the Schedule “A” list of agreements, shall be deemed the Schedule “A” Collective Bargaining Agreements (“Schedule “A” CBA”) under this Agreement. Where association and independent CBAs for a particular type of construction work are both set forth in Schedule “A”, association members shall treat the applicable association agreement as the Schedule “A” CBA and independent contractors shall treat the applicable independent agreement as the Schedule “A” CBA. Subject to the foregoing, where a subject covered by the provisions of this project labor agreement is also covered by a Schedule “A” CBA, the provisions of this project labor agreement shall prevail. It is further understood that no Contractor shall be required to sign any other agreement as a condition of performing Program Work. No practice, understanding or agreement between a Contractor and a Local Union which is not set forth in this Agreement shall be binding with respect to Program Work unless endorsed in writing by the Construction Manager or such other designee as may be designated by the Agency. Nothing in this Agreement requires employees to join a union or pay dues or fees to a union as a condition of working on the covered project. This Agreement is not, however, intended to supersede independent requirements in applicable local union agreements as to contractors that are otherwise signatory to those agreements and as to employees of such employers performing covered work.

SECTION 5. LIABILITY

The liability of any Contractor and the liability of any Union under this Agreement shall be several and not joint. The Construction Manager and any Contractor shall not be liable for any

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

violations of this Agreement by any other Contractor; and the Council and Local Unions shall not be liable for any violations of this Agreement by any other Union.

SECTION 6. THE AGENCY

The Agency (or Construction Manager where applicable) shall require in its bid specifications for all Program Work within the scope of Article 3 that all successful bidders, and their subcontractors of all tiers, become bound by, and signatory to, this Agreement. The Agency (or Construction Manager) shall not be liable for any violation of this Agreement by any Contractor. It is understood that nothing in this Agreement shall be construed as limiting the sole discretion of the Agency or Construction Manager in determining which Contractors shall be awarded contracts for Program Work. It is further understood that the Agency or Construction Manager has sole discretion at any time to terminate, delay or suspend the Program Work, in whole or part, on any project.

SECTION 7. AVAILABILITY AND APPLICABILITY TO ALL SUCCESSFUL BIDDERS

The Unions agree that this Agreement will be made available to, and will fully apply to, any successful bidder for (or subcontractor of) Program Work who becomes signatory thereto, without regard to whether that successful bidder (or subcontractor) performs work at other sites on either a union or non-union basis and without regard to whether employees of such successful bidder (or subcontractor) are, or are not, members of any unions. This Agreement shall not apply to the work of any Contractor which is performed at any location other than the site of Program Work.

SECTION 8. SUBCONTRACTING

Contractors will subcontract Program Work only to a person, firm or corporation who is or agrees to become party to this Agreement.

ARTICLE 3 - SCOPE OF THE AGREEMENT

SECTION 1. WORK COVERED

A. Program Work shall be limited to designated rehabilitation and renovation construction contracts bid and let by an Agency (or its Construction Manager where applicable) after the effective date of this Agreement with respect to rehabilitation and renovation work performed for an Agency on City-owned property under contracts advertised for public solicitation prior to December 31, 2024. Subject to the foregoing, and the exclusions below, such Program Work shall mean any and all contracts that predominantly involve the renovation, alteration, repair, rehabilitation or expansion of an existing City-owned building or structure within the five boroughs of New York City. Examples of Program Work include, but are not limited to, the renovation, repair, alteration and rehabilitation of an existing temporary or permanent structure, or an expansion of above ground structures located in the City on a City-owned building. Program Work shall also include job order contracts (“JOCS”), demolition work, painting services. Low voltage work, site work, elevator work, mold, asbestos and lead abatement, carpentry services, and carpet removal and installation shall be included as Program Work only when incidental to such building renovation and/or rehabilitation of City-owned buildings or structures and included in a contract that predominantly involves such renovation and/or rehabilitation.

B. It is understood that, except where the City specifically applies this Agreement to such work in its bid documents, Program Work does not include, and this Agreement shall not apply to, any other work, including:

1. Contracts that are let under a different project labor agreement with one of the defined City Agencies, and/or other Agencies and Authorities that have entered separate PLAs, such as DEP, NYCHA, H+H and SCA;

2. Contracts let and work performed in connection with projects carried over,

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recycled from, or performed under bids or rebids relating to work that were bid prior to the effective date of this Agreement or after December 31, 2024;

3. Contracts procured on an emergency basis;
4. Prime contracts that do not exceed \$3,000,000;
5. Contracts for work on streets and bridges and for the closing or environmental remediation of landfills;
6. Contracts with not-for-profit corporations where the City is not awarding or performing the work performed for that entity;
7. Contracts with governmental entities where the City is not awarding or performing the work performed for that entity;
8. Contracts with electric utilities, gas utilities, telephone companies, and railroads, except that it is understood and agreed that these entities may only install their work to a demarcation point, *e.g.*, a telephone closet or utility vault, the location of which is determined prior to construction and employees of such entities shall not be used to replace employees performing Program Work pursuant to this Agreement;
9. Contracts for installation of information technology that are not otherwise Program Work;
10. Task Orders or Work Orders issued under JOCS or Requirements Contracts that do not exceed \$250,000, and JOCS or Requirements Contracts where the monetary value of such contracts predominantly involves such Task Orders or Work Orders;
11. Contracts that predominantly involve Minor Repair work, as defined in Article 2, Section 1(F) above. Such work is to be paid under the applicable prevailing wage law for service or maintenance work;
12. Up to five percent (5%) of work performed by certified MWBE

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subcontractors on prime contracts that are valued at \$25,000,000 or more and for which participation goals are set forth in the contract and where such MWBE subcontractor is not signatory to any Schedule “A” agreement (“Exempt Work”). Exempt Work shall be no more than \$500,000 or 15% (whichever is greater) of the value of the subcontracts for work in any particular union’s jurisdiction under any prime contract; and

13. On-site work performed on purchased equipment, which is required by the manufacturer to be performed by its staff or by its selected contractors as a condition of the continued effectiveness of the equipment warranty.

SECTION 2. TIME LIMITATIONS

In addition to falling within the scope of Article 3, Section 1, to be covered by this Agreement, Program Work must be (1) advertised and let for bid after the effective date of this Agreement, and (2) let for bid prior to December 31, 2024, the expiration date of this Agreement. It is understood that this Agreement, together with all of its provisions, shall remain in effect for all such Program Work until completion, even if not completed by the expiration date of the Agreement. If Program Work otherwise falling within the scope of Article 3, Section 1 is not let for bid by the expiration date of this Agreement, this Agreement may be extended to that work by mutual agreement of the parties.

SECTION 3. EXCLUDED EMPLOYEES

The following persons are not subject to the provisions of this Agreement, even though performing Program Work:

A. Superintendents, supervisors (except field surveyors on construction contracts, general and forepersons specifically covered by a craft’s Schedule “A” agreement are included), engineers, professional engineers and/or licensed architects engaged in inspection and testing, quality control/assurance personnel, timekeepers, mail carriers, clerks, office workers, messengers,

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guards, technicians, non-manual employees, and all professional, engineering, administrative and management persons;

B. Employees of the Agency, New York City, or any other municipal or State agency, authority or entity, or employees of any other public employer, even though working on the project site while covered Program Work is underway;

C. Employees and entities engaged in off-site manufacture, modifications, repair, maintenance, assembly, painting, handling or fabrication of project components, materials, equipment or machinery, or involved in deliveries to and from the Program site, except to the extent they are lawfully included in the bargaining unit of a Schedule "A" agreement;

D. Employees of the Construction Manager (except that in the event the Agency engages a Contractor to serve as Construction Manager, then those employees of the Construction Manager performing manual, on site construction labor will be covered by this Agreement);

E. Employees engaged in on-site equipment warranty work including installation, repair or maintenance unless employees are already working on the site and are certified to perform warranty work;

F. Employees engaged in geophysical testing other than boring for core samples;

G. Employees engaged in laboratory, specialty testing, or inspections, pursuant to a professional services agreement between the Agency, or any of the Agency's other professional consultants, and such laboratory, testing, inspection or surveying firms;

H. Employees engaged in on-site maintenance of installed equipment or systems which maintenance is awarded as part of a contract that includes Program Work, but which maintenance occurs after installation of such equipment or system and is not directly related to construction services; and

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I. Employees who perform work classified as Minor Repairs, and routine service and/or maintenance work.

SECTION 4. NON-APPLICATION TO CERTAIN ENTITIES

This Agreement shall not apply to those parents, affiliates, subsidiaries, or other joint or sole ventures of any Contractor which do not perform Program Work. It is agreed that this Agreement does not have the effect of creating any joint employment, single employer or alter ego status among the Agency (including in its capacity as Construction Manager) or any Contractor. The Agreement shall further not apply to any New York City or other municipal or State agency, authority, or entity other than a listed Agency and nothing contained herein shall be construed to prohibit or restrict the Agency or its employees, or any State, New York City or other municipal or State authority, agency or entity and its employees, from performing on or off-site work related to Program Work.

As the contracts involving Program Work are completed and accepted, the Agreement shall not have further force or effect on such items or areas except where inspections, additions, repairs, modifications, check-out and/or warranty work are assigned in writing (copy to Local Union involved) by the Agency (or Construction Manager) for performance under the terms of this Agreement.

ARTICLE 4 - UNION RECOGNITION AND EMPLOYMENT

SECTION 1. PRE-HIRE RECOGNITION

The Contractors recognize the signatory Unions as the sole and exclusive bargaining representatives of all employees who are performing on-site Program Work, with respect to that work.

SECTION 2. UNION REFERRAL

A. The Contractors agree to request, employ and hire craft employees, including

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Program Hires as defined in Article 2, Section 1(I), for Program Work covered by this Agreement through the job referral systems and hiring halls established in the Local Unions' area CBAs set forth in Schedule "A". Notwithstanding this, Contractors shall have sole right to determine the competency of all referrals; to determine the number of employees required; to select employees for layoff (subject to Article 5, Section 3); and the sole right to reject any applicant referred by a Local Union, subject to the show-up payments. In the event that a Local Union does not fill any request for qualified employees within a 48-hour period after such requisition is made by a Contractor (Saturdays, Sundays and holidays excepted), a Contractor may employ qualified applicants from any other available source. In the event that the Local Union does not have a job referral system, the Contractor shall give the Local Union first preference to refer applicants, subject to the other provisions of this Article. The Contractor shall notify the Local Union of craft employees hired for Program Work within its jurisdiction from any source other than referral by the Union. Any employee hired by a Contractor because a Local Union does not fill a request for qualified employees within a 48 hour period (Saturdays, Sundays and holidays excepted) are not covered by this Agreement for purposes of Article 11, Section 2, unless they are or become a member or agency shop fee payor of an affiliated Union.

B. A Contractor may request by name, and the Local will honor, referral of persons who have applied to the Local for Program Work ("Core Employees") and who meet the following qualifications:

- (1) possess any license required by New York State law for the Program Work to be performed;
- (2) have worked a total of at least 1000 hours in the Construction field during the prior 3 years; and
- (3) were on the Contractor's active payroll for at least 60 out of the 180 calendar days prior to the contract award.

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No more than twelve per centum (12%) of the employees covered by this Agreement, per Contractor by craft, shall be hired through the special provisions above. Under this provision, name referrals begin with the eighth employee needed and continue on that same basis.

C. Notwithstanding Section 2(B), above, certified MWBE contractors for which participation goals are set forth in New York City Administrative Code §6-129, that are not signatory to any Schedule "A" CBAs, with subcontracts valued at or under two-million dollars (\$2,000,000), may request by name, and the Local will honor, referral of the second (2nd), fourth (4th), sixth (6th), and eighth (8th) Core Employee, who have applied to the Local for Program Work and who meet the following qualifications:

- (1) possess any license required by New York State law for the Program Work to be performed;
- (2) have worked a total of at least 1000 hours in the Construction field during the prior 3 years; and
- (3) were on the Contractor's active payroll for at least 60 out of the 365 calendar days prior to the contract award.

D. Where a certified MWBE Contractor voluntarily enters into a CBA with a BCTC Union, the employees of such Contractor at the time the CBA is executed shall be allowed to join the Union for the applicable trade subject to satisfying the Union's basic standards of proficiency for admission.

SECTION 3. NON-DISCRIMINATION IN REFERRALS

The Council represents that each Local Union hiring hall and referral system will be operated in a non-discriminatory manner and in full compliance with all applicable federal, state and local laws and regulations which require equal employment opportunities. Referrals shall not be affected in any way by the rules, regulations, bylaws, constitutional provisions or any other aspects or obligations of union membership, policies or requirements and shall be subject to such other conditions as are established in this Article. No employment applicant shall be discriminated

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against by any referral system or hiring hall because of the applicant's union membership, or lack thereof.

SECTION 4. MINORITY, FEMALE, LOCAL AND SECTION 3 REFERRALS

In the event a Local Union either fails, or is unable to refer qualified minority or female applicants in percentages equaling the workforce participation goals adopted by the City and set forth in the Agency's (or, if applicable, Construction Manager's) bid specifications, within 48 hours of the request for same, the Contractor may employ qualified minority or female applicants from any other available source.

The Local Unions agree to prioritize the referral of Program Hires in accordance with Article 13 and to the extent consistent with the law, rules applicable to the union referral systems and joint apprentice programs. Those unions that do not currently provide for zip code preferences in their referral systems will undertake to implement such preferences consistent with this Agreement and their governing documents. Please see Exhibit "C" for a non-exhaustive list of eligible zip codes. Employees from these zip codes that are already on a contractor's workforce, including Core Employees, and referral of apprentices, in accordance with Article 13, Section 1(A) below, shall count towards the referral goals of this Section.

For any Program Work that may become subject to requirements under Section 3 of the Housing and Urban Development Act of 1968, as amended by the Housing and Community Development Act of 1992, and any rules, including new or revised rules, that may be published thereunder, the Local Unions acknowledge the Section 3 obligations of the Construction Manager or Contractor, as applicable, and agree to the zip code and NYCHA preferences described above to help implement this Article in a manner that would allow the Construction Manager or Contractor to meet its Section 3 obligations to the greatest extent feasible, and to post any required notices in the manner required by Section 3. The parties also acknowledge that the Construction Manager

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and Contractor may also fulfill its Section 3 requirements on Program Work by promoting opportunities for excluded employees, as defined by Article 3, Section 3 of this Agreement, on Program Work and, to the extent permitted by Section 3, by promoting opportunities for craft and other employees on non-Program Work.

SECTION 5. CROSS AND QUALIFIED REFERRALS

The Local Unions shall not knowingly refer to a Contractor an employee then employed by another Contractor working under this Agreement. The Local Unions will exert their utmost efforts to recruit sufficient numbers of skilled and qualified crafts employees to fulfill the requirements of the Contractor.

SECTION 6. CRAFT FOREPERSONS AND GENERAL FOREPERSONS

The selection of craft forepersons and/or general forepersons and the number of forepersons required shall be solely the responsibility of the Contractor except where otherwise provided by specific provisions of an applicable Schedule "A" CBA, and provided that all craft forepersons shall be experienced and qualified journeypersons in their trade as determined by the appropriate Local Union. All forepersons shall take orders exclusively from the designated Contractor representatives. Craft forepersons shall be designated as working forepersons at the request of the Contractor, except when an existing local CBA prohibits a foreperson from working when the craft persons, they are leading exceed a specified number.

SECTION 7. ON CALL REPAIR REFERRALS

A. When an Agency awards a contract under this Agreement that requires the Contractor to have employees available on short notice to make time-sensitive repairs with such contract requiring the Contractor to respond within as little as two hours from the time the Contractor is contacted by the Agency ("On Call, Repair Contract"), the Contractor will, within ten (10) days of being awarded an On Call, Repair Contract subject to this Agreement, notify the

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appropriate affiliated Union that would perform the work for a contractor that the Contractor has been awarded such a contract and immediately enter into good faith negotiations with such relevant affiliated Union to establish a procedure to receive time sensitive referrals from such affiliated Union(s).

B. In the event the Contractor and the relevant affiliated Union(s) are unable to negotiate a specific, mutually agreeable procedure for on call repair referral procedure within twenty (20) days of commencement of negotiations or prior to commencement of performance of the contract, whichever is earlier, the Contractor and the relevant affiliated Unions will follow the following procedure:

1. Upon notification by a Contractor that it has been awarded an On Call, Repair Contract pursuant to paragraph A above, each relevant affiliate Union shall provide the Contractor with the name and twenty-four (24) hour contact information of an On Call, Repair Contract contact person for urgent on call repair referrals.

2. The relevant affiliated Unions shall prepare a list of individuals eligible and prepared for referral on an immediate basis to respond to the on call repair contractor, which may include the affiliated Unions' service, repair and maintenance division workers where appropriate for repairs that can be made within 24 to 48 hours and paid at the appropriate prevailing wage rates for service and repair or maintenance work. Such list shall be provided to and in the possession of the designated-on call repair contact person for the affiliated Union and available for immediate reference.

3. Individuals on such list must be able to comply with the Contractor's response time pursuant to contract requirements.

4. The Union's On Call, Repair Contract contact person shall respond to a contractor's request for referrals within a reasonable time of the request so that compliance with

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the contract shall be possible.

C. In the event that the Contractor makes a request for an on call referral that is compliant with this procedure and a Union is not able to respond to the request, that Union will be deemed to have waived the forty-eight (48) hour referral rule contained in Section 2 above and the Contractor may employ qualified applicants from any other available source that can meet contract requirements for that time-sensitive on call repair work only; provided, however, that any work related to the repair work that is not of a time sensitive nature under the contract shall comply with Section 2. If a Union fails to timely refer a worker and the Contractor employs other workers, the Contractor will e-mail the Agency within 72 hours and the Agency will forward that e-mail to the designated Labor Management Committee contacts.

ARTICLE 5 - UNION REPRESENTATION

SECTION 1. LOCAL UNION REPRESENTATIVE

Each Local Union representing on-site employees shall be entitled to designate in writing (copy to Contractor involved and Construction Manager) one representative, and/or the Business Manager, who shall be afforded access to the Program Worksite during such time as bargaining unit work is occurring and subject to otherwise applicable policies pertaining to visitors to the site.

SECTION 2. STEWARDS

A. Each affiliated Union shall have the sole discretion to designate any journey person as a Steward and an alternate Steward. The Union shall notify the Owner and/or Construction Manager as well as the Contractor of the identity of the designated Steward (and alternate) prior to the assumption of such duties. Stewards shall not exercise supervisory functions and will receive the regular rate of pay for their craft classifications. All Stewards shall be working Stewards.

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B. In addition to their work as an employee, the Steward shall have the right to receive complaints or grievances and to discuss and assist in their adjustment with the Contractor's appropriate supervisor. Each Steward shall be concerned with the employees of the Steward's trade and, if applicable, subcontractors of their Contractor, but not with the employees of any other trade Contractor. No Contractor shall discriminate against the Steward in the proper performance of Union duties.

C. The Stewards shall not have the right to determine when overtime shall be worked, or who shall work overtime except pursuant to a Schedule "A" CBA provision providing procedures for the equitable distribution of overtime.

SECTION 3. LAYOFF OF A STEWARD

Contractors agree to notify the appropriate Union 24 hours prior to the layoff of a Steward, except in cases of discipline or discharge for just cause. If a Steward is protected against layoff by a Schedule "A" provision, such provision shall be recognized to the extent the Steward possesses the necessary qualifications to perform the work required, except in cases of discipline or discharge for just cause. In any case in which a Steward is discharged or disciplined for just cause, the Local Union involved shall be notified immediately by the Contractor.

ARTICLE 6 - MANAGEMENT'S RIGHTS

SECTION 1. RESERVATION OF RIGHTS

Except as expressly limited by a specific provision of this Agreement, Contractors retain full and exclusive authority for the management of their operations including, but not limited to, the right to: direct the work force, including determination as to the number of employees to be hired and the qualifications therefore; the promotion, transfer, layoff of its employees; require compliance with the directives of the Agency including standard restrictions related to security and access to the site that are equally applicable to Agency employees, guests, or vendors; or the discipline or discharge for just cause of its employees; assign and schedule work; promulgate

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reasonable Program Work rules that are not inconsistent with this Agreement or rules common in the industry and are reasonably related to the nature of work; and, the requirement, timing and number of employees to be utilized for overtime work. No rules, customs, or practices which limit or restrict productivity or efficiency of the individual, as determined by the Contractor, Agency and/or Construction Manager and/or joint working efforts with other employees shall be permitted or observed.

SECTION 2. MATERIALS, METHODS & EQUIPMENT

There shall be no limitation or restriction upon the Contractor's choice of materials, techniques, methods, technology or design, or, regardless of source or location, upon the use and installation of equipment, machinery, package units, pre-cast, pre-fabricated, pre-finished, or pre-assembled materials or products, tools, or other labor-saving devices. Contractors may, without restriction, install or use materials, supplies or equipment regardless of their source; provided, however, that where there is a Schedule "A" that includes a lawful union standards and practices clauses, then such clause as set forth in Schedule "A" agreements will be complied with, unless there is a lawful Agency specification (or specification issued by a Construction Manager which would be lawful if issued by the Agency directly) that would specifically limit or restrict the Contractor's choice of materials, techniques, methods, technology or design, or, regardless of source or location, upon the use and installation of equipment, machinery, package units, pre-cast, pre-fabricated, pre-finished, or pre-assembled materials or products, tools, or other labor-saving devices, and which would prevent compliance with such Schedule "A" clause. The on-site installation or application of such items shall be performed by the craft having jurisdiction over such work; provided, however, it is recognized that other personnel having special qualifications may participate, in a supervisory capacity, in the installation, check-off or testing of specialized or

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unusual equipment or facilities as designated by the Contractor. There shall be no restrictions as to work which is performed off-site for Program Work.

ARTICLE 7 - WORK STOPPAGES AND LOCKOUTS

SECTION 1. NO STRIKES-NO LOCK OUT

There shall be no strikes, sympathy strikes, picketing, work stoppages, slowdowns, hand billing, demonstrations or other similar disruptive activity at the Program Work site for any reason by any Union or employee against any Contractor or employer. There shall be no other Union or concerted or employee activity which disrupts or interferes with the operation of the Program Work or the objectives of the Agency at any Program Work site. In addition, failure of any Union or employee to cross any picket line established by any Union, signatory or non-signatory to this Agreement, or the picket or demonstration line of any other organization, at or in proximity to a Program Work site where the failure to cross disrupts or interferes with the operation of Program Work is a violation of this Article. Should any employees breach this provision, the Unions will use their best efforts to try to immediately end that breach and return all employees to work. There shall be no lockout at a Program Work site by any signatory Contractor, Agency or Construction Manager.

SECTION 2. DISCHARGE FOR VIOLATION

A Contractor may discharge any employee violating Section 1, above, and any such employee will not be eligible thereafter for referral under this Agreement for a period of 100 days.

SECTION 3. NOTIFICATION

If a Contractor contends that any Union has violated this Article, it will notify the Local Union involved advising of such fact, with copies of the notification to the Council. The Local Union shall instruct and order, the Council shall request, and each shall otherwise use their best efforts to cause, the employees (and where necessary the Council shall use its best efforts to cause the Local Union), to immediately cease and desist from any violation of this Article. If the Council

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complies with these obligations, it shall not be liable for the unauthorized acts of a Local Union or its members. Similarly, a Local Union and its members will not be liable for any unauthorized acts of the Council. Failure of a Contractor or the Construction Manager to give any notification set forth in this Article shall not excuse any violation of Section 1 of this Article.

SECTION 4. EXPEDITED ARBITRATION

Any Contractor or Union alleging a violation of Section 1 of this Article may utilize the expedited procedure set forth below (in lieu of, or in addition to, any actions at law or equity that may be brought).

A. A party invoking this procedure shall notify J.J. Pierson or Richard Adelman; who shall alternate (beginning with Arbitrator J.J. Pierson) as Arbitrator under this expedited arbitration procedure. If the Arbitrator next on the list is not available to hear the matter within 24 hours of notice, the next Arbitrator on the list shall be called. Copies of such notification will be simultaneously sent to the alleged violator and Council.

B. The Arbitrator shall thereupon, after notice as to time and place to the Contractor, the Local Union involved, the Council and the Construction Manager, hold a hearing within 48 hours of receipt of the notice invoking the procedure if it is contended that the violation still exists. The hearing will not, however, be scheduled for less than 24 hours after the notice required by Section 3, above.

C. All notices pursuant to this Article may be provided by telephone, telegraph, hand delivery, or fax, confirmed by overnight delivery, to the Arbitrator, Contractor, Construction Manager and Local Union involved. The hearing may be held on any day including Saturdays or Sundays. The hearing shall be completed in one session, which shall not exceed 8 hours duration (no more than 4 hours being allowed to either side to present their case and conduct their cross examination) unless otherwise agreed. A failure of any Union or Contractor to attend the hearing

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shall not delay the hearing of evidence by those present or the issuance of an award by the Arbitrator.

D. The sole issue at the hearing shall be whether a violation of Section 1, above, occurred. If a violation is found to have occurred, the Arbitrator shall issue a Cease and Desist Award restraining such violation and serve copies on the Contractor and Union involved. The Arbitrator shall have no authority to consider any matter in justification, explanation or mitigation of such violation or to award damages (any damages issue is reserved solely for court proceedings, if any). The Award shall be issued in writing within 3 hours after the close of the hearing and may be issued without an Opinion. If any involved party desires an Opinion, one shall be issued within 15 calendar days, but its issuance shall not delay compliance with, or enforcement of, the Award.

E. The Agency and Construction Manager (or such other designee of the Agency) may participate in full in all proceedings under this Article.

F. An Award issued under this procedure may be enforced by any court of competent jurisdiction upon the filing of this Agreement together with the Award. Notice of the filing of such enforcement proceedings shall be given to the Union or Contractor involved, and the Construction Manager.

G. Any rights created by statute or law governing arbitration proceedings which are inconsistent with the procedure set forth in this Article, or which interfere with compliance thereto, are hereby waived by the Contractors and Unions to whom they accrue.

H. The fees and expenses of the Arbitrator shall be equally divided between the involved Contractor and Union.

SECTION 5. ARBITRATION OF DISCHARGES FOR VIOLATION

Procedures contained in Article 9 shall not be applicable to any alleged violation of this Article, with the single exception that an employee discharged for violation of Section 1, above,

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may have recourse to the procedures of Article 9 to determine only if the employee did, in fact, violate the provisions of Section 1 of this Article; but not for the purpose of modifying the discipline imposed where a violation is found to have occurred.

ARTICLE 8 - LABOR MANAGEMENT COMMITTEE

SECTION 1. SUBJECTS

The Program Labor Management Committee (the “LMC”) will meet on a regular basis to:

- 1) promote harmonious relations among the Contractors and Unions; 2) enhance safety awareness, cost effectiveness and productivity of construction operations; 3) protect the public interests; 4) discuss matters relating to staffing and scheduling with safety and productivity as considerations; and 5) review efforts to meet applicable participation goals for MWBEs and workforce participation goals for Program Hires, minority and female employees.

SECTION 2. COMPOSITION

The LMC shall be jointly chaired by a designee of the Agency and the President of the Council. It may include representatives of the Local Unions and Contractors involved in the issues being discussed. The parties shall mutually designate an MWBE representative to participate in appropriate Committee discussions. The Committee may conduct business through mutually agreed upon sub-committees.

ARTICLE 9 - GRIEVANCE & ARBITRATION PROCEDURE

SECTION 1. PROCEDURE FOR RESOLUTION OF GRIEVANCES

Any question, dispute or claim arising out of, or involving the interpretation or application of this Agreement (other than jurisdictional disputes or alleged violations of Article 7, Section 1) shall be considered a grievance and shall be resolved pursuant to the exclusive procedure of the steps described below, provided, in all cases, that the question, dispute or claim arose during the term of this Agreement. Grievances shall include the City contract number and the Program Work

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address; such information is posted at the work site if already commenced and is available in the City Record and Notice to Proceed for projects not already commenced.

Local Union grievances as to whether a scope of work is included or excluded from this Agreement shall be submitted to the LMC in the first instance rather than Step 1 below. To be timely, such notice must be given no later than five days prior to the bid opening date advertised in the City Record and bid documents for that contract, or any adjourned date publicly noticed if the grievance is challenging a determination by an Agency that the contract is not subject to this Agreement. Compliance with this limit shall operate as a statute of limitations and shall be a condition precedent to arbitration. For other grievances as to contractor and/or subcontractor scope of work issues, notice of such challenges shall be submitted to the LMC within 7 calendar days after the act, occurrence or event giving rise to the grievance. If the scope of work grievance is not resolved within 21 days of its submission to the LMC, then the grievance may proceed directly to Step 3 below.

Step 1:

(a) When any employee covered by this Agreement feels aggrieved by a claimed violation of this Agreement, the employee shall, through the Local Union business representative or job steward give notice of the claimed violation to the work site representative of the involved Contractor and the Construction Manager. To be timely, such notice of the grievance must be given within 7 calendar days after the act, occurrence or event giving rise to the grievance. The business representative of the Local Union or the job steward and the work site representative of the involved Contractor shall meet and endeavor to adjust the matter within 7 calendar days after timely notice has been given. If they fail to resolve the matter within the prescribed period, the grieving party, may, within 7 calendar days thereafter, pursue Step 2 of the grievance procedure by serving the involved Contractor with written copies of the grievance setting forth a description of the claimed

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violation, the date on which the grievance occurred, and the provisions of the Agreement alleged to have been violated. Grievances and disputes settled at Step 1 are non-precedential except as to the specific Local Union, employee and Contractor directly involved unless the settlement is accepted in writing by the Construction Manager (or designee) as creating a precedent.

(b) Should any signatory to this Agreement have a dispute (excepting jurisdictional disputes or alleged violations of Article 7, Section 1) with any other signatory to this Agreement and, if after conferring, a settlement is not reached within 7 calendar days, the dispute shall be reduced to writing and proceed to Step 2 in the same manner as outlined in subparagraph (a) for the adjustment of employee grievances.

Step 2:

A Step 2 grievance shall be filed with the Agency, the BCTC, the Contractor, and, if the grievance is against a subcontractor, the subcontractor. The Business Manager or designee of the involved Local Union, together with representatives of the involved Contractor and/or a contractor association representative where appropriate, Council, the Construction Manager (or designee), and, if the grievance is against a subcontractor, the subcontractor, shall meet in Step 2 within 7 calendar days of service of the written grievance to arrive at a satisfactory settlement. The BCTC shall schedule the Step 2 meeting.

Step 3:

(a) If the grievance shall have been submitted but not resolved in Step 2, any of the participating Step 2 entities may, within 21 calendar days after the initial Step 2 meeting, submit the grievance in writing (copies to other participants, including the Construction Manager or designee) to the BCTC. In the event the matter is not resolved at Step 2, either J.J. Pierson or Richard Adelman, who shall act, alternately (beginning with Arbitrator J.J. Pierson), as the Arbitrator under this procedure, shall be designated at the Step 2 hearing and the BCTC will notify

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the arbitrator of his designation. After such notification by the BCTC, the local demanding arbitration shall within a reasonable time request the arbitrator to schedule the matter for an arbitration hearing date. The Labor Arbitration Rules of the American Arbitration Association shall govern the conduct of the arbitration hearing, at which all Step 2 participants shall be parties. The decision of the Arbitrator shall be final and binding on the involved Contractor, Local Union and employees and the fees and expenses of such arbitrations shall be borne equally by the involved Contractor and Local Union.

(b) Failure of the grieving party to adhere to the time limits set forth in this Article shall render the grievance null and void. These time limits may be extended only by written consent of the Construction Manager (or designee), involved Contractor and involved Local Union at the particular step where the extension is agreed upon. The Arbitrator shall have authority to make decisions only on the issues presented to him and shall not have the authority to change, add to, delete or modify any provision of this Agreement.

SECTION 2. LIMITATION AS TO RETROACTIVITY

No arbitration decision or award, with the exception of those related to compliance with requirements to pay prevailing wages and supplements in accordance with federal or State law, may provide retroactivity of any kind exceeding 60 calendar days prior to the date of service of the written grievance on the Construction Manager and the involved Contractor or Local Union.

SECTION 3. PARTICIPATION BY AGENCY AND/OR CONSTRUCTION MANAGER

The Agency and Construction Manager (or such other designee of the Agency) shall be notified by the involved Contractor of all actions at Steps 2 and 3 and, at its election, may participate in full in all proceedings at these Steps, including Step 3 arbitration.

ARTICLE 10 - JURISDICTIONAL DISPUTES

SECTION 1. NO DISRUPTIONS

There will be no strikes, sympathy strikes, work stoppages, slowdowns, picketing or other disruptive activity of any kind arising out of any jurisdictional dispute. Pending the resolution of the dispute, the work shall continue uninterrupted and as assigned by the Contractor. No jurisdictional dispute shall excuse a violation of Article 7.

SECTION 2. ASSIGNMENT

All Program Work assignments shall be made by the Contractor to unions affiliated with the BCTC consistent with the New York Plan for the Settlement of Jurisdictional Disputes ("New York Plan") and its Greenbook decisions, if any. Where there are no applicable Greenbook decisions, assignments shall be made in accordance with the provisions of the New York Plan and local industry practice.

SECTION 3. NO INTERFERENCE WITH WORK

There shall be no interference or interruption of any kind with the Program Work while any jurisdictional dispute is being resolved. The work shall proceed as assigned by the Contractor until finally resolved under the applicable procedure of this Article. The award shall be confirmed in writing to the involved parties. There shall be no strike, work stoppage or interruption in protest of any such award.

ARTICLE 11 - WAGES AND BENEFITS

SECTION 1. CLASSIFICATION AND BASE HOURLY RATE

All employees covered by this Agreement shall be classified in accordance with the work performed and paid the hourly wage rates applicable for those classifications as required by the applicable prevailing wage laws.

SECTION 2. EMPLOYEE BENEFITS

A. The Contractors agree to pay on a timely basis contributions on behalf of all employees covered by this Agreement to those established jointly trustee employee benefit funds designated in the applicable CBA in Schedule "A" (in the appropriate Schedule "A" amounts), provided that such benefits are required to be paid on public works under any applicable prevailing wage law. Bona fide jointly trustee fringe benefit plans established or negotiated through collective bargaining during the life of this Agreement may be added if similarly required under applicable prevailing wage law. Contractors, not otherwise contractually bound to do so, shall not be required to contribute to benefits, trusts or plans of any kind which are not required by the prevailing wage law provided, however, that this provision does not relieve Contractors signatory to local collective bargaining agreement with any affiliated union from complying with the fringe benefit requirements for all funds contained in the CBA. Furthermore, employees that may remain unaffiliated with any local union at the completion of their employment under the terms of this Agreement may apply for any distributions to which they may be entitled from the funds in accordance with the applicable rules and governing documents of the unions and the employee benefit funds that they have participated in under the terms of this Agreement.

B. 1. Notwithstanding Section 2 (A) above, and subject to 2 (B)(2) below, Contractors who designate Core Employees pursuant to Article 4, Section 2 (B) and (C) that are not signatory to a Schedule "A" agreement and who maintain bona fide private benefit plans that satisfy the requirements of Section 220 of the New York State Labor Law, may satisfy the above benefit obligation with respect to those employees by providing those employees with coverage under their private benefit plans (to the extent consistent with Section 220). The total benefit payments to be made on behalf of each such employee must be equal to the total Section 220 supplement amount and any shortfall must be paid by cash supplement to the employee.

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2. A contractor that will satisfy its Section 220 obligations in accordance with subsection 2(B)(1) above shall make available to the Agency at the time of contract award a complete set of plan documents for each non-Schedule “A” benefit plan into which contributions will be made and/or coverage provided pursuant to the provisions of Section 2(B)(1) above. The Contractor shall also provide certification from a certified public accountant as to the annualized hourly value of such benefits consistent with the requirements of Section 220.

3. The City shall verify that the alternate benefit plan(s), together with any cash supplement to the employee, is compliant with Section 220 prior to awarding the Contractor a contract covered by this Agreement. In the event the Contractor’s alternate benefit plan(s), together with any cash supplement to the employee, is determined to be compliant with Section 220 and will be utilized by the Contractor on behalf of Article 4, Section 2(B) and (C) Core Employees, the Local Unions have no duty to enforce the Contractor’s obligations on the alternate benefit plan(s) as they are not party to the alternate plan(s) or privy to the terms and conditions of the plan obligations. In the event the City determines the alternate benefit plan(s), together with any cash supplement to the employee, is not compliant with Section 220, the Contractor may, upon executing a Letter of Assent, satisfy its obligations for all employees, including Core Employees, by contributing to the Schedule “A” benefit plans in accordance with the terms of the Schedule “A” agreements.

C. The Contractors agree to be bound by the written terms of the legally established jointly trustee Trust Agreements specifying the detailed basis on which payments are to be paid into, and benefits paid out of, such Trust Funds but only with regard to Program Work done under this Agreement and only for those employees to whom this Agreement requires such benefit payments.

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D. 1. To the extent consistent with New York City's Procurement Policy Board Rules with respect to prompt payment, as published at www.nyc.gov/ppb, §4-06(e), and in consideration of the unions' waiver of their rights to withhold labor from a contractor or subcontractor delinquent in the payment of fringe benefits contributions ("Delinquent Contractor"); the Agency agrees that where any such union and/or fringe benefit fund shall notify the Agency, the General Contractor, and the Delinquent Contractor in writing with back-up documentation that the Delinquent Contractor has failed to make fringe benefit contributions to it as provided herein and the Delinquent Contractor shall fail, within ten (10) calendar days after receipt of such notice, to furnish either proof of such payment or notice that the amount claimed by the union and/or fringe benefit fund is in dispute, the Agency shall withhold from amounts then or thereafter becoming due and payable to the General Contractor an amount equal to that portion of such payment due to the General Contractor that relates solely to the work performed by the Delinquent Contractor which the union or fringe benefit fund claims to be due it, and shall remit the amount when and so withheld to the fringe benefit fund and deduct such payment from the amounts then otherwise due and payable to the General Contractor, which payment shall, as between the General Contractor and the Agency, be deemed a payment by the Agency to the General Contractor; provided however, that in any month, such withholding shall not exceed the amount contained in the General Contractor's monthly invoice for work performed by the Delinquent Contractor. The union or its employee benefit funds shall include in its notification of delinquent payment of fringe benefits only such amount it asserts the Delinquent Contractor failed to pay on the specific project against which the claim is made and the union or its employee benefit funds may not include in such notification any amount such Delinquent Contractor may have failed to pay on any other City or non-City project.

2. In addition, where a union or employee benefit fund gives notice to the City that a Contractor is Delinquent as defined in subsection 2(D)(1) above and the City determines that the

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notice includes appropriate back-up documentation that the Contractor is delinquent, the City will promptly, but not later than twenty (20) days after receipt of the notice, provide a copy of said notice to City Agencies. In the event the City determines there is insufficient back-up documentation, it will notify the appropriate union and/or fringe benefit fund promptly, but not later than twenty (20) days after receipt of the Delinquency Notice, and shall include notice of what additional documentation is requested. Any determination by the City that there is insufficient back-up must be reasonable. This provision is intended to enhance compliance with the prevailing wage law and this Agreement with respect to the payment of fringe benefits and is not intended as a substitute for the resolution of a disputed claim pursuant to any applicable law or agreement.

The City and the relevant Agency(s) will thereafter require the Delinquent Contractor to provide cancelled checks or other equivalent proof of payment of benefit contributions that have come due, to be submitted with certified payroll reports for all Program Work covered by this Agreement on which the Delinquent Contractor is engaged, for at least a one-year period or such earlier period if the Contractor is ultimately determined not to be a Delinquent Contractor. Such proof of payment when required is a condition of payment of the Delinquent Contractor's invoices by any entity, including, but not limited to, the City, the relevant Agency(s), Construction Manager, General Contractor, the prime or higher level subcontractor, as is appropriate under the Delinquent Contractor's engagement. The union and the funds shall upon request receive copies of the certified payrolls, cancelled checks, or other proof of payment from the City and/or the relevant Agency(s).

E. In the event the General Contractor or Delinquent Contractor shall notify the Agency as above provided that the claim of the union or fringe benefit fund is in dispute, the Agency shall withhold from amounts then or thereafter becoming due and payable to the General Contractor an amount equal to that portion of such payment due to the General Contractor that relates solely to the work performed by the Delinquent Contractor that the union and/or fringe benefit fund claims

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to be due it, pending resolution of the dispute pursuant to the union's Schedule "A" agreement, and the amount shall be paid to the party or parties ultimately determined to be entitled thereto, or held until the Delinquent Contractor and union or employee benefit fund shall otherwise agree as to the disposition thereof; provided however, that such withholding shall not exceed the amount contained in the General Contractor's monthly invoice for work performed by the Delinquent Contractor. In the event the Agency shall be required to withhold amounts from a General Contractor for the benefit of more than one fringe benefit fund, the amounts so withheld in the manner and amount prescribed above shall be applied to or for such fund in the order in which the written notices of nonpayment have been received by the Agency, and if more than one such notice was received on the same day, proportionately based upon the amount of the union and/or fringe benefit fund claims received on such day. Nothing herein contained shall prevent the Agency from commencing an interpleader action to determine entitlement to a disputed payment in accordance with section one thousand six of the civil practice law and rules or any successor provision thereto.

F. Payment to a fringe benefit fund under this provision shall not relieve the General Contractor or Delinquent Contractor from responsibility for the work covered by the payment. Except as otherwise provided, nothing contained herein shall create any obligation on the part of the Agency to pay any union or fringe benefit fund, nor shall anything provided herein serve to create any relationship in contract or otherwise, implied or expressed, between the union/fund and/or fringe benefit and the Agency.

ARTICLE 12 - HOURS OF WORK, PREMIUM PAYMENTS, SHIFTS AND HOLIDAYS

SECTION 1. WORK WEEK AND WORKDAY

A. The standard work week shall consist of 40 hours of work at straight time rates, Monday through Friday, 8 hours per day, plus ½ hour unpaid lunch period. The standard work week may be reduced to 35 or 37 ½ hours of work at straight time rates, Monday to Friday, 7 or 7

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½ hours per day, plus ½ hour unpaid lunch period in those limited circumstances where the City states in the bid documents that the Contractor will not be given access to the site to accommodate an 8 hour day. The 8 hour, 7 ½ hour or 7-hour workday must be established at the commencement of the project and may not be altered by the Contractor.

B. In accordance with project needs, there shall be flexible start times with advance notice from Contractor to the Union. The Day Shift shall commence between the hours of 6:00 a.m. and 9:00 a.m. and shall end between the hours of 2:30 p.m. and 5:30 p.m., for an 8-hour day, and up to 7:30 p.m. for a 10-hour day. The Evening Shift shall commence between the hours of 3:00 p.m. and 6:00 p.m., unless different times are necessitated by the Agency's phasing plans on specific projects. The Night Shift shall commence between the hours of 11:00 p.m. and 2:00 a.m., unless different times are necessitated by the Agency's phasing plans on specific projects. Subject to the foregoing, starting and quitting times shall occur at the Program Work site designated by the Contractor.

C. Scheduling - Except as provided above, Monday through Friday is the standard work week; 8 hours of work plus ½ hour unpaid lunch. Notwithstanding any other provision of this Agreement, a Contractor may schedule a four-day work week, 10 hours per day ("4/10") at straight time rates, plus a ½ hour unpaid lunch, at the commencement of the job.

D. Notice - Contractors shall provide not less than 5 days prior notice to the Local Union involved as to the work week and work hour schedules to be worked or such lesser notice as may be mutually agreed upon.

SECTION 2. OVERTIME

Overtime shall be paid for any work (i) over an employee's regularly scheduled work day, i.e., work over eight (8) hours in a day where 5/8s is scheduled, work over ten (10) hours in a day where 4/10s is scheduled, or work over seven (7) or seven and one half (7½) hours where such

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hours are scheduled pursuant to Article 12, section 1(A) and (ii) over forty (40) hours in a week, or over thirty five (35) or thirty seven and one-half (37 ½) where such hours are scheduled pursuant to Article 12, section 1(A). Overtime shall be paid at time and one half (1½) Monday through Saturday. All overtime work performed on Sunday and Holidays will be paid pursuant to the applicable Schedule "A". There shall be no stacking or pyramiding of overtime pay under any circumstances. There will be no restriction upon the Contractor's scheduling of overtime or the nondiscriminatory designation of employees who shall be worked, including the use of employees, other than those who have worked the regular or scheduled work week, at straight time rates. The Contractor shall have the right to schedule work so as to minimize overtime or schedule overtime as to some, but not all, of the crafts and whether or not of a continuous nature.

SECTION 3. SHIFTS

A. Flexible Schedules - Scheduling of shift work, including Saturday and Sunday work, shall be within the discretion of the Contractor in order to meet Program Work schedules and existing Program Work conditions including the minimization of interference with the mission of the Agency. It is not necessary to work a day shift in order to schedule a second or third shift, or a second shift in order to schedule a third shift, or to schedule all of the crafts when only certain crafts or employees are needed. Shifts must have prior approval of the Agency or Construction Manager and must be scheduled with not less than five workdays' notice to the Local Union or such lesser notice as may be mutually agreed upon.

B. Second and/or Third Shifts - The second shift shall start between 3 p.m. and 6 p.m. and the third shift shall start between 10 p.m. and 2 a.m., subject to different times necessitated by the Agency phasing plans on specific projects. There shall be no reduction in shift hour work. With respect to second and third shift work there shall be a 5% shift premium, or the rate required by the applicable prevailing wage laws, whichever is less. No other premium or other payments for such

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work shall be required unless such work is in excess of the employee's regularly scheduled work week, i.e., forty (40) hours in the week or thirty five (35) or thirty seven and one half (37 ½) pursuant to Article 12, Section 1(A). All employees within the same classification performing Program Work will be paid at the same wage rate regardless of the shift or work, subject only to the foregoing provisions.

C. Flexible Starting Times - Shift starting times will be adjusted by the Contractor as necessary to fulfill Program Work requirements subject to the notice requirements of paragraph A.

SECTION 4. HOLIDAYS

A. Schedule - There shall be nine (9) recognized holidays on the project:

New Year's Day

Martin Luther King Day President's Day

Memorial Day Veteran's Day

Labor Day Thanksgiving Day

Independence Day Christmas Day

All said holidays shall be observed on the calendar date except those holidays which occur on Saturday shall be observed on the previous Friday and those that occur on Sunday shall be observed on the following Monday.

B. Payment - Regular holiday pay, if any, for work performed on such a PLA recognized holiday shall be in accordance with the applicable Schedule "A" for work performed on a holiday, even where the PLA holiday differs from the CBA holidays.

C. Exclusivity - No holidays other than those listed in Section 4(A) above shall be recognized or observed.

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SECTION 5. MAKE-UP DAYS

When severe weather, power failure, fire or natural disaster or other similar circumstances beyond the control of the Contractor prevent work from being performed on a regularly scheduled weekday, the Contractor may schedule a Saturday make-up day (or Friday make-up day in the case of a 4/10 schedule) and such time shall be scheduled and paid as if performed on a weekday. Any other Saturday work shall be paid at time and one-half (1½). The Contractor shall notify the Local Union on the missed day or as soon thereafter as practicable if such a make-up day is to be worked.

SECTION 6. REPORTING PAY

A. Employees who report to the work location pursuant to their regular schedule and who are not provided with work shall be paid two hours reporting pay at straight time rates. An employee whose work is terminated early by a Contractor due to severe weather, power failure, fire or natural disaster or for similar circumstances beyond the Contractor's control, shall receive pay only for such time as is actually worked. In other instances, in which an employee's work is terminated early (unless provided otherwise elsewhere in this Agreement), the employee shall be paid for their full shift. Contractors shall not be permitted to call, text or email or voicemail employees in advance of their regularly scheduled shift starting time to avoid reporting pay. Notwithstanding the above, in the event that the National Weather Service issues a weather advisory for the area in which the work location is situated, and the entire project is shut down as a result of the Weather Advisory, the Contractor shall be permitted to speak to employees no less than four (4) hours in advance of their shift starting time, unless the Local Union consents to a shorter notice in writing, to advise them not to report to work due to the National Weather Service advisory, and employees who are so notified shall not receive two (2) hours reporting pay if they report to the work location. The Contractor shall make every effort to notify each employee directly and confirm that notification has been received. Voice, text, and email messages left for employees without

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confirmation of delivery and receipt by employee do not constitute sufficient notice under this provision.

B. When an employee, who has completed their scheduled shift and left the Program Work site, is “called out” to perform special work of a casual, incidental or irregular nature, the employee shall receive overtime pay at the rate of time and one-half of the employee’s straight time rate for hours actually worked.

C. When an employee leaves the job or work location of their own volition or is discharged for cause or is not working as a result of the Contractor’s invocation of Section 7 below, they shall be paid only for the actual time worked.

D. Except as specifically set forth in this Article there shall be no premiums, bonuses, hazardous duty, high time or other special premium payments or reduction in shift hours of any kind.

E. There shall be no pay for time not actually worked except as specifically set forth in this Article and except where an applicable Schedule “A” requires a full weeks’ pay for forepersons.

SECTION 7. PAYMENT OF WAGES

A. Termination - Employees who are laid off or discharged for cause shall be paid in full for that which is due them at the time of termination. The Contractor shall also provide the employee with a written statement setting forth the date of lay off or discharge.

SECTION 8. EMERGENCY WORK SUSPENSION

A Contractor may, if considered necessary for the protection of life and/or safety of employees or others, suspend all or a portion of Program Work. In such instances, employees will be paid for actual time worked, except that when a Contractor requests that employees remain at the job site available for work, employees will be paid for that time at their hourly rate of pay.

SECTION 9. INJURY/DISABILITY

An employee who, after commencing work, suffers a work-related injury or disability while performing work duties, shall receive no less than a full day's pay in accordance with the employee's regularly scheduled workday under Article 12, Section (1)(A). Further, the employee shall be rehired at such time as able to return to duties provided there is still Program Work available for which the employee is qualified and able to perform.

SECTION 10. TIME KEEPING

A Contractor may utilize systems to check employees in and out. Each employee must check in and out and sign a daily sign-in sheet, or other attendance methodology approved in writing by the Agency(s). The Contractor will provide adequate facilities for checking in and out in an expeditious manner.

SECTION 11. MEAL PERIOD

A Contractor shall schedule an unpaid period of not more than 1/2-hour duration at the work location between the 3rd and 5th hour of the scheduled shift. A Contractor may, for efficiency of operation, establish a schedule which coordinates the meal periods of two or more crafts, or which provides for staggered lunch periods within a craft or trade. If an employee is required to work through the meal period, the employee shall be compensated in a manner established in the applicable Schedule "A".

SECTION 12. BREAK PERIODS

There will be no rest periods, organized coffee breaks or other non-working time established during working hours. Individual coffee containers will be permitted at the employee's work location. Where 4/10s are being worked there shall be a morning and an afternoon coffee break.

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ARTICLE 13 - APPRENTICES AND WORKFORCE DEVELOPMENT

SECTION 1. APPRENTICE RATIOS AND REFERRALS

A. Recognizing the need to maintain continuing supportive programs designed to develop adequate numbers of competent workers in the construction industry and to provide craft entry opportunities for minorities, women and economically disadvantaged non-minority males, Contractors will employ apprentices in their respective crafts to perform such work as is within their capabilities and which is customarily performed by the craft in which they are indentured. Contractors may utilize apprentices and such other appropriate classifications in the maximum ratio permitted by the New York State Department of Labor ("NYSDOL") or the maximum allowed per trade. Apprentices and such other classifications as are appropriate shall be employed in a manner consistent with the provisions of the appropriate Schedule "A" agreement. The parties encourage, as an appropriate source of apprentice recruitment consistent with the rules and operations of the affiliated unions' apprentice-programs, the use of the Edward J. Malloy Initiative for Construction Skills, Non-Traditional Employment for Women, New York Helmets to Hardhats, and Pathways to Apprenticeship (P2A). Should a Contractor request that apprentices be provided for Program Work, the referring Local Union shall comply with that request so long as it is consistent with the maximum ratios permitted by NYSDOL.

SECTION 2. WORKFORCE DEVELOPMENT

A. The parties to this Agreement recognize the mutual interest in increasing training and career opportunities for Program Hires. The parties are committed to (i) increasing opportunities for Program Hires in these zip codes in pre-apprenticeship and apprenticeship programs, and (ii) using the work opportunities provided by this Agreement to increase the career opportunities for qualified Program Hires, and (iii) to assure the continued availability of a skilled and qualified, readily available construction workforce for this program and future work. The parties agree to the Workforce Development Program set forth in Exhibit "D".

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B. Specifically, the parties have established an initiative entitled HireNYC Construction Careers, which is an initiative to advance career opportunities for Program Hires.

C. The HireNYC Construction Careers initiative will work with the Mayor's Office of Workforce Development ("WKDEV") and its Workforce1 Centers to recruit Program Hires interested in employment in the construction industry.

D. HireNYC Construction Careers intends to capitalize on the work opportunities presented by this Agreement to create a pathway to career opportunities in the construction workforce. To this end the HireNYC Construction Careers initiative includes a workforce goal of at least 30% of all hours worked under this Agreement, including by subcontractors pursuant to Article 3, Section 1(B)(12), to be worked by workers residing within the specified zip codes or NYCHA housing. In order to encourage recruitment of new workers, HireNYC Construction Careers has established a goal that at least 30% of all of those hours are to be worked by apprentices from those zip codes or NYCHA housing.

E. The Contractors and Unions agree to cooperate and participate in the implementation of HireNYC Construction Careers to assist Program Hires with educational and training opportunities related to access to pre-apprenticeship, apprenticeship, and project work as set forth in this Agreement.

F. Reporting Requirements:

i. The Contractors shall report the residence zip code information on all certified payroll reports.

ii. The Local Unions, their referral systems, the affiliated pre-apprentice programs, and Contractors shall cooperate with any protocol developed for monitoring the HireNYC Construction Careers initiative.

iii. The Local Unions shall provide the WKDEV copies of the following

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reports when such reports are submitted to NYSDOL: *Apprentice Training Recruitment Notification and Minimum Qualifications (AT 505)*, *Apprentice Training Program Affirmative Action Plan (AT 603)*, *Apprenticeship Agreement (AT 401)*, or such alternate reporting system as the parties may negotiate during the term of this Agreement.

G. The City and BCTC agree that no less than annually, the LMC shall review the implementation of HireNYC Construction Careers, as well as Program Hire opportunities afforded as a result of the initiative. The City and BCTC will collaborate to develop monitoring protocol for the purpose of measuring the success of HireNYC Construction Careers. The City and BCTC may, on mutual consent, modify the goals, procedures and protocols, as necessary to afford continued opportunity to Program Hires.

H. To facilitate the commitments set forth in this Agreement, each Local Union shall designate a HireNYC Construction Careers lead representative to work in partnership with WKDEV to implement these workforce and apprenticeship provisions within the union and across City construction contracts.

ARTICLE 14 - SAFETY PROTECTION OF PERSON AND PROPERTY

SECTION 1. SAFETY REQUIREMENTS

Each Contractor will ensure that applicable OSHA and safety requirements are at all times maintained on the Program Work site and the employees and Unions agree to cooperate fully with these efforts to the extent consistent with their rights and obligations under the law. Employees will cooperate with employer safety policies and will perform their work at all times in a safe manner and protect themselves and the property of the Contractor and Agency from injury or harm, to the extent consistent with their rights and obligations under the law. Failure to do so will be grounds for discipline, including discharge. The Construction Manager and/or Contractor may

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adopt, and the Unions shall agree to, the Drug and Alcohol Testing Policy attached as Schedule “B”.

SECTION 2. CONTRACTOR RULES

Employees covered by this Agreement shall at all times be bound by the reasonable safety, security, and visitor rules as established by the Contractors and the Construction Manager for Program Work. Such rules will be published and posted in conspicuous places throughout the Program Work sites. Any site security and access policies established by the Construction Manager or General Contractor intended for specific application to the construction workforce for Program Work and that are not established pursuant to an Agency directive shall be implemented only after notice to the BCTC and its affiliates and an opportunity for negotiation and resolution by the Labor Management Committee.

SECTION 3. INSPECTIONS

The Contractors and Construction Manager retain the right to inspect incoming shipments of equipment, apparatus, machinery and construction materials of every kind.

ARTICLE 15 - TEMPORARY SERVICES

SECTION 1.

Temporary services, i.e. all temporary heat, climate control, water, power and light, shall only be required upon the determination of the Agency or Construction Manager, and when used shall be staffed and assigned to the appropriate trade(s) with jurisdiction. Temporary services shall be provided by the appropriate Contractors’ existing employees during working hours in which a shift is scheduled for employees of the Contractor. The Agency or Construction Manager may determine the need for temporary services requirements during non-working hours, and when used shall be staffed and assigned to the appropriate trades(s), and which may be limited to one person per applicable trade where practicable. There shall be no stacking of trades on temporary services,

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provided this does not constitute a waiver of primary trade jurisdiction. In the event a temporary system component is claimed by multiple trades, the matter shall be resolved through the New York Plan for Jurisdictional Disputes.

ARTICLE 16 - NO DISCRIMINATION

SECTION 1. COOPERATIVE EFFORTS

The Contractors and Unions agree that they will not discriminate against any employee or applicant for employment because of creed, race, color, religion, sex, sexual orientation, national origin, marital status, citizenship status, disability, gender identity, age or any other status provided by law, in any manner prohibited by law or regulation.

SECTION 2. LANGUAGE OF AGREEMENT

Any words signifying any gender shall be interpreted to mean any or all gender identities.

ARTICLE 17 - GENERAL TERMS

SECTION 1. PROJECT RULES

A. The Construction Manager and the Contractors shall establish such reasonable Program Work rules that are not inconsistent with this Agreement or rules common in the industry and are reasonably related to the nature of work. These rules will be explained at the pre-job conference and posted at the Program Work sites and may be amended thereafter as necessary. Notice of amendments will be provided to the appropriate Local Union. Failure of an employee to observe these rules and regulations shall be grounds for discipline, including discharge. The fact that no order was posted prohibiting a certain type of misconduct shall not be a defense to an employee disciplined or discharged for such misconduct when the action taken is for cause.

B. The parties adopt and incorporate the BCTC's Standards of Excellence as annexed hereto as Exhibit "B".

SECTION 2. TOOLS OF THE TRADE

The welding/cutting torch and chain fall are tools of the trade having jurisdiction over the work performed. Employees using these tools shall perform any of the work of the trade. There shall be no restrictions on the emergency use of any tools or equipment by any qualified employee or on the use of any tools or equipment for the performance of work within the employee's jurisdiction.

SECTION 3. SUPERVISION

Employees shall work under the supervision of the craft foreperson or general foreperson.

SECTION 4. TRAVEL ALLOWANCES

There shall be no payments for travel expenses, travel time, subsistence allowance or other such reimbursements or special pay except as expressly set forth in this Agreement.

SECTION 5. FULL WORKDAY

Employees shall be at their work area at the starting time established by the Contractor, provided they are provided access to the work area. The signatories reaffirm their policy of a fair day's work for a fair day's wage.

SECTION 6. COOPERATION AND WAIVER

The Construction Manager, Contractors and the Unions will cooperate in seeking any NYSDOL, or any other government, approvals that may be needed for implementation of any terms of this Agreement. In addition, the Council, on their own behalf and on behalf of its participating affiliated Local Unions and their individual members, intend the provisions of this Agreement to control to the greatest extent permitted by law, notwithstanding contrary provisions of any applicable prevailing wage, or other, law and intend this Agreement to constitute a waiver of any such prevailing wage, or other, law to the greatest extent permissible only for work within the scope of this Agreement, including specifically, but not limited to those provisions relating to shift, night,

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and similar differentials and premiums. This Agreement does not, however, constitute a waiver or modification of the prevailing wage schedules applicable to work not covered by this Agreement.

ARTICLE 18 - SAVINGS AND SEPARABILITY

SECTION 1. THIS AGREEMENT

In the event that the application of any provision of this Agreement is enjoined, on either an interlocutory or permanent basis, or is otherwise determined to be in violation of law, or if such application may cause the loss of project funding or any New York State Labor Law exemption for all or any part of the Program Work, the provision or provisions involved (and/or its application to particular Program Work, as necessary) shall be rendered, temporarily or permanently, null and void, but where practicable the remainder of the Agreement shall remain in full force and effect to the extent allowed by law (and to the extent no funding or exemption is lost), unless the part or parts so found to be in violation of law or to cause such loss are wholly inseparable from the remaining portions of the Agreement and/or are material to the purposes of the Agreement. In the event a court of competent jurisdiction finds any portion of the Agreement to trigger the foregoing, the parties will immediately enter into negotiations concerning the substance affected by such decision for the purpose of achieving conformity with the court determination and the intent of the parties hereto for contracts to be let in the future.

SECTION 2. THE BID SPECIFICATIONS

In the event that the Agency's (or Construction Manager's) bid specifications, or other action, requiring that a successful bidder (and subcontractor) become signatory to this Agreement is enjoined, on either an interlocutory or permanent basis, or is otherwise determined to be in violation of law, or may cause the loss of project funding or any New York State Labor Law exemption for all or any part of the Program Work, such requirement (and/or its application to particular Program Work, as necessary) shall be rendered, temporarily or permanently, null and void, but where practicable the Agreement shall remain in full force and effect to the extent allowed

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

by law and to the extent no funding or exemption is lost. In such event, the Agreement shall remain in effect for contracts already bid and awarded or in construction only where the Agency and Contractor voluntarily accepts the Agreement. The parties will enter into negotiations as to modifications to the Agreement to reflect the court or other action taken and the intent of the parties for contracts to be let in the future.

SECTION 3. NON-LIABILITY

In the event of an occurrence referenced in Section 1 or Section 2 of this Article, neither the Agency, the Construction Manager, any Contractor, nor any Union shall be liable, directly or indirectly, for any action taken, or not taken, to comply with any court order or injunction, other determination, or in order to maintain funding or a New York State Labor Law exemption for Program Work. Bid specifications will be issued in conformance with court orders then in effect and no retroactive payments or other action will be required if the original court determination is ultimately reversed.

SECTION 4. NON-WAIVER

Nothing in this Article shall be construed as waiving the prohibitions of Article 7 as to signatory Contractors and signatory Unions.

ARTICLE 19 - FUTURE CHANGES IN SCHEDULE "A" AREA CONTRACTS

SECTION 1. CHANGES TO AREA CONTRACTS

A. Schedule "A" to this Agreement shall continue in full force and effect until the Contractor and/or Union parties to the Area CBAs that are the basis for the Schedule "A" notify the Mayor's Office of Contract Services ("MOCS"), Agency and Construction Manager in writing by providing a copy of the updated CBA(s) incorporating the changes agreed to in that Area CBA which are applicable to work covered by this Agreement and their effective dates.

B. It is agreed that any provisions negotiated into Schedule "A" CBAs will not apply to work under this Agreement if such provisions are less favorable to those uniformly required of

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

contractors for construction work normally covered by those agreements; nor shall any provision be recognized or applied on Program Work if it may be construed to apply exclusively, or predominantly, to work covered by this Agreement.

C. Any disagreement between signatories to this Agreement over the incorporation into Schedule “A” of provisions agreed upon in the renegotiation of Area CBAs shall be resolved in accordance with the procedure set forth in Article 9 of this Agreement.

SECTION 2. LABOR DISPUTES DURING AREA CONTRACT NEGOTIATIONS

The Unions agree that there will be no strikes, work stoppages, sympathy actions, picketing, slowdowns or other disruptive activity or other violations of Article 7 affecting the Program Work by any Local Union involved in the renegotiation of Area Local CBAs nor shall there be any lock-out on such Program Work affecting a Local Union during the course of such renegotiations.

ARTICLE 20 - WORKERS’ COMPENSATION ADR

SECTION 1.

An Alternative Dispute Resolution (“ADR”) program may be negotiated and participation in the ADR program will be optional by trade.

ARTICLE 21 - HELMETS TO HARDHATS

SECTION 1.

The Contractors and the Unions recognize a desire to facilitate the entry into the building and construction trades of veterans who are interested in careers in the building and construction industry. The Contractors and Unions agree to utilize the services of the New York City Helmets to Hardhats Program (“H2H”) to serve as a resource for preliminary orientation, assessment of construction aptitude, referral to apprenticeship programs or hiring halls, counseling and mentoring, support network, employment opportunities and other needs as identified by the parties.

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

SECTION 2.

The Unions and Contractors agree to coordinate with H2H to create and maintain an integrated database of veterans interested in working on this project and of apprenticeship and employment opportunities for this project. To the extent permitted by law, the Unions will give credit to such veterans for bona fide, provable past experience.

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

IN WITNESS WHEREOF the parties have caused this Agreement to be executed and effective as
of the ____ day of _____, ____.

FOR BUILDING AND CONSTRUCTION TRADES COUNCIL
OF GREATER NEW YORK AND VICINITY

BY: Gary LaBarbera
Gary LaBarbera
President

FOR NEW YORK CITY

BY: Dean Fuleihan
Dean Fuleihan
First Deputy Mayor

APPROVED AS TO FORM:

Steve Stein Cusumano
ACTING CORPORATION COUNSEL
NEW YORK CITY

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

LIST OF SIGNATORY UNIONS
International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers, AFL-CIO, Local Lodge No.5
Bricklayers and Allied Craftworkers, Local Union No. 1
Building Concrete & Excavating Laborers, Local Union No. 731
N.Y.C. and Vicinity District Council of Carpenters
Cement Masons, Local Union No. 780
Concrete Workers District Council No. 16
Asbestos, Lead & Hazardous Waste, Laborers Local Union No. 78
Construction & General Building Laborers Local Union No. 79
Derrickmen and Riggers Local Union No. 197
International Brotherhood of Electrical Workers, Local Union No. 3
International Union of Elevator Constructors, Local Union No. 1
Heat & Frost Insulators & Allied Workers, Local Union No. 12
Heat & Frost Insulators & Allied Workers, Local Union No. 12A
Pavers & Road Builders, Laborers Local Union No. 1010
New York State Iron Workers District Council
Structural Iron Workers, Local Union No. 40
Structural Iron Workers, Local Union No. 361
Mason Tenders District Council
Metallic Lathers & Reinforcing Ironworkers, Local No. 46
Ornamental Iron Workers, Local Union No. 580
Glaziers No. 1087, District Council 9
Painters, District Council No. 9
Metal Polishers, Local Union No. 8A-28A; District Council No. 9
Drywall Tapers Local Union No 1974, District Council 9
Bridge & Structural Steel Painters, Local Union No. 806, District Council 9
Operative Plasterers Local Union No. 262
UA Plumbers Local Union No. 1
Private Sanitation, Teamsters Local Union No. 813
Roofers & Waterproofers, Local Union No. 8
Sheet Metal Workers, Local Union No. 28
Sheet Metal Workers, Local Union No. 137
UA Steamfitters, Local Union No. 638
Teamsters, Local Union No. 282
Tile, Marble & Terrazzo, B.A.C. Local Union No. 7

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

SCHEDULE "A" - CBAs

Union	Current Agreement w/
Architectural and Ornamental Iron Workers Local Union 580, AFL-CIO	Allied Building Metal Industries, Inc.
Building, Concrete, Excavating & Common Laborers Local 731	Independent
Building, Concrete, Excavating & Common Laborers Local 731	Members of the General Contractors Association of New York, Inc.
Bricklayers Local 1 of the International Union of Bricklayers and Allied Craftworkers	Independent
District Council No. 9, I.U.P.A.T Glaziers Local 1087	Window and Plate Glass Dealers Association
Drywall Tapers and Painters Local 1974, affiliated with International Union of Painters & Allied Trades and Drywall Taping Contractor's Association & Association of Wall-Ceiling & Carpentry Industries NY, Inc.	Independent
Enterprise Association of Steamfitters and Apprentices Local 638	Mechanical Contractors Association of NY, Inc.
Enterprise Association of Steamfitters and Apprentices Local 638	Independent
Elevator Constructors Local 1 of NY and NJ	ThyssenKrupp Elevator Corporation
Elevator Constructors Local 1 of NY and NJ	Independent
Highway Road and Street Laborers Local Union 1010 of the District Council of Pavers and Road Builders of the Laborers' International Union of North America AFL-CIO	Independent
Highway Road and Street Laborers Local Union 1010 of the District Council of Pavers and Road Builders of the Laborers' International Union of North America AFL-CIO	Member of the General Contractors Association of New York, Inc.
International Association of Heat and Frost Insulators and Allied Workers Local No. 12 of New York City	Independent
International Association of Heat and Frost Insulators and Allied Workers Local No. 12 of New York City	The Insulation Contractors Association of New York City, Inc.
International Association of Heat and Frost Insulators and Allied Workers Local No. 12A of New York City	Independent

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

International Association of Heat and Frost Insulators and Allied Workers Local No. 12A of New York City	Environmental Contractors Association, Inc.
International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers, AFL-CIO, Local Lodge No. 5	Boilermakers Association of Greater New York
Local Union No. 3 International Brotherhood of Electrical Workers, AFL-CIO	New York Electrical Contractors Association
International Brotherhood of Teamsters, Local 282, High Rise Contract	Building Contractors Association & Independents
Local 46 Metallic Lathers Union and Reinforcing Iron Workers of NY and Vicinity of the International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers	Cement League
Local 46 Metallic Lathers Union and Reinforcing Iron Workers of NY and Vicinity of the International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers	Independent
Local 8 Roofers, Waterproofers & Allied Workers	Roofing and Waterproofing Contractors Association of New York and Vicinity
Local Union 1 of the United Association of Journeymen and Apprentices of the Pipe Fitting Industry of the United States and Canada	Association of Contracting Plumbers of the City of New York
Local Union Number 40 & 361 of Bridge, Structural Ornamental and Reinforcing Iron Workers AFL-CIO	Independent
Mason Tenders DC & Laborers' International Union – Local 78 & 79	Building Contractors Association
Mason Tenders DC & Laborers' International Union – Local 78 & 79	Interior Demolition Contractors Association
Mason Tenders DC & Laborers' International Union – Local 78 & 79	Independent
Mason Tenders DC & Laborers' International Union – Local 78 & 79	NYCDCA
Mason Tenders DC & Laborers' International Union – Local 78 & 79	Environmental Contractors Association
Mason Tenders DC & Laborers' International Union – Local 78 & 79	ABMC

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Operative Plasterers' and Cement Masons' International Association Local No. 262	Independent
Painters and Allied Trades AFL-CIO, District Council No. 9 (Painting and Protective Coatings CBA)	Independent
Painters and Allied Trades AFL-CIO, District Council No. 9 (Painting and Protective Coatings CBA)	The Association of Master Painters & Decorators of NY, Inc. and The Association of Wall, Ceiling & Carpentry Industries of NY, Inc. and The Window and Plate Glass Dealers Association
Sheet Metal Workers' International Association, Local 28	Sheet Metal & Air Conditioning Contractors Association of New York City, Inc.
Sheet Metal Workers' International Association, Local 137	The Greater New York Sign Association
Structural Steel and Bridge Painters Local 806, DC 9 International Union of Painters and Allied Trades, AFL-CIO	New York Structural Steel Painting Contractors Association
Teamsters Local 813	Independent
Teamsters Local 813	IESI NY Corporation
The Cement Masons' Union, Local 780	Cement League
The District Council of Cement and Concrete Workers (comprised of Local 6A; Local 18A and Local 20)	Cement League
The District Council of Cement and Concrete Workers (comprised of Local 6A; Local 18A and Local 20)	Independent
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America for Heavy Carpenters	GCA
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America for Dockbuilders Local No. 1556	Concrete Contractors of NY
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America for Dockbuilders Local 1556	Independent
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America for Millwright Local 740	Independent

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The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America for Timbermen Local 1556	Independent
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America for Timbermen Local 1556	GCA
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America for Heavy Carpenters	Independent
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America for Carpenters	Manufacturing Woodworkers Association of Greater New York Incorporated
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America	The Hoisting Trade Association of New York, Inc.
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America	The Test Boring Association
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America	Building Contractors Association
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America	The Association of Wall-Ceiling & Carpentry Industries of New York, Incorporated
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners	The Cement League
The District Council of NYC and Vicinity of the United Brotherhood of Carpenters and Joiners of America	New York City Millwright Association
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners	Greater New York Floor Covering Association
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America for Carpenters	Association of Architectural Metal & Glass

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America for Carpenters	Concrete Contractors of NY
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America for Building Construction Carpenters	Independent
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America for Local 2287	Independent
The District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America for Shop Carpenters	Independent
The Tile Setters and Tile Finishers Union of New York and New Jersey, Local 7 of the International Bricklayers and Allied Craftworkers	The Greater New York and New Jersey Contractors Association
United Derrickmen & Riggers Association, Local 197 of NY, LI, Westchester & Vicinity	Contracting Stonesetters Association Inc.
United Derrickmen & Riggers Association Local 197 of NY, LI, Westchester and Vicinity	Building Stone and Pre-cast Contractors Association

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

Exhibit A

Project Labor Agreement - Letter of Assent

Dear: _____

The undersigned party confirms that it agrees to be a party to and be bound by the New York Agency, Project Labor Agreement as such Agreement may, from time to time, be amended by the parties or interpreted pursuant to its terms. The terms of the Project Labor Agreement, its Schedules, Addenda and Exhibits are hereby incorporated by reference herein.

The undersigned, as a Contractor or Subcontractor (hereinafter Contractor) on the Project known as the NYC Agency Renovation and located at PV467WFAC (hereinafter PROJECT), for and in consideration of the award to it of a contract to perform work on said PROJECT, and in further consideration of the mutual promises made in the Project Labor Agreement, a copy of which was received and is acknowledged, hereby:

- (1) Accepts and agrees to be bound by the terms and conditions of the Agreement, together with any and all schedules; amendments and supplements now existing or which are later made thereto;
- (2) Agrees to be bound by the legally established collective bargaining agreements; local trust agreements for employee benefit funds; and trust documents for joint apprentice programs as well as apprentice program rules and procedures but only to the extent of Program Work and as required by the PLA.
- (3) Authorizes the parties to such local trust agreements to appoint trustees and successor trustees to administer the trust funds and hereby ratifies and accepts the trustees so appointed as if made by the Contractor but only to the extent of Program Work as required by the PLA.
- (4) Certifies that it has no commitments or agreements that would preclude its full and complete compliance with the terms and conditions of said Agreement. The Contractor agrees to employ labor that can work in harmony with all other labor on the Project and shall require labor harmony from every lower tier subcontractor it has engaged or may engage to work on the Project. Labor harmony disputes/issues shall be subject to the Labor Management Committee provisions.
- (5) Agrees to secure from any Contractor(s) (as defined in said Agreement) which is or becomes a Subcontractor (of any tier), to it, a duly executed Agreement to be Bound in from identical to this document.

Provide description of the Work, identify craft jurisdiction(s) and all contract numbers below:

Local Union: Applicable trades for the project contract work

Description of Work: The Heckscher Building, Partial Exterior Envelope Upgrade

Contract Number(s): FMS ID PV467WFAC

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

Dated: December 15, 2021

Sharan Builders, Inc.
(Name of CM; GC; Contractor or
Higher Level Subcontractor)

Manjit Singh
(Signature)

Sharan Builders, Inc.
(Name of Contractor or subcontractor)

Manjit Singh, President
(Authorized Officer & Title)

128-12 18th Avenue, College Point, NY 11356
(Address)

T: 718-361-1700 F: 718-361-1799
(Phone) (Fax)

Contractor's State License
1241706

Sworn to before me this
15th day of December, 2021

Julia Tarlo
Notary Public

JULIA TARLO
Notary Public, State of New York
No. 01TA6041048
Qualified in Kings County
Commission Expires May 01, 2022

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

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- (4) Certifies that it has no commitments or agreements that would preclude its full and complete compliance with the terms and conditions of said Agreement. The Contractor agrees to employ labor that can work in harmony with all other labor on the Project and shall require labor harmony from every lower tier subcontractor it has engaged or may engage to work on the Project. Labor harmony disputes/issues shall be subject to the Labor Management Committee provisions.
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Manjit Singh
(Signature)

Sharan Builders, Inc.
(Name of Contractor or subcontractor)

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Sworn to before me this
15th day of December, 2021
Julia Tarlo
Notary Public

JULIA TARLO
Notary Public, State of New York
No. 01TA6041048
Qualified in Kings County
Commission Expires May 01, 2022

Exhibit B

**NEW YORK CITY BUILDING AND CONSTRUCTION TRADES COUNCIL
STANDARDS OF EXCELLENCE**

The purpose of this Standard of Excellence is to reinforce the pride of every construction worker and the commitment to be the most skilled, most productive and safest workforce available to construction employers and users in the City of New York. It is the commitment of every affiliated local union to use our training and skills to produce the highest quality work and to exercise safe and productive work practices.

The rank and file members represented by the affiliated local unions acknowledge and adopt the following standards:

- *Provide a full day's work for a full days pay;*
- *Safely work towards the timely completion of the job;*
- *Arrive to work on time and work until the contractual quitting time;*
- *Adhere to contractual lunch and break times;*
- *Promote a drug and alcohol free work site;*
- *Work in accordance with all applicable safety rules and procedures;*
- *Allow union representatives to handle job site disputes and grievances without resort to slowdowns, or unlawful job disruptions;*
- *Respect management directives that are safe, reasonable and legitimate;*
- *Respect the rights of co-workers;*
- *Respect the property rights of the owner, management and contractors.*

The Unions affiliated with the New York City Building and Construction Trades Council will expect the signatory contractors to safely and efficiently manage their jobs and the unions see this as a corresponding obligation of the contractors under this Standard of Excellence. The affiliated unions will expect the following from its signatory contractors:

- *Management adherence to the collective bargaining agreements;*
- *Communication and cooperation with the trade foremen and stewards;*
- *Efficient, safe and sanitary management of the job site;*
- *Efficient job scheduling to mitigate and minimize unproductive time;*
- *Efficient and adequate staffing by properly trained employees by trade;*
- *Efficient delivery schedules and availability of equipment and tools to ensure efficient job progress;*
- *Ensure proper blueprints, specifications and layout instructions and material are available in a timely manner*
- *Promote job site dispute resolution and leadership skills to mitigate such disputes;*
- *Treatment of all employees in a respectful and dignified manner acknowledging their contributions to a successful project.*

The affiliated unions and their signatory contractors shall ensure that both the rank and file members and the management staff shall be properly trained in the obligations undertaken in the Standard of Excellence.

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

Exhibit “C” - HireNYC Construction Careers

(August 2020 version)

Non-exhaustive list of zip codes where at least 15% of the individuals are below the federal poverty rate
(Zip codes within ~100 mile radius of NYC)

Zip Code	Borough	Neighborhood
10001	Manhattan	Midtown South
10002	Manhattan	Chinatown
10009	Manhattan	East Village
10025	Manhattan	Manhattan Valley
10026	Manhattan	Central Harlem
10027	Manhattan	Manhattanville
10029	Manhattan	East Harlem
10030	Manhattan	Central Harlem
10031	Manhattan	Hamilton Heights
10032	Manhattan	Inwood and Washington Heights
10033	Manhattan	Washington Heights
10034	Manhattan	Inwood
10035	Manhattan	East Harlem
10037	Manhattan	Central Harlem
10038	Manhattan	Lower Manhattan
10039	Manhattan	Central Harlem
10040	Manhattan	Inwood and Washington Heights
10301	Staten Island	St. George
10302	Staten Island	Port Richmond
10303	Staten Island	Mariner's Harbor
10304	Staten Island	Stapleton
10310	Staten Island	West Brighton
10451	Bronx	Concourse Village
10452	Bronx	High Bridge
10453	Bronx	University Heights
10454	Bronx	Mott Haven
10455	Bronx	Longwood
10456	Bronx	Melrose
10457	Bronx	Central Bronx
10458	Bronx	Bedford Park
10459	Bronx	Morrisania
10460	Bronx	East Tremont
10462	Bronx	Parkchester
10463	Bronx	Kingsbridge
10466	Bronx	Wakefield
10467	Bronx	Norwood
10468	Bronx	Bronx Park and Fordham
10472	Bronx	Unionport
10473	Bronx	Soundview
10474	Bronx	Hunts Point

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

PLA Exhibit C - HireNYC Construction Careers

(August 2020 version)

Non-exhaustive list of zip codes where at least 15% of the individuals are below the federal poverty rate

(Zip codes within ~100 mile radius of NYC)

Zip Code	Borough	Neighborhood
11101	Queens	Long Island City
11102	Queens	Northwest Queens
11106	Queens	Ravenswood
11203	Brooklyn	East Flatbush
11204	Brooklyn	Borough Park
11205	Brooklyn	Fort Greene
11206	Brooklyn	East Williamsburg
11207	Brooklyn	East New York
11208	Brooklyn	East New York / Cypress Hills
11211	Brooklyn	Williamsburg
11212	Brooklyn	Brownsville
11213	Brooklyn	Crown Heights
11214	Brooklyn	Bensonhurst
11216	Brooklyn	Central Brooklyn
11218	Brooklyn	Kensington
11219	Brooklyn	Borough Park
11220	Brooklyn	Sunset Park
11221	Brooklyn	Bushwick
11223	Brooklyn	Gravesend
11224	Brooklyn	Coney Island
11225	Brooklyn	Prospect Lefferts Gardens
11226	Brooklyn	Prospect Park South
11230	Brooklyn	Midwood
11232	Brooklyn	Sunset Park
11233	Brooklyn	Ocean Hill
11235	Brooklyn	Brighton Beach
11237	Brooklyn	Bushwick and Williamsburg
11239	Brooklyn	Starrett City
11354	Queens	Downtown Flushing
11355	Queens	Queensboro Hill
11368	Queens	South Corona
11369	Queens	East Elmhurst
11373	Queens	Elmhurst
11416	Queens	Southwest Queens
11417	Queens	Ozone Park
11418	Queens	Richmond Hill
11430	Queens	Ozone Park
11432	Queens	Jamaica Center
11433	Queens	South Jamaica
11435	Queens	Briarwood
11691	Queens	Far Rockaway
11692	Queens	Arverne

Data Source: 2013-2017 American Community Survey 5-year estimates

2020 NYC AGENCY RENOVATION PROJECT LABOR AGREEMENT

PLA Exhibit C - HireNYC Construction Careers

(August 2020 version)

Non-exhaustive list of zip codes where at least 15% of the individuals are below the federal poverty rate

(Zip codes within ~100 mile radius of NYC)

Zip Code	State	City or Town
06401	CT	Ansonia
06510	CT	New Haven
06511	CT	New Haven
06513	CT	New Haven
06515	CT	New Haven
06519	CT	New Haven
06604	CT	Bridgeport
06605	CT	Bridgeport
06607	CT	Bridgeport
06608	CT	Bridgeport
06610	CT	Bridgeport
06702	CT	Waterbury
06704	CT	Waterbury
06705	CT	Waterbury
06706	CT	Waterbury
06708	CT	Waterbury
06710	CT	Waterbury
06810	CT	Danbury
07002	NJ	Bayonne
07017	NJ	East Orange
07018	NJ	East Orange
07022	NJ	Fairview
07026	NJ	Garfield
07029	NJ	Harrison
07047	NJ	North Bergen
07050	NJ	Orange
07055	NJ	Passaic
07060	NJ	Plainfield
07062	NJ	Plainfield
07087	NJ	Union City
07093	NJ	West New York
07102	NJ	Newark
07103	NJ	Newark
07104	NJ	Newark
07105	NJ	Newark
07106	NJ	Newark
07107	NJ	Newark
07108	NJ	Newark
07111	NJ	Irvington
07112	NJ	Newark
07114	NJ	Newark
07201	NJ	Elizabeth
07202	NJ	Elizabeth
07206	NJ	Elizabethport
07208	NJ	Elizabeth
07304	NJ	Jersey City
07305	NJ	Jersey City
07306	NJ	Jersey City
07307	NJ	Jersey City
07310	NJ	Jersey City

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PLA Exhibit C - HireNYC Construction Careers

(August 2020 version)

Non-exhaustive list of zip codes where at least 15% of the individuals are below the federal poverty rate

(Zip codes within ~100 mile radius of NYC)

Zip Code	State	City or Town
07501	NJ	Paterson
07502	NJ	Paterson
07503	NJ	Paterson
07504	NJ	Paterson
07505	NJ	Paterson
07513	NJ	Paterson
07514	NJ	Paterson
07522	NJ	Paterson
07524	NJ	Paterson
07608	NJ	Teterboro
07703	NJ	Fort Monmouth
07712	NJ	Asbury Park
07727	NJ	Farmingdale
07734	NJ	Keansburg
07740	NJ	Long Branch
07820	NJ	Allamuchy
07939	NJ	Lyons
08031	NJ	Bellmawr
08045	NJ	Lawnside
08095	NJ	Winslow
08102	NJ	Camden
08103	NJ	Camden
08104	NJ	Camden
08105	NJ	Camden
08110	NJ	Pennsauken
08217	NJ	Elwood
08224	NJ	New Gretna
08608	NJ	Trenton
08609	NJ	Trenton
08611	NJ	Trenton
08618	NJ	Trenton
08638	NJ	Trenton
08701	NJ	Lakewood
08751	NJ	Seaside Heights
08808	NJ	Broadway
08861	NJ	Perth Amboy
08901	NJ	New Brunswick
10545	NY	Maryknoll
10550	NY	Mount Vernon
10601	NY	White Plains
10701	NY	Yonkers
10703	NY	Yonkers
10705	NY	Yonkers
10801	NY	New Rochelle
10927	NY	Haverstraw
10932	NY	Howells
10940	NY	Middletown
10950	NY	Monroe
10952	NY	Monsey
10963	NY	Otisville
10977	NY	Spring Valley

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PLA Exhibit C - HireNYC Construction Careers

(August 2020 version)

Non-exhaustive list of zip codes where at least 15% of the individuals are below the federal poverty rate
(Zip codes within ~100 mile radius of NYC)

Zip Code	State	City or Town
11096	NY	Inwood
11550	NY	Hempstead
11556	NY	Uniondale
11713	NY	Bellport
11798	NY	Wyandanch
11951	NY	Mastic Beach
11970	NY	South Jamesport
12401	NY	Kingston
12416	NY	Chichester
12419	NY	Cottekill
12427	NY	Elka Park
12428	NY	Ellenville
12432	NY	Glasco
12457	NY	Mount Tremper
12475	NY	Ruby
12489	NY	Wawarsing
12490	NY	West Camp
12491	NY	West Hurley
12516	NY	Copake
12550	NY	Newburgh
12561	NY	New Paltz
12583	NY	Tivoli
12589	NY	Wallkill
12594	NY	Wingdale
12601	NY	Poughkeepsie
12701	NY	Monticello
12725	NY	Claryville
12729	NY	Cuddebackville
12732	NY	Eldred
12733	NY	Fallsburg
12743	NY	Highland Lake
12747	NY	Hurleyville
12749	NY	Kauneonga Lake
12751	NY	Kiamesha Lake
12754	NY	Liberty
12758	NY	Livingston Manor
12759	NY	Loch Sheldrake
12762	NY	Mongaup Valley
12763	NY	Mountain Dale
12779	NY	South Fallsburg
12780	NY	Sparrow Bush
19007	PA	Bristol
19123	PA	Philadelphia
19125	PA	Philadelphia
19134	PA	Philadelphia
19135	PA	Philadelphia
19136	PA	Philadelphia
19137	PA	Philadelphia

Data Source: 2013-2017 American Community Survey 5-year estimates

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EXHIBIT "D"
MEMORANDUM OF UNDERSTANDING

MEMORANDUM OF UNDERSTANDING, entered into as of _____, between the City of New York ("City") with an office located at City Hall, New York, NY 10007, the Building and Construction Trades Council of Greater New York and Vicinity ("BCTC"), on its behalf and on behalf of its affiliated unions, with its principal place of business located at 350 West 31st Street, New York, NY 10001, and the Building Trade Employers' Association of New York City ("BTEA"), on its behalf and on behalf of its affiliated contractors, with its principal place of business located at 1325 Avenue of the Americas, New York, NY 10019.

WHEREAS, since 2009, the City, the BCTC, and the BTEA have entered into Memoranda of Understanding (each an "MOU"), contemporaneous to the City entering to Project Labor Agreements with the BCTC (each a "PLA"), setting goals on new apprenticeship opportunities for graduates of direct entry pre-apprenticeship programs for low-income New Yorkers, minorities, high school students, women, veterans, NYCHA residents, and qualified employees of Minority- and Women-Owned Business Enterprises ("M/WBEs") that become signatory to the union, and have provided increased opportunities for New Yorkers to have access to good union construction careers;

WHEREAS, in 2014, the City and the BCTC entered into an MOU related to the New York City Build It Back Program and committed to encourage contractors and subcontractors to employ Sandy-impacted residents and for the City and the BCTC to work together with community-based organizations to recruit and train New York City residents, with an emphasis on Sandy-impacted low income residents;

WHEREAS, the BCTC and the BTEA committed to: (i) promote the representation of veterans, women, high school graduates of the City's public schools, and New Yorkers in need of economic opportunity in apprenticeship programs jointly sponsored by BCTC unions and BTEA contractors, and (ii) improve workforce training and development for entrance into the construction industry;

WHEREAS, in 2014, the City of New York issued *Career Pathways: One City Working Together*, with a commitment to maximize local job opportunities through the City's contracts, and as such the City is committed to ensuring that low-income New Yorkers have access to the good jobs and careers that are created through the City's capital investments and through this MOU and contemporaneous PLA, the City the BCTC, and with the cooperation of the BTEA contractors can connect low-income New Yorkers to good prevailing wage construction careers;

WHEREAS, through this MOU and contemporaneous PLAs, the City, the BCTC, and the BTEA commit to recruiting in low-income communities, providing opportunities through pre-apprenticeship and apprenticeship programs for access to construction careers, and ensuring residents of low-income communities, including apprentices, are provided opportunities to work on publicly-funded and -assisted construction projects;

WHEREAS, pursuant to Local Law 1 of 2013, the City is also committed to its M/WBE program, and in partnership with the M/WBE Leadership Association seeks to encourage eligible companies to certify as M/WBEs, and provides a wide range of training and technical assistance to build the capacity of its certified companies to bid successfully for the City's contracts and subcontracts;

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WHEREAS, an important element in the success of pre-apprenticeship and apprenticeship programs, as well as in creating work opportunities for contractors and sub-contractors in New York City, is the availability of work on publicly funded and assisted projects; and

WHEREAS, the parties to this MOU desire to publicly state their intentions with respect to apprenticeship programs and the creation of contracting and other economic opportunities in the construction industry.

NOW, THEREFORE, the City, the BCTC, and the BTEA state as follows:

1. Scope. This MOU:

- a.** States the intentions of the City, the BCTC, and the BTEA regarding:
 - a. the provision of opportunities in apprenticeship programs jointly sponsored by BCTC unions and BTEA contractors;
 - b. the City's application of apprenticeship requirements in City construction contracts from the time of execution through December 31, 2024;
 - c. the joint goal of the City, the BCTC, and the BTEA to create employment opportunities, including apprenticeships, in the construction industry; and

b. Shall terminate on December 31, 2024

- 2.** To facilitate the commitments set forth in this MOU, each Local Union shall designate a HireNYC Construction Careers lead representative to work in partnership with the Mayor's Office of Workforce Development ("WKDEV") to implement these workforce and apprenticeship provisions within the union and across City construction contracts.
- 3.** The BCTC and the BTEA shall work collaboratively with the City to reserve at least 500 new apprenticeship positions each calendar year through both the general recruitment and direct entry programs for New York City residents living in zip codes where at least 15% of the individuals in such zip code are below the federal poverty rate and NYCHA residents regardless of zip code.
- 4.** The BCTC and BTEA shall work collaboratively with the City to reserve new apprenticeship positions each year for direct entry.
 - a.** New York State Department of Labor ("NYSDOL") approved Direct Entry programs may be used by sponsors of Registered Apprenticeship programs as another way to bring apprentices into their programs. It is a tool to help sponsors reach underrepresented populations. Direct Entry provides individuals who successfully complete an apprenticeship preparation program, and who meet the minimum requirements for a NYS Registered Apprenticeship program, with the direct opportunity for an interview with the

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sponsor of a program bypassing the general recruitment scheduled for the Apprentices Programs.

5. Apprenticeship programs jointly sponsored by Local Unions and employers affiliated with the BTEA shall, subject to approval by the NYSDOL and to the extent consistent with applicable consent decrees, court orders or similar mandates, reserve up to the following percentages of their new apprenticeships (some apprentices may be counted in more than one category) for direct entry each year:
 - a. 20% for graduates of New York City public high school who have completed pre-apprenticeship training provided by The Edward J. Malloy Initiative for Construction Skills ("C-SKILLS");
 - b. 10% for veterans of the U.S. Armed Forces who are referred by New York City Helmets to Hardhats ("NYC H2H"), provided, however, that any veterans whose qualifications allow them to enter unions as journeypersons shall be counted toward the fulfillment of this percentage;
 - c. 15% for women who have completed pre-apprenticeship training provided by Nontraditional Employment for Women ("NEW");
 - d. 10% for NYCHA and Section 8 residents who have completed pre-apprenticeship training provided by C-SKILLS, NEW, the NYCHA Resident Training Academy ("NRTA"), or Pathways to Apprenticeships ("P2A");
 - e. 10% for justice-involved individuals who have completed pre-apprenticeship training provided by C-SKILLS, NEW, NRTA, or P2A; and
 - f. 5% for qualified employees of certified minority- and women-owned business enterprises and other employers not signatory to collective bargaining agreements of unions affiliated with the BCTC which become signatory to such collective bargaining agreements, provided, however, that any such employees whose qualifications allow them to enter unions as journeypersons shall be counted toward the fulfillment of this percentage.
6. To help reach the goals set forth in paragraph 3, 4, and 5, the City, the BCTC and the BTEA will work cooperatively to identify and pursue appropriate sources of public and private funds and resources, as needed, to provide pre-apprenticeship training scaled to support the goals targeting at least seven hundred (700) pre-apprenticeship positions cumulatively for all above named direct entry programs each year. The City will help coordinate recruitment within the zip codes and target populations identified in paragraphs 3, 4 and 5.
7. The goals in Paragraphs 3, 4, and 5 are aggregate goals for apprenticeship programs jointly sponsored by the Local Unions and BTEA contractors to achieve on an annual basis through their general recruitments and direct entry programs. The City recognizes that different apprenticeship programs face different circumstances and

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have varying capacities to meet the percentages set forth in each category; notwithstanding that, the BCTC and the BTEA agree to encourage and support meeting the goals in Paragraphs 3, 4, and 5, and to work with apprenticeship programs jointly sponsored by their affiliated unions and contractors to take affirmative steps to achieve that goal.

8. The City, BCTC, and BTEA acknowledge that on federally funded projects NYCHA, and the City on certain federally funded projects, must comply with Executive Order 11246 and federal regulations contained at 24 CFR Part 135 ("Section 3") regarding efforts to employ residents of NYCHA developments and other Section 3 populations.
9. The City, the BCTC, and the BTEA will jointly seek any necessary waivers from NYSDOL with respect to direct entry goals for the joint apprentice programs, as well as jointly support and encourage 100% participation of all affiliated joint apprentice programs.

10. Reporting.

- a. Each Local Union shall provide, or cause to be provided by their Apprentice Directors, copies of the following reports to WKDEV within thirty (30) days of the submission to NYSDOL:
 - i. *Apprentice Training Recruitment Notification and Minimum Qualifications (AT 505)* submissions to NYSDOL;
 - ii. *Apprentice Training Program Affirmative Action Plan (AT 603)* submissions to NYSDOL; and
 - iii. *Apprenticeship Agreement (AT 401)* submissions to NYSDOL.
- b. Pre-apprenticeship programs funded in part by the City will provide quarterly reports, beginning at the end of the first quarter after the first class is held, to the WKDEV with detailed information as required by NYC's Workforce Common Metrics reporting for all individuals trained in all classes.
- c. On an annual basis, beginning on January 1, 2021, the City shall provide an electronic report to the BCTC that contains a list of contracts registered in the previous full fiscal year that were subject to either a City Project Labor Agreement or the Apprenticeship Directive. Such list shall contain the following for each contract:
 - i. contracting agency
 - ii. contract name;
 - iii. prime contractor name;
 - iv. registered dollar amount; and
 - v. date of registration.
- d. Upon mutual agreement, the parties may modify these reporting requirements, as needed.

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11. **City of New York Apprenticeship Directive.** As a means of expanding the pool of work available to apprentices and graduates of state-approved apprenticeship programs providing opportunities to the groups of individuals designated in Paragraphs 3 and 5 above, the City states its intention to implement, as may be amended from time to time, the Directive, attached as Exhibit A. The Directive directs City agencies, for construction contracts where either (i) the cost estimate of the contract exceeds \$3 million, or (ii) the cost estimate of the contract exceeds \$2 million on a project with a cost estimate of at least \$5 million, and for such other contracts as the bidding agency determines to be appropriate, to require the contractor and any of its subcontractors with subcontracts worth at least \$2 million to have apprenticeship agreements appropriate for the type and scope of work to be performed that have been registered with, and approved by, the New York State Commissioner of Labor, and shall have passed any required probationary period and recertification established by the New York State DOL.
12. The City shall include a statement concerning the applicability of the Directive in every City Record notice of the solicitation or award of a contract for a public works project. Within five (5) days of the issuance of any waiver from the apprenticeship requirement, the City shall notify the BCTC and the BTEA, in writing or electronically, of the granting of such waiver and the reasons therefore.
13. The City, the BCTC, and the BTEA look forward to working together and with the contractor community in a spirit of cooperation and good will toward the goal that all New Yorkers from diverse backgrounds, particularly minorities, women, returning veterans, recent public high school graduates, NYCHA residents, individuals in need of economic opportunity, and justice-involved individuals, are well-prepared for participation in the workforce and can gain access to good careers in the construction industry, in both the private and public sectors.

For the City of New York

By: _____

First Deputy Mayor, Dean Fuleihan

For Building and Construction Trades Council of Greater New York and Vicinity

By: _____

Gary LaBarbera, President

For Building Trades Employers' Association of New York City

By: _____

Louis J. Coletti, President & CEO

SCHEDULE “B” - DRUG AND ALCOHOL POLICY

PREAMBLE

WHEREAS, [CONSTRUCTION MANAGER] (“Construction Manager”), for the construction project located at [PROJECT ADDRESS] (“Project”) desires to provide for a safe, drug and alcohol-free work site for the Project;

WHEREAS, the parties have entered into a separate Project Labor Agreement for the Project and have agreed to negotiate in good faith a Project Drug & Alcohol Testing Policy;

WHEREAS, this Testing Policy is collectively negotiated between the Construction Manager and the New York City Building and Construction Trades Council (“Council”) (the Construction Manager and BCTC are collectively referred to hereafter as the “Parties”);

WHEREAS, the Parties each currently have respective drug and alcohol policies, including the Projects' Zero-Tolerance policy;

WHEREAS, the Parties desire to maximize project safety conditions for the Project personnel and public, as well as deter violations of the Parties' respective drug and alcohol policies;

NOW, THEREFORE, the Parties agree to this Policy as of the date hereof,

ARTICLE 1 - PARTIES

This Drug & Alcohol Testing Policy (“Policy”) is hereby established by the Construction Manager and the Council, on behalf of itself and its affiliated local union members, and the signatory local unions on behalf of themselves and their members.

ARTICLE 2-GENERAL CONDITIONS

SECTION 2.1 - SUMMARY

In order to reinforce the Parties' respective drug and alcohol policies, including the Projects' zero tolerance policy regarding the prohibition of the use of drugs and alcohol, and to deter Project personnel from violating those policies, the Parties agree that all Project Personnel (defined later) will be required to submit to drug and/or alcohol testing randomly, post-accident, and for reasonable suspicion.

Any individual on site that violates this Policy is subject to disciplinary action, including, without limitation, loss of site access privileges.

SECTION 2.2 - REVOCATION OF PROJECT ACCESS PRIVILEGES

Any one of the following occurrences will result in the immediate revocation of a Project Personnel's project access privileges:

1. An individual is found selling or using drugs or alcohol, or otherwise is under the influence of drugs or alcohol, subject to the other terms of this Policy, on a Project Site;
2. An individual has been convicted under any criminal drug or alcohol

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statute for a violation occurring in the workplace within the past two years;

3. An individual who refuses to abide by the Projects' drug and alcohol policy, or refuses to submit to a test in accordance with this Policy;
4. An individual who switches, adulterates, or in any way tampers with a specimen required to be submitted in accordance with this Policy.

SECTION 2.3 - DEFINITIONS

Confirmed Positive Test: The presence of drugs, drug metabolites, or alcohol in a person's body that equals or exceeds the established cut off levels as defined in Exhibit 1. For drugs, the sample will have undergone Laboratory screening and confirmation testing and must have been verified as positive by a Medical Review Officer. A positive test result for alcohol obtained through Evidential Breath Testing is considered a Confirmed Positive Test.

Employee Assistance Program (EAP): An EAP is generally considered a workplace-based, confidential program designed to help employees deal effectively with a variety of personal problems, and, of relevance to this policy, substance abuse problems. The EAP promotes assessments and short-term counseling. An EAP shall also include any similar education or rehabilitation program provided by the Councilor its respective members. The Project Personnel that are required to participate in the EAP shall be responsible for the cost of their consultation with an EAP and/or participation in any education or rehabilitation program.

Evidential Breath Testing Device (EBT): A device that is used to measure alcohol in the breath and which meets National Highway Traffic Safety Administration's specifications for precision and accuracy.

Laboratory: A laboratory that is SAMHSA (Substance Abuse and Mental Health Services Administration) certified for the testing of drugs.

Medical Review Officer (MRO): A licensed physician responsible for receiving laboratory results generated by an employer's drug testing plan who has knowledge of substance abuse disorders and medical training to interpret and evaluate a donor's confirmed positive test result together with his/her medical history and all other relevant information.

Previous Worker: All individuals whose employment relationship with the contractor, company or organization no longer exists.

Project Site: The construction area for respective Project.

Reasonable Suspicion: When a qualified trade contractor, the Developer or Construction Manager as set forth in Section 3.7, reasonably believes that an individual has violated this Policy. Reasonable suspicion is based upon (1) specific, current, behavioral or performance indicators, (2) the possible manufacture, distribution, consumption or possession of unauthorized drugs, drug paraphernalia, or alcohol, or (3) documented investigation by an agency retained by, or otherwise independent from, the Developer or Construction Manager.

SECTION 2.4 - INCLUDED SUBJECTS

This Policy shall cover all employees of the Owner, Construction Manager and Project

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trade contractors, their subcontractors and any other of their respective personnel at any level that are performing any activity at a Project Site, inclusive of managers, superintendents and supervisors, except as specifically excluded by Section 2.5 of this Policy (collectively and singularly, "Project Personnel").

SECTION 2.5 - EXCLUDED SUBJECTS

The following persons are not subject to the provisions of this Policy:

- A. Employees and entities engaged in off-site manufacture, modifications, repair, maintenance, assembly, painting, handling or fabrication of components, materials, equipment or machinery;
- B. Vendors and employees of vendors engaged on a Project Site in equipment testing, inspection, training, warranty work, or engaged in corrections of defective or nonconforming work, unless such employees are expressly included in the bargaining unit of a local signatory to this Agreement;
- C. Employees engaged in ancillary work on a Project which is performed by third parties, such as electric utilities, gas utilities, telephone companies, and railroads, or any other work not constituting Project work;
- D. Employees of any governmental authority (state, local or otherwise);
- E. Employees and contractors engaged in work on the Project Site as part of due diligence or monitoring, which work is ancillary to Project work; and
- F. Emergency responders.

SECTION 2.6 - PRESCRIPTION AND NON-PRESCRIPTION DRUGS

The use of prescription drugs not prescribed directly to Project Personnel is prohibited, including the use of drugs prescribed to a spouse or domestic partner. The use of non-prescription drugs that are sold outside the United States and that contain substances that are illegal or require a prescription in the United States are prohibited, unless prescribed by a licensed physician.

SECTION 2.7 - SEARCHES

In order for the Construction Manager to ensure the safety of Project Personnel and for the Construction Manager to protect its assets, the Construction Manager shall have the right upon good cause (such as reasonable suspicion of a violation of this Policy) to conduct reasonable searches for alcohol, drugs and related paraphernalia anywhere within the boundaries of a Project Site. A search may include any assets owned or leased by any Project Personnel that is on a Project Site, including without limitation, vehicles, lockers, gang boxes, desks and personal property brought onto a Project Site, but excluding personal body searches or physical contact with employees.

ARTICLE 3 - DRUG & ALCOHOL TESTING

SECTION 3.1 - COLLECTION PROCESS

As of the execution date of this PLA, Project Personnel may be required to submit urine samples ("Preliminary Drug Screening") for the purpose of detecting the presence of drugs as part of the random, post-accident or reasonable suspicion testing, in accordance with

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chain of custody protocols as established by Substance Abuse and Mental Health Services Administration (SAMHSA), utilizing an instant result test cup for Preliminary Drug Screenings, such testing is to be performed on-site by an independent service provider. The results from the instant result test cup will be considered preliminary. The sample will be sent to a SAMHSA certified testing laboratory for confirmation.

As of the date hereof, all Project Personnel will be required to submit to an Evidential Breath Test (EBT) for the purpose of detecting the presence of alcohol when submitting to random, post-accident or reasonable suspicion testing. Alcohol testing will not be conducted for pre-access testing.

SECTION 3.2 - NEGATIVE PRELIMINARY DRUG SCREENING

Project Personnel with a negative Preliminary Drug Screening will be considered conditionally accepted for Project site access, pending confirming laboratory results. Site access privileges will be revoked if the subsequent laboratory results determine that the sample has tested positive for drugs or that the sample has been adulterated.

SECTION 3.3 POSITIVE PRELIMINARY DRUG SCREENING

If the Preliminary Drug Screening indicates a positive result, the individual will not be allowed access to the Project Site. The sample will be sent to the certified laboratory for analysis and, if applicable, reviewed by the Medical Review Officer (MRO). If the laboratory confirmation results are also positive, the individual will be considered in violation of this Policy and their site access will be revoked for at least 30 days. If the laboratory confirmation results are negative, the Project Personnel's site access will not be revoked.

SECTION 3.4 CONFIRMED POSITIVE TEST RESULTS

A. POSITIVE DRUG TEST

A drug test is considered positive if the test results exceed the limits shown in Exhibit 1, which is attached hereto and incorporated herein by reference. The test will be confirmed through a second analysis process and reviewed by an MRO before results are reported. Project Personnel with confirmed positive drug test results will have their site access revoked. In case of a "false positive" result, any such Personnel shall be entitled to the reimbursement of any wages lost during the suspension caused by any such false positive result.

B. POSITIVE EBT

An EBT is considered positive if the test results exceed .04 BrAC, or as otherwise set forth in Exhibit 1. Project Personnel with a positive alcohol test result will be subject to the remedies set forth in Exhibit 1.

C. REINSTATEMENT OF SITE ACCESS PRIVILEGES

(a) Subject to section 3.4(C)(a) immediately below, if the site access of a Project Personnel has been revoked pursuant to this Policy, then any such person may request that their site access be reinstated after 30 days, provided that all of the following conditions are met to the reasonable satisfaction of the Construction Manager. :

1. The individual has provided proof of wellness from an accredited rehabilitation

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facility or has provided proof that treatment isn't needed as attested to by a licensed health care provider specializing in the diagnosis and treatment of alcohol and drug abuse.

2. A current drug and alcohol test is obtained within three (3) days of the request for re-access to the site and proof of a negative test result has been received; and
3. The individual agrees to submit to multiple testing for two (2) full years from the date of gaining re-access to the project, the scheduling of which will be determined at the sole discretion of the Construction Manager. If all of these conditions have been met, the Construction Manager agrees that it will not unreasonably withhold their consent to any such request.

(b) Unlawful possession, concealment, use, purchase, sale, manufacture, dispensation or distribution of illegal drugs or un-prescribed controlled substances on the Project site will subject the Project Personnel Employee to immediate removal from the Project site and shall bar such Project Personnel Employee from returning for a minimum of three (3) months, which return shall, in any event, be subject to the reasonable approval by Construction Manager.

(c) All of the Parties agree that any such Project Personnel will only be entitled to any such reinstatement of site access privileges one time and that any subsequent violation of this Policy will result in the permanent termination of access to the Project Site.

SECTION 3.5 - RANDOM TESTING

A third-party provider designated by the Construction Manager will randomly select by an objective criteria a testing pool for random drug and/or alcohol testing from all Project Personnel with site access cards. Any individual selected for a random drug and/or alcohol test will be required to submit to an Evidential Breath Test (EBT) and/or drug test. Individuals may be tested more than once during any given time period. The Parties acknowledge and agree that an EBT may be required without a drug test and that a drug test may be required without an EBT, as solely determined by the Construction Manager.

If an individual is unable to attend the first scheduled random drug test as a result of being involved in a work-related task, such drug test will be rescheduled and will be completed at or before the conclusion of such employee's then current work shift. If the second drug test is missed for any reason, the incident will be reviewed by the Construction Manager, who shall have the right to terminate the site access privileges of any such Project Personnel until such time as that Project Personnel has complied with this Policy. If the individual refuses to take the test, their access privileges will be immediately terminated for cause.

SECTION 3.6 - POST ACCIDENT TESTING

After each work-related incident or injury requiring the services of a licensed health care provider, all Project Personnel involved with the incident will be required to submit to a drug and/or alcohol test immediately following the incident. In instances where emergency care is necessary, the drug and/or alcohol test shall be obtained by the care facility, if possible, within 24 hours after treatment is rendered. If more than 48 hours have passed before an injury is reported and treated by a licensed health care provider, an alcohol test will not be required.

In addition, any Project Personnel involved in a non-injury related incident at a Project Site

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with damages at or in excess of \$200 will be required to submit to a drug and/or alcohol test unless:

- A. It is determined, after conducting an investigation and interviewing all employees involved and any witnesses, that the employee's performance can be completely discounted as a contributing factor to the incident; or
- B. It is determined, after conducting an incident investigation and interviewing all employees and any witnesses that the incident was caused by inadequate equipment or system design, and/or premature failure of equipment or system components.

SECTION 3.7 - REASONABLE SUSPICION TESTING

All Project Personnel will be required to submit to a drug and/or alcohol test when there is reasonable suspicion the individual has violated this policy.

Reasonable suspicion includes, without limitation, the following:

- A. Violent or irrational behavior;
- B. Emotional or physical unsteadiness;
- C. Sensory or motor-skill malfunctions;
- D. Slurred speech;
- E. The odor of alcohol or drugs on clothing or breath in conjunction with other indicators;
- F. Possession of alcohol, unauthorized drugs or drug paraphernalia; or
- G. Documented evidence of an independent investigation regarding Project Personnel's consumption of what is reasonably believed to be an alcoholic beverage or drugs in violation of the Project's policies and/or this Policy.

Reasonable suspicion testing may only be ordered by supervisory personnel that: (a) have been trained to recognize the above referenced factors; or (b) have received credible documentary evidence from an independent investigator that a Project Personnel has violated a drug and/or alcohol policy. It is agreed that any certified training program shall satisfy the training requirement.

SECTION 3.8 - PRIVACY CONSIDERATIONS

The Parties agree to use reasonable efforts to conduct any testing pursuant to this Policy in accordance with the privacy concerns of Project Personnel. To address these concerns, the Parties agree that:

- 1. The testing station(s) shall be screened off, or otherwise closed off from public view.
- 2. All documents and information regarding the testing, including test results, shall be maintained by the respective custodian(s) of record in accordance with their respective privacy policies, which any Project Personnel shall be entitled to review upon timely request.

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3. The Parties agree to make a good faith effort to resolve any other privacy concern of Project Personnel regarding this Policy, provided that any such concerns do not interfere with the purpose of this Policy.

ARTICLE 4 – GRIEVANCE

SECTION 4.1 - REPRESENTED WORKERS

Nothing in this Policy shall restrict a member of a signatory local union from filing a grievance in accordance with the member's collective bargaining agreement or a Project Labor Agreement, provided that the grievance shall be limited to whether the removal of a member for violation of this Policy was conducted in compliance with the terms and conditions set forth herein.

SECTION 4.2 - HOLD HARMLESS

The Construction Manager agrees to hold harmless and indemnify the Union/Council and its representatives from any liability that may be incurred as a result of the Company's Drug and Alcohol Policy to the extent caused by the negligence or intentional misconduct of the Construction Manager.

IN WITNESS WHEREOF the parties have agreed to this Policy as of _____, 20__.

FOR [CONSTRUCTION MANAGER]

By: _____

Name: [INSERT NAME] _____

Title: [INSERT TITLE] _____

FOR GREATER NEW YORK CITY BUILDING TRADES COUNCIL

By: _____

Name: Gary LaBarbera _____

Title: President

EXHIBIT 1**CLASS OF DRUGS TESTED AND THEIR RESPECTIVE CUT-OFF LIMITS**

The cut-off limits established are those recommended by the U.S. Department of Health and Human Services in their mandatory Guidelines for Federal Workplace Drug Testing Programs.

	Screening	Confirmation
	Cut-Off	Cut-off
<u>Drug Class</u>	<u>Limit (ng/ml)</u>	<u>Limit (ng/ml)</u>
Amphetamines	1000	500
Benzoylcegonine (Cocaine Metabolite)	300	150
Cannabinoids (THC)	50	15
*Opiates	2000	10
Phencyclidine (PCP)	25	25

Confirmation screening is done by means of GC/MS analysis.

*The GC/MS confirmation for opiates will be for both codeine and morphine separately. If morphine is equal to or greater than 2,000ng/ml then the GC/MS confirmation analysis for 6- acetylmorphine (6-MAM) is at a cut-off level of 10ng/ml.

Alcohol Screening

All Project Personnel will be required to submit to an EBT under the random, post-accident, and reasonable suspicion test arenas, for the purpose of detecting presence of alcohol. If this test supports a positive result for presence of alcohol, the Project Personnel will be considered in violation of this Policy.

If the results of the EBT are:

1. Above 0.001 BrAC, but at or below 0.020 BrAC, a second test will be conducted within approximately 15 minutes.
 - If the second BrAC test is less than the first BrAC, the results will be deemed negative and the Project Personnel may return to work, if there are no other outstanding issues.
 - If the second BrAC is increasing, but below 0.04 BrAC, the results will be deemed negative, but the Project Personnel will be sent home for the day and the Construction Manager shall be notified. If a Project Personnel is sent home two times within a six-month period pursuant to this Section I, then any such Project Personnel shall be deemed to have tested positive and will be subject to the applicable remedies set forth in Section 2 below.
2. Above 0.02 BrAC, but below 0.06 BrAC, a second test will be conducted after approximately 15 minutes.

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- Notwithstanding anything set forth above to the contrary, a Project Personnel may elect to voluntarily go home for the day instead of taking a second test and the results will be deemed negative, provided that any such Project Personnel may not voluntarily go home more than once within a twelve month period.
 - If the second BrAC test is at or below 0.02 BrAC, the results will be deemed negative and the Project Personnel may return to work if there are no other outstanding issues.
 - If the second BrAC test is above 0.020, but below 0.06, the results will be deemed positive, the Project Personnel will be sent home for the day and their site access will be revoked for at least five [5] calendar days and until such time as the Project Personnel has been evaluated by an EAP professional skilled in substance abuse and confirmed fit for duty.
 - Any Project Personnel who is deemed positive two times within two years pursuant to this Section 2 will have their site access privileges terminated and will be entitled to the limited relief set forth in Section 3 .4(c) of the Policy.
3. At or above .06 BrAC, the Project Personnel will have their site access privileges terminated, after which they will be entitled to the limited relief set forth in Section 3.4(C) of the Policy.

CITY OF NEW YORK
DEPARTMENT OF
DESIGN AND CONSTRUCTION
DIVISION OF PUBLIC BUILDINGS

INFORMATION FOR BIDDERS

JULY 2019

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*CITY OF NEW YORK CITY
DEPARTMENT OF DESIGN AND CONSTRUCTION
INFORMATION FOR BIDDERS*

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INFORMATION FOR BIDDERS

1. Description and Location of Work

The description and location of the work for which bids are requested are specified in Attachment 1, "Bid Information". Attachment 1 is included in the BID BOOKLET, VOLUME 1 OF 3.

2. Time and Place for Receipt of Bids

Sealed bids shall be received on or before the date and hour specified in Attachment 1, at which time they will be publicly opened and read aloud in the presence of the Commissioner or his or her representative, and any bidders who may desire to be present.

3. Definitions

The definitions set forth in the Procurement Policy Board Rules shall apply to this Invitation For Bids.

4. Invitation For Bids and Contract Documents

(A) Except for titles, sub-titles, headings, running headlines, tables of contents and indices (all of which are printed herein merely for convenience) the following, except for such portions thereof as may be specifically excluded, shall be deemed to be part of the Contract and the Invitation for Bids.

- (1) All provisions required by law to be inserted in this Contract, whether actually inserted or not
- (2) The Contract Drawings and Specifications
- (3) The General Conditions, the General Requirements and the Special Conditions, if any
- (4) The Contract
- (5) The Information for Bidders; Request for Proposals; Notice of Solicitation and Proposal For Bids; Bid or Proposal, and, if used, the Bid Booklet
- (6) The Budget Director's Certificate; all Addenda issued prior to the receipt of the bids; the Notice of Award; Performance and Payment Bonds, if required; and the Notice to Proceed with the Work.

(B) For particulars as to this procurement, including quantity and quality of the purchase, extent of the work or labor to be performed, delivery and performance schedule, and any other special instructions, prospective bidders are referred to the Invitation For Bids Documents. A copy of such documents can be obtained at the location set forth in Attachment 1.

(C) Deposit for Copy of Invitation For Bids Documents: Prospective bidders may obtain a copy of the Invitation For Bids Documents by complying with the conditions set forth in the Notice of Solicitation. The deposit must be in the form of a check or money order made payable to the City of New York, and drawn upon a state or national bank or trust company, or a check of such bank or trust company signed by a duly authorized officer thereof.

(D) Return of Invitation For Bids Documents: All Invitation For Bids Documents must be returned to the Department upon request. If the bidder elects not to submit a bid thereunder, the Invitation For Bids Documents shall be returned to the Department, along with a statement that no bid will be submitted.

(E) Return of Deposit: Such deposit will be returned within 30 days after the award of the contract or the rejection of all bids as set forth in the advertisement, provided the Invitation For Bids Documents are returned to the location specified in Attachment 1, in physical condition satisfactory to the Commissioner.

(F) Additional Copies: Additional copies of the Invitation For Bids Documents may be obtained, subject to the conditions set forth in the advertisement for bids.

5. Pre-Bid Conference

A pre-bid conference shall be held as set forth in Attachment 1. Nothing stated at the pre-bid conference shall change the terms or conditions of the Invitation For Bids Documents, unless a change is made by written amendment as provided in Section 9 below. Failure to attend a mandatory pre-bid conference shall constitute grounds for the rejection of the bid.

6. Agency Contact

Any questions or correspondence relating to this bid solicitation shall be addressed to the Agency Contact person specified in Attachment 1.

7. Bidder's Oath

(A) The bid shall be properly signed by an authorized representative of the bidder and the bid shall be verified by the written oath of the authorized representative who signed the bid, that the several matters stated and information furnished therein are in all aspects true.

(B) A materially false statement willfully or fraudulently made in connection with the bid or any of the forms completed and submitted with the bid may result in the termination of any Contract between the City and the Bidder. As a result, the Bidder may be barred from participating in future City contracts as well as be subject to possible criminal prosecution.

8. Examination and Viewing of Site, Consideration of Other Sources of Information and Changed Conditions

(A) Pre-Bidding (Investigation) Viewing of Site - Bidders must carefully view and examine the site of the proposed work, as well as its adjacent area, and seek other usual sources of information, for they will be conclusively presumed to have full knowledge of any and all conditions on, about or above the site relating to or affecting in any way the performance of the work to be done under the Contract which were or should have been indicated to a reasonably prudent bidder. To arrange a date for visiting the work site, bidders are to contact the Agency Contact person specified in Attachment 1.

(B) Should the contractor encounter during the progress of the work subsurface conditions at the site materially differing from any shown on the Contract Drawings or indicated in the Specifications or such subsurface conditions as could not reasonably have been anticipated by the contractor and were not anticipated by the City, which conditions will materially affect the cost of the work to be done under the Contract, the attention of the Commissioner must be called immediately to such conditions before they are disturbed. The Commissioner shall thereupon promptly investigate the conditions. If he finds that they do so materially differ, or that they could not reasonably have been anticipated by the contractor and were not anticipated by the City, the Contract may be modified with his written approval.

9. Examination of Proposed Contract

(A) Request for Interpretation or Correction: Prospective bidders must examine the Contract Documents carefully and before bidding must request the Commissioner in writing for an interpretation or correction of every patent ambiguity, inconsistency or error therein which should have been discovered by a reasonably prudent bidder. Such interpretation or correction, as well as any additional contract provisions the Commissioner may decide to include, will be issued in writing by the Commissioner as an addendum to the Contract, which will be transmitted to each person recorded as having received a copy of the Contract Documents from the Department. Transmission of such addendum will be by mail, e-mail, facsimile or hand delivery. Such addendum will also be posted at the place where the Contract Documents are available for the inspection of prospective bidders. Upon transmission as provided for herein, such addendum shall become a part of the Contract Documents, and binding on all bidders, whether or not actual notice of such addendum is shown.

(B) Only Commissioner's Interpretation or Correction Binding: Only the written interpretation or correction so given by the Commissioner shall be binding, and prospective bidders are warned that no other officer, agent or employee of the City is authorized to give information concerning, or to explain or interpret, the Contract.

(C) Documents given to a subcontractor for the purpose of soliciting the subcontractor's bid shall include either a copy of the bid cover sheet or a separate information sheet setting forth the project name, the Contract number (if available), the contracting agency and the Project's location.

10. Form of Bid

Each bid must be submitted upon the prescribed form and must contain: a) the name, residence and place of business of the person or persons making the same; b) the names of all persons interested therein, and if no other person is so interested, such fact must be distinctly stated; c) a statement to the effect that it is made without any connection with any other person making a bid for the same purpose and that it is in all respects fair and without collusion or fraud; d) a statement that no Council member or other officer or employee or person whose salary is payable in whole or part from the City Treasury is directly or indirectly interested therein or in the supplies, materials or equipment and work or labor to which it relates, or in any portion of the profits thereof; e) a statement that the bidder is not in arrears to the City or to any agency upon a debt or contract or taxes, and is not a defaulter as surety or otherwise upon any obligation to the City to any agency thereof, except as set forth in the bid.

THE BID SHALL BE TYPEWRITTEN OR WRITTEN LEGIBLY IN INK. THE BID SHALL BE SIGNED IN INK. ERASURES OR ALTERATIONS SHALL BE INITIALED BY THE SIGNER IN INK. FAILURE TO CONFORM TO THE REQUIREMENTS OF THIS SECTION 10 SHALL RESULT IN THE REJECTION OF THE BID.

11. Irrevocability of Bid

The prices set forth in the bid cannot be revoked and shall be effective until the award of the Contract, unless the bid is withdrawn as provided for in Sections 15 and 18 below.

12. Acknowledgment of Amendments

The receipt of any amendment to the Contract Documents shall be acknowledged by the bidder in its bid submission.

13. Bid Samples and Descriptive Literature

Bid samples and descriptive literature shall not be submitted by the bidder, unless expressly requested elsewhere in the Contract or Contract Documents. Any unsolicited bid samples or descriptive literature which are submitted shall not be examined or tested and shall not be deemed to vary any of the provisions of this Contract.

14. Proprietary Information/Trade Secrets

(A) The bidder shall identify those portions of the bid which it deems to be confidential, proprietary information or trade secrets, and provide justification why such materials shall not be disclosed by the City. All such materials shall be clearly indicated by stamping the pages on which such information appears, at the top and bottom thereof with the word "Confidential". Such materials stamped "Confidential" must be easily separable from the non-confidential sections of the bid.

(B) All such materials so indicated shall be reviewed by the Agency and any decision not to honor a request for confidentiality shall be communicated in writing to the bidder. For those bids which are unsuccessful, all such confidential materials shall be returned to the bidder. Prices, makes and model or catalog numbers of the items offered, deliveries, and terms of payment shall be publicly available after bid opening, regardless of any designation of confidentiality made by the bidder.

15. Pre-Opening Modification or Withdrawal of Bids

Bids may be modified or withdrawn by written notice received in the office designated in Attachment 1, before the time and date set for the bid opening. If a bid is withdrawn in accordance with this Section, the bid security, if any, shall be returned to the bidder.

16. Bid Evaluation and Award

In accordance with the New York City Charter, the Procurement Policy Board Rules and the terms and conditions of this Invitation For Bids, this Contract shall be awarded, if at all, to the responsible bidder whose bid meets the requirements and evaluation criteria set forth in the Invitation For Bids, and whose bid price is either the most favorable bid price or, if the Invitation For Bids so states, the most favorable evaluated bid price. A bid may not be evaluated for any requirement or criterion that is not disclosed in the Invitation For Bids.

Restriction: No negotiations with any bidder shall be allowed to take place except under the circumstances and in the manner set forth in Section 21. Nothing in this Section shall be deemed to permit a contract award to a bidder submitting a higher quality item than that designated in the Invitation For Bids, if that bid is not also the most favorable bid.

17. Late Bids, Late Withdrawals and Late Modifications

Any bid received at the place designated in the solicitation after the time and date set for receipt of bids is late and shall not be considered. Any request for withdrawal or modification received at the place designated in the solicitation after the time and date set for receipt of bids is late and shall not be considered. The exception to this provision is that a late modification of a successful bid that makes the bid terms more favorable to the City shall be considered at any time it is received.

18. Withdrawal of Bids.

Except as provided for in Section 15, above, a bidder may not withdraw its bid before the expiration of forty-five (45) days after the date of the opening of bids; thereafter, a bidder may withdraw its bid only in writing and in advance of an actual award. If within sixty (60) days after the execution of the Contract, the Commissioner fails to fix the date for commencement of work by written notice to the bidder, the bidder, at his option, may ask to be relieved of his obligation to perform the work called for by written notice to the Commissioner. If such notice is given to the Commissioner, and the request to withdraw is granted, the bidder waives all claims in connection with this Contract.

19. Mistake in Bids

(A) Mistake Discovered Before Bid Opening: A bidder may correct mistakes discovered before the time and date set for bid opening by withdrawing or correcting the bid as provided in Section 15 above.

(B) Mistakes Discovered Before Award

(1) In accordance with General Municipal Law (Section 103, subdivision 11), where a unilateral error or mistake is discovered in a bid, such bid may be withdrawn upon written approval of the Agency Chief Contracting Officer if the following conditions are met:

- (a) The mistake is known or made known to the agency prior to the awarding of the Contract or within 3 days after the opening of the bid, whichever period is shorter; and
- (b) The price bid was based upon an error of such magnitude that enforcement would be unconscionable; and
- (c) The bid was submitted in good faith and the bidder submits credible evidence that the mistake was a clerical error as opposed to a judgment error; and
- (d) The error in the bid is actually due to an unintentional and substantial arithmetic error or an unintentional omission of a substantial quantity of work, labor, material or services made directly

in the compilation of the bid, which unintentional arithmetic error or unintentional omission can be clearly shown by objective evidence drawn from inspection of the original work paper, documents, or materials used in the preparation of the bid sought to be withdrawn; and

- (e) It is possible to place the agency in the same position as existed prior to the bid.

(2) Unless otherwise required by law, the sole remedy for a bid mistake in accordance with this Article shall be withdrawal of the bid, and the return of the bid bond or other security, if any, to the bidder. Thereafter, the agency may, in its discretion, award the Contract to the next lowest bidder or rebid the Contract. Any amendment to or reformation of a bid or a Contract to rectify such an error or mistake therein is strictly prohibited.

(3) If the mistake and the intended correct bid are clearly evident on the face of the bid document, the bid shall be corrected to the intended correct bid and may not be withdrawn. Examples of mistakes that may be corrected are typographical errors, errors in extending unit prices, transposition errors and arithmetical errors.

20. Low Tie Bids

(A) When two or more low responsive bids from responsible bidders are identical in price, meeting all the requirements and criteria set forth in the Invitation For Bids, the Agency Chief Contracting Officer will break the tie in the following manner and order of priority:

- (1) Award to a certified New York City small, minority or woman-owned business entity bidder;
- (2) Award to a New York City bidder;
- (3) Award to a certified New York State small, minority or woman-owned business bidder;
- (4) Award to a New York State bidder.

(B) If two or more bidders still remain equally eligible after application of paragraph (A) above, award shall be made by a drawing by lot limited to those bidders. The bidders involved shall be invited to attend the drawing. A witness shall be present to verify the drawing and shall certify the results on the bid tabulation sheet.

21. Rejection of Bids

(A) Rejection of Individual Bids: The Agency may reject a bid if:

- (1) The bidder fails to furnish any of the information required pursuant to Section 24 or 28 hereof; or if
- (2) The bidder is determined to be not responsible pursuant to the Procurement Policy Board Rules; or if
- (3) The bid is determined to be non-responsive pursuant to the Procurement Policy Board Rules; or if
- (4) The bid, in the opinion of the Agency Chief Contracting Officer, contains unbalanced bid prices and is thus non-responsive, unless the bidder can show that the prices are not unbalanced for the probable required quantity of items, or if the imbalance is corrected pursuant to Section 15.

(B) Rejection of All Bids: The Agency, upon written approval by the Agency Chief Contracting Officer, may reject all bids and may elect to resolicit bids if in its sole opinion it shall deem it in the best interest of the City so to do.

(C) Rejection of All Bids and Negotiation With All Responsible Bidders: The Agency Head may determine that it is appropriate to cancel the Invitation For Bids after bid opening and before award and to complete the acquisition by negotiation. This determination shall be based on one of the following reasons:

- (1) All otherwise acceptable bids received are at unreasonable prices, or only one bid is received and the Agency Chief Contracting Officer cannot determine the reasonableness of the bid price, or no responsive bid has been received from a responsible bidder; or
- (2) In the judgment of the Agency Chief Contracting Officer, the bids were not independently arrived at in open competition, were collusive, or were submitted in bad faith.

(D) When the Agency has determined that the Invitation for Bids is to be canceled and that use of negotiation is appropriate to complete the acquisition, the contracting officer may negotiate and award the Contract

without issuing a new solicitation, subject to the following conditions:

- (1) prior notice of the intention to negotiate and a reasonable opportunity to negotiate have been given by the contracting officer to each responsible bidder that submitted a bid in response to the Invitation for Bids;
- (2) the negotiated price is the lowest negotiated price offered by a responsible bidder; and
- (3) the negotiated price is lower than the lowest rejected bid price of a responsible bidder that submitted a bid in response to the Invitation for Bids.

22. Right to Appeal Determinations of Non-Responsiveness or Non-Responsibility and Right to Protest Solicitations and Award

The bidder has the right to appeal a determination of non-responsiveness or non-responsibility and has the right to protest a solicitation and award. For further information concerning these rights, the bidder is directed to the Procurement Policy Board Rules.

23. Affirmative Action and Equal Employment Opportunity

This Invitation For Bids is subject to applicable provisions of Federal, State and Local Laws and executive orders requiring affirmative action and equal employment opportunity.

24. PASSPort COMPLIANCE

All vendors that intend to do business with the City of New York must complete a disclosure process in order to be considered for a contract. This disclosure process was formerly completed using Vendor Information Exchange System (VENDEX) paper-based forms. The City of New York has moved collection of vendor disclosure information online. In early August 2017, the New York City Mayor's Office of Contract Services (MOCS) launched the Procurement and Sourcing Solutions Portal (PASSPort), a new online procurement system that replaced the paper-VENDEX process. In anticipation of awards, all bidders must create online accounts in the new PASSPort system, and file all disclosure information using PASSPort. Paper submissions, including certifications of no changes to existing VENDEX packages, will not be accepted in lieu of complete online filings using PASSPort.

All vendors that intend to do business with the City, but specifically those that fall into any of the following categories, are required to enroll:

- Have a pending award with a City Agency; or
- Hold a current contract with a City Agency and have either an expiring VENDEX or expiring Certificate of No Change.

The Department of Design and Construction (DDC) and MOCS hereby notifies all proposers that the PASSPort system is available, and that disclosure filing completion is required prior to any award through this competitive bid.

To enroll in PASSPort and to access the PASSPort website (including online training), please visit www.nyc.gov/passport. Contact MOCS at passport@mocs.nyc.gov for additional information and technical support.

25. Complaints About the Bid Process

The New York City Comptroller is charged with the audit of contracts in New York City. Any vendor who believes that there has been unfairness, favoritism or impropriety in the bid process should inform the Comptroller, Office of Contract Administration, One Centre Street, Room 835, New York, New York; telephone number (212)669-2323.

26. Bid, Performance and Payment Security

(A) Bid Security: Each bid must be accompanied by bid security in an amount and type specified in Attachment 1 (BID BOOKLET, VOLUME 1 OF 3). The bid security shall assure the City of New York of the

adherence of the bidder to its proposal, the execution of the Contract, and the furnishing of Performance and Payment Bonds by the bidder, if required in Attachment 1. Bid security shall be returned to the bidder as follows:

- (1) Within ten (10) days after the bid opening, the Comptroller will be notified to return the deposits of all but the three (3) lowest bidders. Within five (5) days after the award, the Comptroller will be notified to return the deposits of the remaining two unsuccessful bidders.
- (2) Within five (5) days after the execution of the Contract and acceptance of the Contractor's bonds, the Comptroller will be notified to return the bid security of the successful bidder or, if performance and payment bonds are not required, only after the sum retained under Article 21 of the Contract equals the amount of the bid security.
- (3) Where all bids are rejected, the Comptroller will be notified to return the deposit of the three (3) lowest bidders at the time of rejection.

(B) Performance and Payment Security: Performance and Payment Security must be provided in an amount and type specified in Attachment 1. The performance and payment security shall be delivered by the contractor prior to or at the time of execution of the Contract. If a contractor fails to deliver the required performance and payment security, its bid security shall be enforced, and an award of Contract may be made to the next lowest responsible and responsive bidder, or the contract may be rebid.

(C) Acceptable Types of Security: Acceptable types of security for bids, performance, and payment shall be limited to the following:

- (1) a one-time bond in a form satisfactory to the City;
- (2) a bank certified check or money order;
- (3) obligations of the City of New York; or
- (4) other financial instruments as determined by the Office of Construction in consultation with the Comptroller.

Whenever the successful bidder deposits obligations of the City of New York as performance and payment security, the Comptroller may sell and use the proceeds thereof for any purpose for which the principal or surety on such bond would be liable under the terms of the Contract. If the money is deposited with the Comptroller, the successful bidder shall not be entitled to receive interest on such money from the City.

(D) Form of Bonds: Security provided in the form of bonds must be prepared on the form of bonds authorized by the City of New York. Forms for bid, performance, and payment bonds are included in the Invitation for Bids Documents. Such bonds must have as surety thereunder such surety company or companies as are: (1) approved by the City of New York; (2) authorized to do business in the State of New York, and (3) approved by the Department of the Treasury of the United States. Premiums for any required bonds must be included in the base bid.

The bidder is advised that submission of a bid bond where the surety on such bond fails to meet the criteria set forth herein, shall result in the rejection of the bid as non-responsive.

The Department of the Treasury of the United States advises that information concerning approved surety companies may be obtained as follows: (1) from the Government Printing Office at 215-364-6465; (2) through the Internet at <https://www.fiscal.treasury.gov/surety-bonds/>.

(E) Power of Attorney: Attorneys in fact who sign bid, performance, or payment bonds must file with each bond a certified copy of their power of attorney to sign said bonds.

27. Failure to Execute Contract

In the event of failure of the successful bidder to execute the Contract and furnish the required security within ten (10) days after notice of the award of the Contract, the deposit of the successful bidder or so much thereof as shall be applicable to the amount of the award made shall be retained by the City, and the successful bidder shall be liable for and hereby agrees to pay on demand the difference between the price bid and the price for which such Contract shall be subsequently awarded, including the cost of any required reletting and less the amount of such deposit. No plea of mistake in such accepted bid shall be available to the bidder for the recovery of the deposit or as a defense to any action based upon such accepted bid. Further, should the bidder's failure to comply with this Section cause any funding agency, body or group (Federal, State, City, Public, Private, etc.) to terminate, cancel or reduce the funding on this project, the bidder in such event shall be liable also to the City for the amount of actual funding withdrawn by such agency on this project, less the amount of the forfeited deposit.

28. Bidder Responsibilities and Qualifications

(A) Bidders must include with their bids all information necessary for a determination of bidder responsibility, as set forth in the Specifications.

(B) The Agency may require any bidder or prospective bidder to furnish all books of account, records, vouchers, statements or other information concerning the bidder's financial status for examination as may be required by the Agency to ascertain the bidder's responsibility and capability to perform the Contract. If required, a bidder must also submit a sworn statement setting forth such information as the Agency may require concerning present and proposed plant and equipment, the personnel and qualifications of his working organizations, prior experience and performance record.

(C) Oral Examination on Qualifications: In addition thereto, and when directed by the Agency, the bidder, or a responsible officer, agent or employee of the bidder, must submit to an oral examination to be conducted by the Agency in relation to his proposed tentative plan and schedule of operations, and such other matters as the Agency may deem necessary in order to determine the bidder's ability and responsibility to perform the work in accordance with the Contract. Each person so examined must sign and verify a stenographic transcript of such examination noting thereon such corrections as such person may desire to make.

(D) If the bidder fails or refuses to supply any of the documents or information set forth in paragraph (B) hereof or fails to comply with any of the requirements thereof, the Agency may reject the bid.

29. Employment Report

In accordance with Executive Order No. 50 (1980) as modified by Executive Order 108 (1986), the filing of a completed Employment Report (ER) is a requirement of doing business with the City of New York for construction contractors with contracts of \$1,000,000 or more and subcontractors with construction subcontracts of \$750,000 or more. The required forms and information are included in the Bid Booklet.

30. Labor Law Requirements

(A) General: The successful bidder will be required to comply strictly with all Federal, State and local labor laws and regulations.

(B) New York State Labor Law: This Contract is subject to New York State Labor Law Section 220, which requires that construction workers on the site be paid prevailing wages and supplements. The Contractor is reminded that all wage provisions of this Contract will be enforced strictly and failure to comply will be considered when evaluating performance. Noncompliance may result in the contractor being debarred by the City from future contracts. Complaints filed with the Comptroller may result in decisions which may debar a contractor from bidding contracts with any state governmental entity and other political subdivisions.

(C) Records: The Contractor is expected to submit accurate payroll reports and other required documents and verify attendance and job classifications being utilized in compliance with the law, Contract provisions and agency procedures.

31. Insurance

(A) Bidders are advised that the insurance requirements contained herein are regarded as material terms of the Contract. As required by Article 22 of the Contract, the contractor must effect and maintain with companies licensed and authorized to do business in the State of New York, the types of insurance set forth therein, when required by and in the amounts set forth in Schedule A of the General Conditions. Such required insurance must be provided from the date the contractor is ordered to commence work and up to the date of final acceptance of all required work.

(B) The contractor must, within ten days of receipt of the notice of award, submit the following insurance documentation: (a) original certificate of insurance for general liability in the amount required by Schedule A of the General Conditions, and (b) original certificates of insurance or other proof of coverage for workers' compensation and disability benefits, as required by Section 57 of the New York State Workers' Compensation Law and Section 220 of the Disability Benefits Law.

32. Lump Sum Contracts

(A) Comparison of Bids: Bids on Lump Sum Contracts will be compared on the basis of the lump sum price bid, adjusted for alternate prices bid, if any.

(B) Lump Sum Bids for "General Construction Work" which include excavation shall include all necessary excavation work defined in the Specifications as being included in the lump sum bid. The bidder shall also bid a unit price for the additional cost of excavating material which is defined in the Specifications as excavation for which additional payment will be made. The total estimated additional cost of removing such material will be taken as the quantity set forth in the Engineer's Estimate multiplied by the unit price bid. This total estimated cost of additional excavation shall be added to the lump sum bid for the General Construction Work for the purpose of comparing bids to determine the low bidder.

(C) Variations from Engineer's Estimate: The Engineer's Estimate of the quantity of excavation for which additional payment will be made is approximate only and is given solely to be used as a uniform basis for the comparison of bids and such estimate is not to be considered as part of this contract. The quantities actually required to complete the contract work may be more or less than the quantities in the Engineer's Estimate and, if so, no action for damages or for loss of profits shall accrue to the contractor by reason thereof.

33. Unit Price Contracts

(A) Comparison of Bids: Bids on Unit Price Contracts will be compared on the basis of a total estimated price, arrived at by taking the sum of the estimated quantities of such items, in accordance with the Engineer's Estimate of Quantities set forth in the Bid Form, multiplied by the corresponding unit prices, and including any lump sum bids on individual items.

(B) Variations from Engineer's Estimate: Bidders are warned that the Engineer's Estimate of Quantities on the various items of work and materials is approximate only, given solely to be used as a uniform basis for the comparison of bids, and is not to be considered part of this contract. The quantities actually required to complete the contract work may be less or more than so estimated, and if so, no action for damages or for loss of profits shall accrue to the contractor by reason thereof.

(C) Overruns: The terms and conditions applicable to overruns of unit price items are set forth in Article 26 of the Contract.

34. Excise Tax

Bidders are referred to the Specifications for information on Federal Excise Tax exemptions.

35. Licenses and Permits

The successful bidder will be required to obtain all necessary licenses and permits necessary to perform the work.

36. Multiple Prime Contractors

If more than one prime contractor will be involved on this project, all contractors are required to examine the Invitation for Bid packages for all other parts of the project.

37. Locally Based Enterprise Requirements (LBE)

This Contract is subject to the requirements of Administrative Code, Section 6-108.1, and the regulations promulgated thereunder. No construction contract will be awarded unless and until these requirements have been complied with in their entirety. The bidder is advised of the provisions set forth below, as well as the provisions with respect to the Locally Based Enterprise Program contained in Article 67 of the Contract. The contractor is advised that:

(A) If any portion of the Contract is subcontracted, not less than ten percent of the total dollar amount of the contract shall be awarded to locally based enterprises ("LBEs"); except, where less than ten percent of the total dollar amount of the Contract is subcontracted, such lesser percentage shall be so awarded.

(B) No contractor shall require performance and payment bonds from LBE subcontractors.

(C) No Contract shall be awarded unless the contractor first identifies in its bid:

- (1) the percentage, dollar amount and type of work to be subcontracted; and
- (2) the percentage, dollar amount and type of work to be subcontracted to LBEs.

(D) Within ten calendar days after notification of low bid, the apparent low bidder shall submit an "LBE Participation Schedule" to the contracting agency. If such schedule does not identify sufficient LBE subcontractors to meet the requirements of Administrative Code Section 6-108.1, the apparent low bidder shall submit documentation of its good faith efforts to meet such requirements.

(1) The "LBE Participation Schedule" shall include:

- (a) the name and address of each LBE that will be given a subcontract,
- (b) the percentage, dollar amount and type of work to be subcontracted to the LBE, and
- (c) the dates when the LBE subcontract work will commence and end.

(2) The following documents shall be attached to the "LBE Participation Schedule":

- (a) verification letters from each subcontractor listed in the "LBE Participation Schedule" stating that the LBE will enter into a formal agreement for work,
- (b) certification documents of any proposed LBE subcontractor which is not on the LBE certified list, and
- (c) copies of the certification letter of any proposed subcontractor which is an LBE.

(3) Documentation of good faith efforts to achieve the required LBE percentage shall include as appropriate but not limited to the following:

- (a) attendance at prebid meetings, when scheduled by the agency, to advise bidders of contract requirements;
- (b) advertisement where appropriate in general circulation media, trade association publications and small business media of the specific subcontracts that would be at least equal to the percentage goal for LBE utilization specified by the contractor;
- (c) written notification to association of small, minority and women contractors soliciting specific subcontractors;
- (d) written notification by certified mail to LBE firms that their interest in the contract is solicited for specific work items and their estimated values;
- (e) demonstration of efforts made to select portions of the work for performance by LBE firms in order to increase the likelihood of achieving the stated goal;
- (f) documented efforts to negotiate with LBE firms for specific subcontracts, including at a minimum:
 - (i) The names, address and telephone numbers of LBE firms that are contacted;
 - (ii) A description of the information provided to LBE firms regarding the plans and specifications for portions of the work to be performed;
 - (iii) Documentation showing that no reasonable price can be obtained from LBE firms;
 - (iv) A statement of why agreements with LBE firms were not reached;
- (g) a statement of the reason for rejecting any LBE firm which the contractor deemed to be unqualified; and
- (h) documentation of efforts made to assist the LBE firms contacted that needed assistance in obtaining required insurance.

(E) Unless otherwise waived by the Commissioner with the approval of the Office of Economic and Financial Opportunity, failure of a proposed contractor to provide the information required by paragraphs (C) and (D) above may render the bid non-responsive and the Contract may not be awarded to the bidder. If the contractor states that it will subcontract a specific portion of the work, but can demonstrate despite good faith efforts it cannot achieve its required LBE percentage for subcontracted work until after award of Contract, the Contract may be awarded, subject to a letter of compliance from the contractor stating that it will comply with Administrative Code Section 6-108.1 and subject to approval by the Commissioner. If the contractor has not met its required LBE percentage prior to award, the contractor shall demonstrate that a good faith effort has been made subsequent to award to obtain LBEs on each subcontract until it meets the required percentage.

(F) When a bidder indicates prior to award that no work will be subcontracted, no work may be subcontracted without the prior written approval of the Commissioner, which shall be granted only if the contractor in good faith seeks LBE subcontractors at least six weeks prior to the start of work.

(G) The contractor may not substitute or change any LBE which was identified prior to award of the contract without the written permission of the Commissioner. The contractor shall make a written application to the Commissioner for permission to make such substitution or change, explaining why the contractor needs to change its LBE subcontractor and how the contractor will meet its LBE subcontracting requirement. Copies of such application must be served on the originally identified LBE by certified mail return receipt requested, as well as the proposed substitute LBE. The Commissioner shall determine whether or not to grant the contractor's request for substitution.

38. Bid Submission Requirements

The Bid Submission Requirements are set forth in the BID BOOKLET, VOLUME 1 OF 3.

39. Comptroller's Certificate

This Contract shall not be binding or of any force unless it is registered by the Comptroller in accordance with Section 328 of the City Charter and the Procurement Policy Board Rules. This Contract shall continue in force only after annual appropriation of funds by the City of New York and certification as hereinabove set forth.

40. Procurement Policy Board Rules

This Invitation For Bids is subject to the Rules of the Procurement Policy Board of the City of New York. In the event of a conflict between said Rules and a provision of this Invitation For Bids, the Rules shall take precedence.

41. Viewing of Submitted Bid Documents

In accordance with NYC Procurement and Policy Board Rules, Section 3-02, the submitted bid documents will be available to view immediately after completion of the bid opening and by appointment for up to 72 hours after the bid opening.

42. DDC Safety Requirements

The DDC Safety Requirements apply to the work to be performed pursuant to the Contract. The DDC Safety Requirements are set forth on the following pages.

CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
SAFETY REQUIREMENTS FOR CONSTRUCTION
CONTRACTS

January 2020

THE DDC SAFETY REQUIREMENTS FOR CONSTRUCTION CONTRACTS INCLUDE THE FOLLOWING SECTIONS:

- I. POLICY ON SITE SAFETY**
- II. PURPOSE**
- III. DEFINITIONS**
- IV. RESPONSIBILITIES**
- V. SAFETY QUESTIONNAIRE**
- VI. SITE SAFETY PLAN**
- VII. KICK-OFF/PRE-CONSTRUCTION MEETINGS AND SAFETY REVIEW**
- VIII. EVALUATION DURING WORK IN PROGRESS**
- IX. SAFETY PERFORMANCE EVALUATION**

I. POLICY ON SITE SAFETY

The City of New York Department of Design and Construction (DDC) is committed to a policy of injury and illness prevention and risk management for construction work that will ensure the safety and health of the workers engaged in the projects and the protection of the general public. Therefore, it is DDC's policy that work carried out by Contractors on DDC contracts must, at a minimum, comply with the most current versions of all applicable federal, state and city laws, rules, and regulations, including without limitation:

- ❑ Code of Federal Regulations, Title 29, Part 1926 (29 CFR 1926) and applicable Sub-parts of Part 1910 – U.S. Occupational Safety and Health Administration (OSHA);
- ❑ Federal Highway Administration – Manual on Uniform Traffic Control Devices (MUTCD);
- ❑ New York Codes, Rules and Regulations (NYCRR), Title 12, Part 23 – Protection in Construction, Demolition and Excavation Operations;
- ❑ New York Codes, Rules and Regulations (NYCRR), Title 16, Part 753 – Protection of Underground Facilities;
- ❑ New York City Administrative Code, Title 28 – New York City Construction Codes;
- ❑ Rules of the City of New York, Title 15, Chapter 13 – Rules Pertaining To the Prevention of the Emission of Dust from Construction Related Activities;
- ❑ Rules of the City of New York, Title 15, Chapter 28 – Citywide Construction Noise Mitigation;
- ❑ Rules of the City of New York, Title 34 Chapter 2 – NYCDOT Highway Rules.

The Contractor will be required to comply with all new and/or revised federal, state and city laws, rules, and regulations, issued during the course of the project, at the expense of the Contractor without any additional costs to the DDC.

II. PURPOSE

The purpose of this policy is to ensure that Contractors perform their work and supervise their employees in accordance with all applicable federal, state and city rules and regulations. Further, Contractors will be expected to minimize or eliminate jobsite and public hazards, through a planning, inspection, auditing and corrective action process. The goal is to control risks so that injuries, illnesses, and accidents to contractors' employees, DDC employees and the general public, as well as damage to city-owned and private property, are reduced to the lowest level feasible.

III. DEFINITIONS

Agency Chief Contracting Officer (ACCO): The ACCO will mean the person delegated authority by the Commissioner to organize and supervise the procurement activity of subordinate Agency staff in conjunction with the City Chief Procurement Officer (CCPO).

Competent Person: As defined by OSHA, an individual who is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees or the general public, and who has authorization to take prompt corrective measures to eliminate them. This individual will have completed, at a minimum an authorized 30-hour OSHA Construction Safety Course. The Contractor may be required to provide more than one competent person due to construction operations and based on the number of active work sites.

Construction Safety Auditor: A representative of the Office of Construction Safety who provides inspection and assessment services to enhance health and safety on all DDC construction projects. The activities of the Construction Safety Auditor include performing site audits, reviewing safety plans, reviewing construction permits, drawings, verifying Contractor's compliance with applicable federal, state and city laws, rules, regulations, and DDC Contract Safety Requirements, etc. and rendering technical advice and assistance to DDC Resident Engineers and Project Managers.

Office of Construction Safety: A unit of DDC Safety and Site Support that assesses contractor's safety on DDC jobsites and advises responsible parties of needed corrective actions.

Registered Construction Superintendent: For certain projects, as defined in New York City Construction Codes – Title 28, the contractor will provide a Construction Superintendent registered with the NYC Department of Buildings and responsible for all duties as defined in Chapter 33 of Title 1 of the Rules of the City of New York.

Contractor: For purposes of these Safety Requirements, the term “Contractor” will mean any person or entity that enters into a contract for the performance of construction work on a DDC project. The term “Contractor” will include any person or entity which enters into any of the following types of contracts: (1) a prime construction contract for a specific project, (2) a prime construction contract using the Job Order Contracting System (“JOCS Contract”), and (3) a subcontract with a CM/Builder (“First Tier Subcontract”).

Daily Safety Job Briefing: Daily jobsite safety briefings, given to all jobsite personnel at project site by the Contractor before work begins and/or if hazards or potential hazards are discovered while working, with the purpose of discussing the scheduled activities for the day, the hazards related to these activities, activity specific safety procedures, and Job Hazard Analysis associated with the scheduled construction work. Daily jobsite briefings will be documented, available at the jobsite, and will include at a minimum, topics, name and signature of the person conducting the briefing session, names and signatures of attendants, name of the designated competent person, contractor's name, DDC Project ID, date, time, and location.

Director – Office of Construction Safety: Responsible for the operations of the Office of Construction Safety and the DDC Site Safety management programs.

Job Hazard Analysis (JHA): A process of identifying the major job tasks and any potential site-specific hazards that may be present during construction and establishing the means and methods to eliminate or control those hazards. A JHA will be documented, available at the jobsite and will include at a minimum work tasks, being performed, identified hazards, control methods for the identified hazards, contractor's name, DDC Project ID, location, date, name and signature of certifying person. A JHA is a living document that will be re-evaluated and revised to address new hazards and tasks that may develop and will be present at the worksite and produced upon request.

Qualified Person: As defined by OSHA, an individual who, by possession of a recognized degree, certificate, license, or professional standing, or who by extensive knowledge, training, and experience, has successfully demonstrated his or her ability to solve problems relating to the subject matter, the work, or the project. Qualified Persons are required under regulation to address issues pertaining, but without limit, to fall protection, scaffold design, maintenance and protection of traffic, and excavation protective system, among others.

Project Site: Those areas indicated in the Contract Documents where the Work is to be performed.

Project Safety Representative: The designated Project Safety Representative will have at a minimum an OSHA 30-hour Construction Safety Course and other safety training applicable to Contractor's/subcontractor's project work. This individual will be responsible to oversee safety performance of the required construction work, conduct documented daily safety inspections, and implement corrective actions to maintain a safe work site. The Project Safety Representative must have sufficient experience and skills necessary to thoroughly understand the health and safety hazards and controls and must have authority to undertake corrective actions. A dedicated full-time Project Safety Representative may be required on large projects and projects deemed by DDC to be particularly high risk. DDC reserves the right to request a dedicated full-time Project Safety Representative for any reason at any time during the course of the project at the expense of the Contractor without any additional costs to the DDC. The full-time Project Safety Representative will be present at the site during all work activities.

Resident Engineer (“RE”): Representative of the Commissioner duly designated by the Commissioner to be his/her representative at the site of the work. The RE may be a consultant retained by DDC, including a Construction Management (CM) or Resident Engineer Inspection (REI) firm. If DDC has retained a CM, REI or other consultant firm to perform management and oversight for the Project (e.g., CM-Builder, CM-Design-Builder, Project Manager, Program Manager), that CM, REI or other consultant is the Resident Engineer for purposes of these Safety Requirements.

Safety Questionnaire: Used by DDC to evaluate Contractor's current and past safety performance. It is required to be completed by all Contractors initially when submitting bids for Construction work, or when being pre-qualified and updated annually or as requested by the DDC.

Site Safety Manager: For certain projects, as defined in New York City Construction Codes – Title 28, the Contractor will provide a Site Safety Manager with a Site Safety Manager License issued by the New York City Department of Building.

Site Safety Plan: A site-specific safety plan developed by the Contractor for a DDC project. The Site Safety Plan will identify the project work scope, identify hazards associated with the project work and include project specific safety procedures and training appropriate and necessary to complete the work. The Site Safety Plan will be submitted within 30 days from the Award Date or as otherwise directed and is subject to review and acceptance by the Office of Construction Safety prior to the commencement of work at the site.

Unsafe or Unhealthy Condition: A condition that could be potentially hazardous to the health and safety of personnel or the public, and/or damaging to equipment, machinery, property, or the environment.

Weekly Safety Meetings: Weekly jobsite safety meetings, given to all jobsite personnel by Contractor, with the purpose of discussing general safety topics and job specific requirements encountered at the DDC work site. Weekly safety meetings will be documented and will include at a minimum, topics, name and signature of the person conducting the meeting, names and signatures of attendees, contractor's name, DDC Project ID, date, and location.

Work: The construction required by the Contractor's Contract Documents whether completed or partially completed, performed by the Contractor/ subcontractors. Work refers to the furnishing of labor, furnishing and incorporating materials and equipment into the construction and providing any service required by the Contract Documents to fulfill the Contractor's obligation to complete the Project. For the purposes of these Safety Requirements, the term "Work" includes all Utility Interference work (commonly referred to as "Section U", "EP-7", and "Joint Bid" work) performed in association with this Contract.

IV. RESPONSIBILITIES

All persons who manage, perform, and provide support for construction projects will conduct operations in compliance with the requirements identified in this Policy and all applicable governing regulatory agency requirements and guidelines pertaining to safety in construction.

A. Resident Engineer

1. Review and facilitate Contractor(s) Site Safety Plan submittals to DDC for acceptability.
2. Notify the Office of Construction Safety of the commencement of construction work.
3. Develop and implement a training verification process to ensure that all CM/REI, consultant, Contractor, and subcontractor employees are properly trained. Maintain all applicable initial and refresher training records and assures documentation availability on site.
4. Maintain documentation of and attend weekly safety meetings and daily safety job briefings.
5. Assure that Contractor(s) JHA's are current to reflect the work tasks being performed, hazards, and control methods to mitigate the identified hazards. Verify that all employees at the job site are trained on the JHAs and maintain supporting documentation on site.
6. Assure adequate planning for all critical construction activities (crane operation, excavation, confined space entry, etc.) including coordination between Contractor(s) /DDC/ other Agencies as required.
7. Maintain custody of all construction related permits, plans, approvals, drawings, etc., related to the project and assure their availability on site.
8. Recognize, minimize, or eliminate jobsite and public hazards, through required planning, inspection, verification, and corrective action process.
9. Monitor the conditions at the site for conformance with the Contractor's Site Safety Plan, DDC policies, permits, and all applicable regulations and documentation that pertain to construction safety.
10. Notify the Contractor and DDC immediately upon determination of any condition or activity existing which is not in compliance with the Contractor's Site Safety Plan, applicable federal, state or local codes or any

condition that presents a potential risk of injury to the public or workers or possible damage to property. Direct the Contractor to provide such labor, materials, equipment, and supervision to remedy such conditions.

11. Notify the Office of Construction Safety and the ACCO's Insurance and Risk Management Unit of project-related accidents, incidents, and near misses as per DDC's Construction Safety Emergency and Accident Notification and Response Procedure within two (2) hours.
12. In case of an accident, incident, or near miss, RE is responsible to protect the integrity of the accident site including but not limited to: the safeguarding of all evidence, documentation of all personnel on site at the time of the accident, gather facts related to all accidents, incidents, or near miss, and prepare required DDC Construction Accident Report as per DDC's Construction Safety Emergency and Accident Notification and Response Procedure. Maintain all records pertaining to accidents, incidents, and near miss and have them available upon request.
13. Notify the Office of Construction Safety within two (2) hours of the start of an inspection by any outside/regulatory agency personnel, including NYS, OSHA, NYC DOB or any other City/State/Federal oversight entity and forward a copy of the inspection report within one business day of its receipt.
14. Escort and assist Construction Safety Auditors during all field and record audits.
15. Report any emergency conditions to the Office of Construction Safety immediately.

Note: In addition to the responsibilities listed above, if the Resident Engineer is a CM/REI or other non-City party hired by the City to manage the Project, the Resident Engineer is also required to do the following:

16. Provide personnel who are certified and or trained appropriately for the requirements of the project.
17. Perform an investigation for any project-related accidents, incidents, and near misses. Within 24-hours of the time of the accident, incident, or near miss, the CM/REI will submit an investigation report to the Office of Construction Safety. Such report will include proposed remedial measures and implementation of corrective actions to prevent recurrence.

DDC reserves the right to request that the CM/REI replace any CM/REI personnel for any reason at any time during the project.

B. Construction Contractors

Note: For CM-Build and CM-Design-Build Projects, the CM will meet all requirements listed in this section, as well as the Resident Engineer section above.

1. Submit a completed Safety Questionnaire and other safety performance related documentation with its bid or as part of a pre-qualification package.
2. Submit a Site Safety Plan within 30 days from the Award Date or as otherwise directed. The Site Safety Plan is subject to review and acceptance by the Office of Construction Safety prior to the commencement of work at the site. The Site Safety Plan will be revised and updated as necessary during the course of the project. If requested by the Office of Construction Safety, the Site Safety Plan must be developed and submitted for approval using a web-based system, the Site Safety Plan Application (SSP App).
3. Designate and identify a Project Safety Representative in the Site Safety Plan. The Contractor will immediately notify the Office of Construction Safety, in a form and manner acceptable to the Office of Construction Safety, of any permanent change to the designated Project Safety Representative. In the event the primary designated Project Safety Representative is temporary unable to perform his or her duties, an alternate Project Safety Representative will be provided. Resumes, outlining the qualification and experience for the Project Safety Representative (s) will be included in the Site Safety Plan and available upon request. DDC reserves the right to request the Contractor to replace a Project Safety Representative for any reason at any time during the course of the project.
4. Designate and identify a Competent Person(s) in the Site Safety Plan. Contractor/subcontractor may be required to provide more than one competent person due to construction operations and based on a number of work tasks/areas. DDC reserves the right to request the Contractor to replace a Competent Person or provide additional Competent Person(s) for any reason at any time during the course of the project. The Competent Person will be present at the site during all work activities.
5. For certain projects, as defined in New York City Construction Codes – Title 28, designate and identify the Licensed Site Safety Manager or Registered Construction Superintendent. Resumes, outlining the qualification and experience for the Licensed Site Safety Manager or Registered Construction Superintendent will be included in the Site Safety Plan and available upon request. The Contractor will immediately notify the Office

of Construction Safety, in a form and manner acceptable to the Office of Construction Safety, of any permanent change to the designated Site Safety Manager and/or Construction Superintendent. In the event the primary designated Site Safety Manager or Construction Superintendent is temporarily unable to perform his or her duties, an alternate Licensed Site Safety Manager and/or Registered Construction Superintendent will be provided. The Office of Construction Safety must be informed of such change. DDC reserves the right to request the Contractor to replace Site Safety Manager or Construction Superintendent for any reason at any time during the course of the project.

6. Develop a written Job Hazard Analysis (JHA) that identifies safety hazards and control methods for project specific work tasks. A preliminary JHA will be included in the Site Safety Plan submitted by the Contractor. A JHA is a living document that will be re-evaluated and revised to address new hazards and tasks that may develop during the course of the project and will be present at the worksite and produced upon request.
7. Develop project specific safety procedures to protect employees, general public, and property during all construction activities for the duration of the project.
8. Ensure that all employees are aware of the hazards associated with the project through documented formal and informal training and/or other communications. Conduct and document new employee and site-specific safety orientation for all Contractor and subcontractor personnel to review the hazards associated with the project as identified in the Site Safety Plan and the specific safety procedures and controls that will be used to protect workers, the general public and property. The Project Safety Representative will conduct this training prior to mobilization and if necessary during the course of the project. Documentation will be provided to the RE.
9. Prior to performing any work on DDC projects all Contractor's and subcontractor's employees will, at a minimum, have successfully completed, within the previous five calendar years, an OSHA 10-hour construction safety course.

All training records (OSHA 10-hour, flagger, scaffold, fall protection, confined space, etc.) will be provided to the RE prior to mobilization, included in the Site Safety Plan, kept current during the course of the project, and available for review.

10. Conduct and document weekly safety meetings and daily job briefing sessions for the duration of the project. Attendance at weekly safety meetings and daily job briefing sessions is mandatory. A written record of weekly safety meetings will be available upon request and job briefing sessions will be available at the worksite.
11. As part of the Site Safety Plan, prepare site specific procedures, such as maintenance and protection of traffic plan, steel erection plan, confined space program, fall protection plan, demolition plan, site specific emergency evacuation plan, etc. (if not otherwise provided in the contract documents) and comply with all of its provisions.
12. Have immediately available for review at the project site where actual construction activities are being performed all applicable documentation, including but not limited to: JHAs for work tasks being performed, all required training records, MPT plan (where applicable), Noise and Dust Mitigation Plans, excavation protective system drawings (where applicable), Emergency Evacuation plan, fall protection program (where applicable), confined space program (where applicable), all required permits, daily job briefing records, all required documentation for crane operation (where applicable), daily inspection checklist, scaffold and sidewalk drawings (when applicable), safety data sheets for chemicals in use.
13. Comply with all federal, state and local safety and health rules, laws, and regulations.
14. Comply with all provisions of the Site Safety Plan.
15. Provide, replace, and adequately maintain at or around the project site, suitable and sufficient signage, lights, barricades and enclosures (fences, sidewalk sheds, netting, bracing, etc.). The project specific MPT plan will be developed, implemented, and reviewed during the course of the project.
16. The Project Safety Representative will conduct daily safety inspections, document the inspection results, implement corrective actions for the identified hazards. Maintain the inspection records and have them available upon request.
17. **Report unsafe or unhealthy conditions to the RE as soon as practical, but no more than 24 hours after discovery, and take prompt actions to remove or abate such conditions. Should an imminent dangerous condition be discovered, Contractor will stop all work in the area of danger until corrections are made.**
18. Report all accidents, incidents and near misses involving injuries to workers or the general public, as well as property damage, to the RE within one (1) hour.
19. Following an accident or incident, unless otherwise directed, the Contractor will not remove or alter any equipment, structure, material, or evidence related to the accident or incident. Exception: Immediate emergency procedures taken to secure structures, temporary construction, operations, or equipment that pose a continued imminent danger or facilitate assistance for persons who are trapped or who have sustained bodily injury. Take

additional measures as necessary to secure the accident or incident site and to protect against any further injury or property damage.

20. The Contractor will perform an investigation into the root cause of the accident, incident, or near miss. Within 24 hours of an accident, incident, or near miss, the Contractor will prepare and submit to the RE a written investigation report detailing findings, corrective actions, and hazard mitigation implementation to prevent recurrence.
21. Notify the RE within two (2) hours of the start of an inspection by any outside regulatory agency personnel, including OSHA, NYC DOB, or others.
22. Maintain all records pertaining to all required safety compliance documents, accidents and incidents reports. DDC reserves the right to request copy of any records pertaining to the safety of the project and required by DDC and other federal, state, and city agencies, including but not limited to permits, training records, safety inspection records, drawings, equipment records, etc.
23. Cooperate with DDC Office of Construction Safety/ RE and address DDC recommendations on safety, which will in no way relieve the Contractor of its responsibilities for safety on the project. The Contractor has sole responsibility for safety.

V. SAFETY QUESTIONNAIRE

DDC requires that all Contractors provide information regarding their current and past safety performance and programs. This will be accomplished by the use of the DDC Safety Questionnaire. As a part of the bid submittal package, the contractor will submit a completed DDC Safety Questionnaire listing company workers' compensation experience modification rating and OSHA Incident Rates for the three (3) years prior to the date of the bid opening. DDC may request a Contractor to update its Questionnaire at any time or to provide more detailed information. The Contractor will provide the requested information within 15 days.

The following criteria will be used by DDC in reviewing the Contractor's responsibility, which will be based on the information provided on the questionnaire:

- Criteria 1: OSHA Injury and Illness Rates (I&IR) are no greater than the average for the industry (based on the most current Bureau of Labor Statistics data for the Contractors SIC code); and
- Criteria 2: Insurance workers compensation Experience Modification Rate (EMR) equal to or less than 1.0; and
- Criteria 3: Any willful violations issued by OSHA or NYC DOB within the last three (3) years; and
- Criteria 4: A fatality (worker or member of public) and injuries, requiring OSHA notification, experienced on or near Contractor's worksite within the last three (3) years; and
- Criteria 5: Past safety performance on DDC projects (accidents; status of site safety plan submittals; etc.)
- Criteria 6: OSHA violation history for the last three (3) years;
- Criteria 7: Contractor will provide OSHA Injury and Illness Records (currently OSHA 300 and 300A Logs) for the last three (3) years.

If the Contractor fails to meet the basic criteria listed above, the Office of Construction Safety may request, through the ACCO, more details concerning the Contractor's safety experience. DDC may request the Contractor to provide copies of, among other things, accident investigation reports, OSHA records, OSHA and NYC DOB citations, EPA citations and written corrective action plan.

VI. SITE SAFETY PLAN

Within thirty (30) days from the Award Date or as otherwise directed, the Contractor will submit the Site Safety Plan. The Site Safety Plan will identify project work scope, safety hazards associated with the project tasks, and include specific safety procedures and training appropriate and necessary to complete the work. The Site Safety Plan is subject to review and acceptance by the Office of Construction Safety prior to the commencement of work at the site. Due to the project work scope and project duration, the Office of Construction Safety may grant a conditional acceptance for a Site Safety Plan without all sections being complete. In a case of a "Conditional Acceptance" of a Site Safety Plan,

the Contractor will provide the remaining sections previously incomplete and/or not submitted for review and acceptance by the Office of Construction Safety prior to the commencement of the construction activities. The Office of Construction Safety reserves the right to withdraw the initial “Conditional Acceptance” if the Contractor fails to provide the remaining sections of a Site Safety Plan. Failure by the Contractor to submit an acceptable Site Safety Plan will be grounds for default.

Site Safety Plan requirements: The Site Safety Plan will be a written document and will apply to all project specific Contractor and subcontractor operations, and will have at a minimum, the following elements with each described in a separate section (It may be necessary to modify the basic format for certain unique or high-risk projects, such as tunnels or high-rise construction). All Site Safety Plan sections will be numbered in the order listed below. For sections, which are not applicable for the type of the work being performed by the Contractor on DDC project, the Contractor will in writing indicate “Not applicable based on the project work scope.” The Site Safety Plan will include Contractor’s name, DDC project ID, project location (s), and development and revision dates. The Site Safety Plan will include the sections, attachments, and appendixes provided in the Site Safety Plan. All pages of the Site Safety Plan will be numbered. If requested by the Office of Construction Safety, the Site Safety Plan must be developed and submitted for approval using a web-based system, the Site Safety Plan Application (SSP App).

1. Project Work Scope – Detailed information regarding work tasks that will be performed by Contractor and subcontractors under the project.
2. Responsibility and Organization – Contractor’s organization chart with responsible personnel for the project, including titles, names, contact information, roles, and responsibilities. All Contractor’s personnel required by the DDC Safety Requirements will be identified.
3. Safety Training and Education – OSHA 10 Hours training, requirements for daily safety briefings and weekly safety meetings, any work task specific training, responsible staff for implementation of training program for the project.
4. Job Hazard Analysis (JHA) – Project specific Job Hazard Analysis including work tasks, identified hazards, hazard control methods (administrative, engineering, PPE) to protect workers, property and general public, Contractor’s name, project id, location, name and signature of a certifying person, hazard assessment date.
5. Protection of Public – Project specific procedures covering safety of the general public during all project construction activities.
6. Hazard Corrective Actions - Procedures for hazard identification, including responsible person(s), frequency of safety inspections, implementation of corrective actions, safety inspection checklist.
7. Accident/Exposure Investigation – Project specific procedures for accident/incident/near miss investigation and implementation of corrective actions. Accident/incident/near miss notification procedure of DDC project staff (timer frame and responsible personnel).
8. Recording and Reporting Injuries – Procedures to meet 29 CFR 1904 requirements.
9. First Aid and Medical Attention – Responsible staff, location and inspection of First Aid kit, directions to local hospitals; emergency telephone numbers.
10. Project Specific Fire Protection and Prevention Program – Project specific procedures, including responsible staff, fire alarm system/methods, hot work procedures, etc.
11. Housekeeping Procedure.
12. Project Specific Illumination Procedure.
13. Project Specific Sanitation Procedure.
14. Personal Protective Equipment (PPE), including Respiratory Protection Program and Hearing Conservation Program, if required.
15. Hazard Communication Program – Contractor’s Hazard Communication Program, responsible staff; training; SDS records, project specific list of chemicals; location of the program and SDS records.
16. Means of Egress – Information regarding free and unobstructed egress from all parts of the building or structure; exit marking; maintenance of means of egress, etc.
17. Employee Emergency Action Plan – Project specific: responsible staff, emergency alarm system/devices, evacuation procedure, procedure to account for employees after evacuation, etc.
18. Evacuation Plan – Project specific evacuation plan (drawing/scheme) with exists and evacuation routes.
19. Ionizing/Nonionizing Radiation – Competent person, license and qualification requirements, type of radiation, employee’s exposure and protection, safety procedures, etc.

20. Material Handling, Storage, Use and Disposal – Project specific information regarding material storage, disposal, and handling: procedures, plan/drawings, etc.
21. Signs, Signals, and Barricades – Use of danger/warning signs, safety instruction signs, sidewalk closure and pedestrian fencing and barricades (if not included in the MPT plan), etc.
22. Tools – Hand and Power – Safety procedures for the type of tools to be used.
23. Scaffold – Project specific scaffold types, procedures, training requirements, scaffold drawings, designed, sealed, and signed by NYS Licensed Professional Engineer, or as otherwise directed; competent person, criteria for project specific scaffold, falling object protection, procedures for aerial lifts/scissor lifts.
24. Welding and Cutting – Project specific procedure for welding and cutting, including all necessary safety requirements such as fire prevention, personal protective equipment, hot work permits (if not covered by Contractor's Fire Prevention and Protection program, FDNY certificate requirements).
25. Electrical Safety – Project specific procedures, including lock out-tag out.
26. Fall Protection – Project specific information regarding selected fall protection systems, fall protection plan, responsible staff.
27. Cranes, Derrick, Hoists, Elevators, Conveyors – project specific equipment information including type, rated load capacity, manufacture specification requirements, competent person, exposure to falling load, inspection, recordkeeping, clearance requirements, communication procedure, ground lines, permits.
28. Excavation Safety – Competent person; excavation procedures; project specific protective system, including drawings, designed, sealed, and signed by NYS Licensed Professional Engineer, or as otherwise directed.
29. Protection of Underground Facilities and Utilities Procedure, including responsible staff and responsibilities.
30. Concrete and Masonry Construction Procedures
31. Maintenance and Protection of Traffic Plan – Project specific MPT plan, designed, sealed, and signed by NYS Licensed Professional Engineer, or as otherwise directed; flagmen training, public safety, etc.
32. Steel Erection – Site specific erection plan, requirements for applicable written notifications, competent person, fall protection plan, training requirements, etc.
33. Demolition – Engineering survey, including written evidence, disconnection of all effected utilities, identification of all hazardous chemicals, materials, gases, etc., floor openings, chutes, inspection and maintenance of all stairs/passageways, removal of materials/debris/structural elements, lock out/tag out, competent person.
34. Blasting and the Use of Explosives – Project specific safety procedures, warning signs, training/qualification, transportation, storage and use of explosives, inspection.
35. Stairways and Ladders – Types of stairs and ladders, safety procedures, training requirements.
36. Alcohol and Drug Abuse Policy
37. Rodents and Vermin Controls
38. Toxic and Hazardous Substances – Safety procedures for substances that Contractor's and subcontractor's employees can be exposed on project.
39. Noise Mitigation Plan – Completed project specific Noise Mitigation Plan, and noise mitigation procedures.
40. Confined Space Program – Project specific Confined Space Program, responsible staff, training records, equipment information, rescue procedure, list of project specific confined spaces, forms.
41. Construction Vehicles/Heavy Equipment – Type of construction vehicles/heavy equipment to be used on site, procedures
42. Dust Mitigation Plan – Completed project specific Dust Mitigation Plan, and dust mitigation procedures.
43. Working Over and Near Water. Diving Operations – safety procedures including personal protective equipment, fall protection, rescue services, etc.

The most critical component of the Site Safety Plan is the Job Hazard Analysis (JHA) section. The JHA form is a written document prepared by the Contractor. The Contractor will conduct a site and task assessment to identify the tasks and any potential safety or environmental hazards related to performance of the work, eliminate or implement controls for the potential hazards, and identify proper personal protective equipment for the task. The JHA will be communicated to all Contractor/subcontractor personnel on site. The JHA will include safety hazard identification and controls to protect employees, general public, and property.

The initial JHA will be included in the Contractor's Site Safety Plan and the current JHA form will be available at the construction site for reference. A JHA is a living document that will be re-evaluated and revised to address new hazards and tasks that may develop and will be present at the worksite and produced upon request.

VII. KICK-OFF MEETINGS/PRE-CONSTRUCTION AND SAFETY REVIEW

Prior to the start of construction activities on all DDC projects, RE will invite the Office of Construction Safety to the construction kick-off meeting. The Office of Construction Safety representative(s) will participate in this meeting with the Contractor and RE for the purpose of:

- A. Reviewing DDC Contract Safety Requirements
- B. Reviewing site-specific safety issues based on a project work scope, location, and any other factors which may impact safety of workers and general public.
- C. Reviewing the Site Safety Plan and JHA requirements.
- D. Reviewing Accident/Incident reporting and investigation procedures.
- E. Reviewing designated safety contacts, roles, and responsibilities.
- F. Discussing planned inspections and audits of the site by the Office of Construction Safety personnel.

VIII. EVALUATION DURING WORK IN PROGRESS

The Contractor's adherence to these Safety Requirements will be monitored throughout the project. This will be accomplished by the following:

- A. Use of a safety checklist by a representative of the Office of Construction Safety (or other designated DDC representative) and the RE during regular inspections and comprehensive audits of the job site. Field Exit Conferences will be held with the RE and Contractor Project Safety Representatives.
- B. The RE will continually monitor the safety and environmental performance of the Contractor's employees and work methods. Deficiencies will be brought to the attention of the Contractor's Project Safety Representative on site for immediate correction. The RE will maintain a written record of these deficiencies and have these records available upon request. Any critical deficiencies will be immediately reported to the Office of Construction Safety via telephone (718)391-1911.
- C. If the Contractor's safety performance during the project is not up to DDC standards (safety performance measure, accident/incident rate, etc.) the Director – Office of Construction Safety, or his/her designee will meet with the Contractor's Project Safety Representative and other representatives, the RE, and the DDC Environmental Specialist (if environmental issues are involved). The purpose of this meeting is to 1) determine the level of non-compliance; 2) explain and clarify the safety/environmental provisions; 3) agree on a future course of action to correct the deficiencies.
- D. If the deficiencies continue, the Commissioner may, without limitation, declare the Contractor in default.
- E. The Contractor will within 1 hour inform the RE of all accidents/incidents/near misses including all fatalities, any injuries to employees or members of the general public, and property damage (e.g., structural damage, equipment rollovers, utility damage, loads dropped from crane). The RE will notify the Office of Construction Safety as per DDC's Construction Safety Emergency and Accident Notification and Response Procedure and will maintain a record of all Contractor accidents/incidents for the project.
- F. The Contractor and the RE will notify the Office of Construction Safety within two (2) hours of the start of any NYS-DOL/ NYC-COSH/ OSHA/ EPA inspections.

IX. SAFETY PERFORMANCE EVALUATION

The Contractor's safety record, including accident/incident history and DDC safety inspection results, will be considered as part of the Contractor's performance evaluation at the conclusion of the project. Poor safety performance during the course of the project will be a reason to rate a Contractor unsatisfactory which may be reflected in the City's PASSPort system and will be considered for future procurement actions as set forth in the City's Procurement Policy Board Rules.

NOTICE TO BIDDERS

Please be advised that a Rider to the March 2017 New York City Standard Construction Contract regarding Non-Compensable Delays and Grounds for Extension has been attached and incorporated in this Invitation for Bid. Other than provisions specifically delineated in the Rider, all other terms of the March 2017 New York City Standard Construction Contract continue to apply in full force and effect.

**RIDER TO NEW YORK CITY STANDARD CONSTRUCTION CONTRACT (MARCH
2017) REGARDING NON-COMPENSABLE DELAYS AND GROUNDS FOR
EXTENSION**

The following provisions supersede the corresponding provisions in the March 2017 version of the New York City Standard Construction Contract:

1. Section **11.5.1** provides as follows:

11.5.1 The acts or omissions of public or government bodies (other than **City** agencies) or of any third parties who are disclosed in the **Contract Documents**, or those third parties who are ordinarily encountered or who are generally recognized as related to the **Work**, including but not limited to, **Other Contractors**, utilities or private enterprises;

2. Section **11.5.6** provides as follows:

11.5.6 Climatic conditions, storms, floods, droughts, tidal waves, fires, hurricanes, earthquakes, landslides or other catastrophes or acts of God; acts of war or of the public enemy or terrorist acts; disruption, outage or power failure caused by a utility's inability or failure to provide service, pandemics, epidemics, outbreaks of infectious disease or any other public health emergency; other states of emergency declared by the City, State or Federal government, quarantine restrictions, and freight embargoes; including the **City's** reasonable responses to any of the above; and

3. Section **13.3** provides as follows:

13.3 Grounds for Extension: If such application is made, the **Contractor** shall be entitled to an extension of time for delay in completion of the **Work** caused solely:

13.3.1 By any of the acts or omissions of the **City**, its officials, agents or employees set forth in Articles **11.4.1.1** through **11.4.1.9**; or

13.3.2 By or attributable to any of the items set forth in Articles **11.5.1** through **11.5.7**.

13.3.3 The **Contractor** shall, however, be entitled to an extension of time for such causes only for the number of **Days** of delay which the **ACCO** or the Board may determine to be due solely to such causes, and then only if the **Contractor** shall have strictly complied with all of the requirements of Articles 9 and 10.

CITY OF NEW YORK
STANDARD CONSTRUCTION CONTRACT

March 2017

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**CITY OF NEW YORK
STANDARD CONSTRUCTION CONTRACT**

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WITNESSETH:

The parties, in consideration of the mutual agreements contained herein, agree as follows:

CHAPTER I: THE CONTRACT AND DEFINITIONS

ARTICLE 1. THE CONTRACT

1.1 Except for titles, subtitles, headings, running headlines, tables of contents and indices (all of which are printed herein merely for convenience), the following, except for such portions thereof as may be specifically excluded, shall be deemed to be part of this **Contract**:

1.1.1 All provisions required by law to be inserted in this **Contract**, whether actually inserted or not;

1.1.2 The Contract Drawings and Specifications;

1.1.3 The General Conditions and Special Conditions, if any;

1.1.4 The **Contract**;

1.1.5 The Information for Bidders; Request for Proposals; Notice of Solicitation and Proposal For Bids; Bid or Proposal, and, if used, the Bid Booklet;

1.1.6 All Addenda issued prior to the receipt of the bids; the Notice of Award; Performance and Payment Bonds, if required; and the Notice to Proceed or the Order to Work.

1.2 Should any conflict occur in or between the Drawings and Specifications, the **Contractor** shall be deemed to have estimated the most expensive way of doing the **Work**, unless the **Contractor** shall have asked for and obtained a decision in writing from the **Commissioner** of the **Agency** that is entering into this **Contract**, before the submission of its bid, as to what shall govern.

ARTICLE 2. DEFINITIONS

2.1 The following words and expressions, or pronouns used in their stead, shall, wherever they appear in this Contract, be construed as follows, unless a different meaning is clear from the context:

2.1.1 “**Addendum**” or “**Addenda**” shall mean the additional Contract provisions and/or technical clarifications issued in writing by the Commissioner prior to the receipt of bids.

2.1.2 “**Agency**” shall mean a city, county, borough or other office, position, department, division, bureau, board or commission, or a corporation, institution or agency of government, the expenses of which are paid in whole or in part from the City treasury.

2.1.3 “**Agency Chief Contracting Officer**” (**ACCO**) shall mean a person delegated authority by the Commissioner to organize and supervise the procurement activity of subordinate Agency staff in conjunction with the CCPO, or his/her duly authorized representative.

2.1.4 **“Allowance”** shall mean a sum of money which the Agency may include in the total amount of the Contract for such specific contingencies as the Agency believes may be necessary to complete the Work, *e.g.*, lead or asbestos remediation, and for which the Contractor will be paid on the basis of stipulated unit prices or a formula set forth in the Contract or negotiated between the parties provided, however, that if the Contractor is not directed to use the Allowance, the Contractor shall have no right to such money and it shall be deducted from the total amount of the Contract.

2.1.5 **“City”** shall mean the City of New York.

2.1.6 **“City Chief Procurement Officer” (CCPO)** shall mean a person delegated authority by the Mayor to coordinate and oversee the procurement activity of Mayoral agency staff, including the ACCO and any offices which have oversight responsibility for the procurement of construction, or his/her duly authorized representative.

2.1.7 **“Commissioner”** shall mean the head of the Agency that has entered into this Contract, or his/her duly authorized representative.

2.1.8 **“Comptroller”** shall mean the Comptroller of the City of New York.

2.1.9 **“Contract”** or **“Contract Documents”** shall mean each of the various parts of the contract referred to in Article 1 hereof, both as a whole and severally.

2.1.10 **“Contract Drawings”** shall mean only those drawings specifically entitled as such and listed in the Specifications or in any Addendum, or any drawings furnished by the Commissioner, pertaining or supplemental thereto.

2.1.11 **“Contract Work”** shall mean everything required to be furnished and done by the Contractor by any one or more of the parts of the Contract referred to in Article 1, except Extra Work as hereinafter defined.

2.1.12 **“Contractor”** shall mean the entity which executed this Contract, whether a corporation, firm, partnership, joint venture, individual, or any combination thereof, and its, their, his/her successors, personal representatives, executors, administrators, and assigns, and any person, firm, partnership, joint venture, individual, or corporation which shall at any time be substituted in the place of the Contractor under this Contract.

2.1.13 **“Days”** shall mean calendar days, except where otherwise specified.

2.1.14 **“Engineer”** or **“Architect”** or **“Project Manager”** shall mean the person so designated in writing by the Commissioner in the Notice to Proceed or the Order to Work to act as such in relation to this Contract, including a private Architect or Engineer or Project Manager, as the case may be. Subject to written approval by the Commissioner, the Engineer, Architect or Project Manager may designate an authorized representative.

2.1.15 **“Engineering Audit Officer” (EAO)** shall mean the person so designated by the Commissioner to perform responsible auditing functions hereunder.

2.1.16 **“Extra Work”** shall mean Work other than that required by the Contract at the time of award which is authorized by the Commissioner pursuant to Chapter VI of this Contract.

- 2.1.17 **“Federal-Aid Contract”** shall mean a contract in which the United States (federal) Government provides financial funding as so designated in the Information for Bidders.
- 2.1.18 **“Final Acceptance”** shall mean final written acceptance of all the Work by the Commissioner, a copy of which shall be sent to the Contractor.
- 2.1.19 **“Final Approved Punch List”** shall mean a list, approved pursuant to Article 14.2.2, specifying those items of Work to be completed by the Contractor after Substantial Completion and dates for the completion of each item of Work.
- 2.1.20 **“Law” or “Laws”** shall mean the Constitution of the State of New York, the New York City Charter, the New York City Administrative Code, a statute of the United States or of the State of New York, a local law of the City of New York, any ordinance, rule or regulation having the force of law, or common law.
- 2.1.21 **“Materialman”** shall mean any corporation, firm, partnership, joint venture, or individual, other than employees of the Contractor, who or which contracts with the Contractor or any Subcontractor, to fabricate or deliver, or who actually fabricates or delivers, plant, materials or equipment to be incorporated in the Work.
- 2.1.22 **“Means and Methods of Construction”** shall mean the labor, materials, temporary structures, tools, plant, and construction equipment, and the manner and time of their use, necessary to accomplish the result intended by this Contract.
- 2.1.23 **“Notice to Proceed” or “Order to Work”** shall mean the written notice issued by the Commissioner specifying the time for commencement of the Work and the Engineer, Architect or Project Manager.
- 2.1.24 **“Other Contractor(s)”** shall mean any contractor (other than the entity which executed this Contract or its Subcontractors) who or which has a contract with the City for work on or adjacent to the building or Site of the Work.
- 2.1.25 **“Payroll Taxes”** shall mean State Unemployment Insurance (SUI), Federal Unemployment Insurance (FUI), and payments pursuant to the Federal Insurance Contributions Act (FICA).
- 2.1.26 **“Project”** shall mean the public improvement to which this Contract relates.
- 2.1.27 **“Procurement Policy Board” (PPB)** shall mean the Agency of the City of New York whose function is to establish comprehensive and consistent procurement policies and rules which shall have broad application throughout the City.
- 2.1.28 **“Required Quantity”** in a unit price Contract shall mean the actual quantity of any item of Work or materials which is required to be performed or furnished in order to comply with the Contract.
- 2.1.29 **“Resident Engineer”** shall mean the representative of the Commissioner duly designated by the Commissioner to be his/her representative at the site of the Work.
- 2.1.30 **“Site”** shall mean the area upon or in which the Contractor’s operations are carried on, and such other areas adjacent thereto as may be designated as such by the Engineer.

2.1.31 “**Small Tools**” shall mean items that are ordinarily required for a worker’s job function, including but not limited to, equipment that ordinarily has no licensing, insurance or substantive storage costs associated with it; such as circular and chain saws, impact drills, threaders, benders, wrenches, socket tools, etc.

2.1.32 “**Specifications**” shall mean all of the directions, requirements, and standards of performance applying to the Work as hereinafter detailed and designated under the Specifications.

2.1.33 “**Subcontractor**” shall mean any person, firm or corporation, other than employees of the Contractor, who or which contracts with the Contractor or with its subcontractors to furnish, or actually furnishes labor, or labor and materials, or labor and equipment, or superintendence, supervision and/or management at the Site. Wherever the word Subcontractor appears, it shall also mean sub-Subcontractor.

2.1.34 “**Substantial Completion**” shall mean the written determination by the Engineer that the Work required under this Contract is substantially, but not entirely, complete and the approval of the **Final Approved Punch List**.

2.1.35 “**Work**” shall mean all services required to complete the Project in accordance with the Contract Documents, including without limitation, labor, material, superintendence, management, administration, equipment, and incidentals, and obtaining any and all permits, certifications and licenses as may be necessary and required to complete the Work, and shall include both Contract Work and Extra Work.

CHAPTER II: THE WORK AND ITS PERFORMANCE

ARTICLE 3. CHARACTER OF THE WORK

3.1 Unless otherwise expressly provided in the **Contract Drawings, Specifications, and Addenda**, the **Work** shall be performed in accordance with the best modern practice, utilizing, unless otherwise specified in writing, new and unused materials of standard first grade quality and workmanship and design of the highest quality, to the satisfaction of the **Commissioner**.

ARTICLE 4. MEANS AND METHODS OF CONSTRUCTION

4.1 Unless otherwise expressly provided in the **Contract Drawings, Specifications, and Addenda**, the **Means and Methods of Construction** shall be such as the **Contractor** may choose; subject, however, to the **Engineer’s** right to reject the **Means and Methods of Construction** proposed by the **Contractor** which in the opinion of the **Engineer**:

4.1.1 Will constitute or create a hazard to the **Work**, or to persons or property; or

4.1.2 Will not produce finished **Work** in accordance with the terms of the **Contract**; or

4.1.3 Will be detrimental to the overall progress of the **Project**.

4.2 The **Engineer’s** approval of the **Contractor’s Means and Methods of Construction**, or his/her failure to exercise his/her right to reject such means or methods, shall not relieve the **Contractor**

of its obligation to complete the **Work** as provided in this **Contract**; nor shall the exercise of such right to reject create a cause of action for damages.

ARTICLE 5. COMPLIANCE WITH LAWS

5.1 The **Contractor** shall comply with all **Laws** applicable to this **Contract** and to the **Work** to be done hereunder.

5.2 Procurement Policy Board Rules: This **Contract** is subject to the Rules of the **PPB** (“**PPB Rules**”) in effect at the time of the bid opening for this **Contract**. In the event of a conflict between the **PPB Rules** and a provision of this **Contract**, the **PPB Rules** shall take precedence.

5.3 Noise Control Code provisions.

5.3.1 In accordance with the provisions of Section 24-216(b) of the Administrative Code of the **City** (“Administrative Code”), Noise Abatement Contract Compliance, devices and activities which will be operated, conducted, constructed or manufactured pursuant to this **Contract** and which are subject to the provisions of the **City** Noise Control Code shall be operated, conducted, constructed, or manufactured without causing a violation of the Administrative Code. Such devices and activities shall incorporate advances in the art of noise control development for the kind and level of noise emitted or produced by such devices and activities, in accordance with regulations issued by the **Commissioner** of the **City** Department of Environmental Protection.

5.3.2 The **Contractor** agrees to comply with Section 24-219 of the Administrative Code and implementing rules codified at 15 Rules of the City of New York (“RCNY”) Section 28-100 *et seq.* In accordance with such provisions, the **Contractor**, if the **Contractor** is the responsible party under such regulations, shall prepare and post a Construction Noise Mitigation Plan at each **Site**, in which the **Contractor** shall certify that all construction tools and equipment have been maintained so that they operate at normal manufacturers operating specifications. If the **Contractor** cannot make this certification, it must have in place an Alternative Noise Mitigation Plan approved by the **City** Department of Environmental Protection. In addition, the **Contractor**’s certified Construction Noise Mitigation Plan is subject inspection by the **City** Department of Environmental Protection in accordance with Section 28-101 of Title 15 of RCNY. No **Contract Work** may take place at a **Site** unless there is a Construction Noise Mitigation Plan or approved Alternative Noise Mitigation Plan in place. In addition, the **Contractor** shall create and implement a noise mitigation training program. Failure to comply with these requirements may result in fines and other penalties pursuant to the applicable provisions of the Administrative Code and RCNY.

5.4 Ultra Low Sulfur Diesel Fuel: In accordance with the provisions of Section 24-163.3 of the Administrative Code, the **Contractor** specifically agrees as follows:

5.4.1 Definitions. For purposes of this Article 5.4, the following definitions apply:

5.4.1(a) “Contractor” means any person or entity that enters into a Public Works Contract with a **City Agency**, or any person or entity that enters into an agreement with such person or entity, to perform work or provide labor or services related to such Public Works Contract.

5.4.1(b) “Motor Vehicle” means any self-propelled vehicle designed for transporting persons or property on a street or highway.

5.4.1(c) “Nonroad Engine” means an internal combustion engine (including the fuel system) that is not used in a Motor Vehicle or a vehicle used solely for competition, or that is not subject to standards promulgated under Section 7411 or Section 7521 of Title 42 of the United States Code, except that this term shall apply to internal combustion engines used to power generators, compressors or similar equipment used in any construction program or project.

5.4.1(d) “Nonroad Vehicle” means a vehicle that is powered by a Nonroad Engine, fifty (50) horsepower and greater, and that is not a Motor Vehicle or a vehicle used solely for competition, which shall include, but not be limited to, excavators, backhoes, cranes, compressors, generators, bulldozers, and similar equipment, except that this term shall not apply to horticultural maintenance vehicles used for landscaping purposes that are powered by a Nonroad Engine of sixty-five (65) horsepower or less and that are not used in any construction program or project.

5.4.1(e) “Public Works Contract” means a contract with a **City Agency** for a construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge; a contract with a **City Agency** for the preparation for any construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge; or a contract with a **City Agency** for any final work involved in the completion of any construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge.

5.4.1(f) “Ultra Low Sulfur Diesel Fuel” means diesel fuel that has a sulfur content of no more than fifteen parts per million (15 ppm).

5.4.2 Ultra Low Sulfur Diesel Fuel

5.4.2(a) All **Contractors** shall use Ultra Low Sulfur Diesel Fuel in diesel-powered Nonroad Vehicles in the performance of this **Contract**.

5.4.2(b) Notwithstanding the requirements of Article 5.4.2(a), **Contractors** may use diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm) to fulfill the requirements of this Article 5.4.2, where the Commissioner of the **City Department of Environmental Protection** (“DEP Commissioner”) has issued a determination that a sufficient quantity of Ultra Low Sulfur Diesel Fuel is not available to meet the needs of **Agencies** and **Contractors**. Any such determination shall expire after six (6) months unless renewed.

5.4.2(c) **Contractors** shall not be required to comply with this Article 5.4.2 where the **City Agency** letting this **Contract** makes a written finding, which is approved, in writing, by the DEP Commissioner, that a sufficient quantity of Ultra Low Sulfur Diesel Fuel, or diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm) is not available to meet the requirements of Section 24-163.3 of the Administrative Code, provided that such **Contractor** in its fulfillment of the

requirements of this **Contract**, to the extent practicable, shall use whatever quantity of Ultra Low Sulfur Diesel Fuel or diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm) is available. Any finding made pursuant to this Article 5.4.2(c) shall expire after sixty (60) **Days**, at which time the requirements of this Article 5.4.2 shall be in full force and effect unless the **City Agency** renews the finding in writing and such renewal is approved by the DEP Commissioner.

5.4.2(d) **Contractors** may check on determinations and approvals issued by the DEP Commissioner pursuant to Section 24-163.3 of the Administrative Code, if any, at www.dep.nyc.gov or by contacting the **City Agency** letting this **Contract**.

5.4.2(e) The requirements of this Article 5.4.2 do not apply where they are precluded by federal or State funding requirements or where the **Contract** is an emergency procurement.

5.4.3 Best Available Technology

5.4.3(a) All **Contractors** shall utilize the best available technology for reducing the emission of pollutants for diesel-powered Nonroad Vehicles in the performance of this **Contract**. For determinations of best available technology for each type of diesel-powered Nonroad Vehicle, **Contractors** shall comply with the regulations of the **City** Department of Environmental Protection, as and when adopted, Chapter 14 of Title 15 of the Rules of the City of New York (RCNY). The **Contractor** shall fully document all steps in the best available technology selection process and shall furnish such documentation to the **City Agency** or the DEP Commissioner upon request. The **Contractor** shall retain all documentation generated in the best available technology selection process for as long as the selected best available technology is in use.

5.4.3(b) No **Contractor** shall be required to replace best available technology for reducing the emission of pollutants or other authorized technology utilized for a diesel-powered Nonroad Vehicle in accordance with the provisions of this Article 5.4.3 within three (3) years of having first utilized such technology for such vehicle.

5.4.3(c) This Article 5.4.3 shall not apply to any vehicle used to satisfy the requirements of a specific Public Works Contract for fewer than twenty (20) **Days**.

5.4.3(d) The **Contractor** shall not be required to comply with this Article 5.4.3 with respect to a diesel-powered Nonroad Vehicle under the following circumstances:

5.4.3(d)(i) Where the **City Agency** makes a written finding, which is approved, in writing, by the DEP Commissioner, that the best available technology for reducing the emission of pollutants as required by this Article 5.4.3 is unavailable for such vehicle, the **Contractor** shall use whatever technology for reducing the emission of pollutants, if any, is available and appropriate for such vehicle.

5.4.3(d)(ii) Where the DEP Commissioner has issued a written waiver based upon the **Contractor** having demonstrated to the DEP Commissioner that the use of the best available technology for reducing the emission of pollutants might endanger the operator of such vehicle or those working near such vehicle, due to engine malfunction, the **Contractor** shall use whatever technology for

reducing the emission of pollutants, if any, is available and appropriate for such vehicle, which would not endanger the operator of such vehicle or those working near such vehicle.

5.4.3(d)(iii) In determining which technology to use for the purposes of Articles 5.4.3(d)(i) and 5.4.3(d)(ii) above, the **Contractor** shall primarily consider the reduction in emissions of particulate matter and secondarily consider the reduction in emissions of nitrogen oxides associated with the use of such technology, which shall in no event result in an increase in the emissions of either such pollutant.

5.4.3(d)(iv) The **Contractor** shall submit requests for a finding or a waiver pursuant to this Article 5.4.3(d) in writing to the DEP Commissioner, with a copy to the **ACCO** of the **City Agency** letting this **Contract**. Any finding or waiver made or issued pursuant to Articles 5.4.3(d)(i) and 5.4.3(d)(ii) above shall expire after one hundred eighty (180) **Days**, at which time the requirements of Article 5.4.3(a) shall be in full force and effect unless the **City Agency** renews the finding, in writing, and the DEP Commissioner approves such finding, in writing, or the DEP Commissioner renews the waiver, in writing.

5.4.3(e) The requirements of this Article 5.4.3 do not apply where they are precluded by federal or State funding requirements or where the **Contract** is an emergency procurement.

5.4.4 Section 24-163 of the Administrative Code. The **Contractor** shall comply with Section 24-163 of the Administrative Code related to the idling of the engines of motor vehicles while parking.

5.4.5 Compliance

5.4.5(a) The **Contractor's** compliance with Article 5.4 may be independently monitored. If it is determined that the **Contractor** has failed to comply with any provision of Article 5.4, any costs associated with any independent monitoring incurred by the **City** shall be reimbursed by the **Contractor**.

5.4.5(b) Any **Contractor** who violates any provision of Article 5.4, except as provided in Article 5.4.5(c) below, shall be liable for a civil penalty between the amounts of one thousand (\$1,000) and ten thousand (\$10,000) dollars, in addition to twice the amount of money saved by such **Contractor** for failure to comply with Article 5.4.

5.4.5(c) No **Contractor** shall make a false claim with respect to the provisions of Article 5.4 to a **City Agency**. Where a **Contractor** has been found to have done so, such **Contractor** shall be liable for a civil penalty of twenty thousand (\$20,000) dollars, in addition to twice the amount of money saved by such **Contractor** in association with having made such false claim.

5.4.6 Reporting

5.4.6(a) For all Public Works Contracts covered by this Article 5.4, the **Contractor** shall report to the **City Agency** the following information:

5.4.6(a)(i) The total number of diesel-powered Nonroad Vehicles used to fulfill the requirements of this Public Works Contract;

5.4.6(a)(ii) The number of such Nonroad Vehicles that were powered by Ultra Low Sulfur Diesel Fuel;

5.4.6(a)(iii) The number of such Nonroad Vehicles that utilized the best available technology for reducing the emission of pollutants, including a breakdown by vehicle model and the type of technology;

5.4.6(a)(iv) The number of such Nonroad Vehicles that utilized such other authorized technology in accordance with Article 5.4.3, including a breakdown by vehicle model and the type of technology used for each such vehicle;

5.4.6(a)(v) The locations where such Nonroad Vehicles were used; and

5.4.6(a)(vi) Where a determination is in effect pursuant to Article 5.4.2(b) or 5.4.2(c), detailed information concerning the **Contractor's** efforts to obtain Ultra Low Sulfur Diesel Fuel or diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm).

5.4.6(b) The **Contractor** shall submit the information required by Article 5.4.6(a) at the completion of **Work** under the Public Works Contract and on a yearly basis no later than August 1 throughout the term of the Public Works Contract. The yearly report shall cover **Work** performed during the preceding fiscal year (July 1 - June 30).

5.5 Ultra Low Sulfur Diesel Fuel. In accordance with the Coordinated Construction Act for Lower Manhattan, as amended:

5.5.1 Definitions. For purposes of this Article 5.5, the following definitions apply:

5.5.1(a) "Lower Manhattan" means the area to the south of and within the following lines: a line beginning at a point where the United States pierhead line in the Hudson River as it exists now or may be extended would intersect with the southerly line of West Houston Street in the Borough of Manhattan extended, thence easterly along the southerly side of West Houston Street to the southerly side of Houston Street, thence easterly along the southerly side of Houston Street to the southerly side of East Houston Street, thence northeasterly along the southerly side of East Houston Street to the point where it would intersect with the United States pierhead line in the East River as it exists now or may be extended, including tax lots within or immediately adjacent thereto.

5.5.1(b) "Lower Manhattan Redevelopment Project" means any project in Lower Manhattan that is funded in whole or in part with federal or State funding, or any project intended to improve transportation between Lower Manhattan and the two air terminals in the **City** known as LaGuardia Airport and John F. Kennedy International Airport, or between Lower Manhattan and the air terminal in Newark known as Newark Liberty International Airport, and that is funded in whole or in part with federal funding.

5.5.1(c) “Nonroad Engine” means an internal combustion engine (including the fuel system) that is not used in a Motor Vehicle or a vehicle used solely for competition, or that is not subject to standards promulgated under Section 7411 or Section 7521 of Title 42 of the United States Code, except that this term shall apply to internal combustion engines used to power generators, compressors or similar equipment used in any construction program or project.

5.5.1(d) “Nonroad Vehicle” means a vehicle that is powered by a Nonroad Engine, fifty (50) horsepower (HP) and greater, and that is not a Motor Vehicle or a vehicle used solely for competition, which shall include, but not be limited to, excavators, backhoes, cranes, compressors, generators, bulldozers, and similar equipment, except that this terms shall not apply to horticultural maintenance vehicles used for landscaping purposes that are powered by a Nonroad Engine of sixty-five (65) HP or less and that are not used in any construction program or project.

5.5.1(e) “Ultra Low Sulfur Diesel Fuel” means diesel fuel that has a sulfur content of no more than fifteen parts per million (15 ppm).

5.5.2 Requirements. **Contractors** and **Subcontractors** are required to use only Ultra Low Sulfur Diesel Fuel to power the diesel-powered Nonroad Vehicles with engine HP rating of fifty (50) HP and above used on a Lower Manhattan Redevelopment Project and, where practicable, to reduce the emission of pollutants by retrofitting such Nonroad Vehicles with oxidation catalysts, particulate filters, or technology that achieves lowest particulate matter emissions.

5.6 Pesticides. In accordance with Section 17-1209 of the Administrative Code, to the extent that the **Contractor** or any **Subcontractor** applies pesticides to any property owned or leased by the **City**, the **Contractor**, and any **Subcontractor** shall comply with Chapter 12 of the Administrative Code.

5.7 Waste Treatment, Storage, and Disposal Facilities and Transporters. In connection with the **Work**, the **Contractor** and any **Subcontractor** shall use only those waste treatment, storage, and disposal facilities and waste transporters that possess the requisite license, permit or other governmental approval necessary to treat, store, dispose, or transport the waste, materials or hazardous substances.

5.8 Environmentally Preferable Purchasing. The **Contractor** shall ensure that products purchased or leased by the **Contractor** or any **Subcontractor** for the **Work** that are not specified by the **City** or are submitted as equivalents to a product specified by the **City** comply with the requirements of the New York City Environmentally Preferable Purchasing Program contained in Chapter 11 of Title 43 of the RCNY, pursuant to Chapter 3 of Title 6 of the Administrative Code.

ARTICLE 6. INSPECTION

6.1 During the progress of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall at all times afford the representatives of the **City** every reasonable, safe, and proper facility for inspecting all **Work** done or being done at the **Site** and also for inspecting the manufacture or preparation of materials and equipment at the place of such manufacture or preparation.

6.2 The **Contractor’s** obligation hereunder shall include the uncovering or taking down of finished **Work** and its restoration thereafter; provided, however, that the order to uncover, take down and restore shall be in writing, and further provided that if **Work** thus exposed proves satisfactory, and if the **Contractor** has complied with Article 6.1, such uncovering or taking down and restoration shall be

considered an item of **Extra Work** to be paid for in accordance with the provisions of Article 26. If the **Work** thus exposed proves unsatisfactory, the **City** has no obligation to compensate the **Contractor** for the uncovering, taking down or restoration.

6.3 Inspection and approval by the **Commissioner**, the **Engineer**, **Project Manager**, or **Resident Engineer**, of finished **Work** or of **Work** being performed, or of materials and equipment at the place of manufacture or preparation, shall not relieve the **Contractor** of its obligation to perform the **Work** in strict accordance with the **Contract**. Finished or unfinished **Work** not found to be in strict accordance with the **Contract** shall be replaced as directed by the **Engineer**, even though such **Work** may have been previously approved and paid for. Such corrective **Work** is **Contract Work** and shall not be deemed **Extra Work**.

6.4 Rejected **Work** and materials shall be promptly taken down and removed from the **Site**, which must at all times be kept in a reasonably clean and neat condition.

ARTICLE 7. PROTECTION OF WORK AND OF PERSONS AND PROPERTY; NOTICES AND INDEMNIFICATION

7.1 During the performance of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall be under an absolute obligation to protect the finished and unfinished **Work** against any damage, loss, injury, theft and/or vandalism and in the event of such damage, loss, injury, theft and/or vandalism, it shall promptly replace and/or repair such **Work** at the **Contractor's** sole cost and expense, as directed by the **Resident Engineer**. The obligation to deliver finished **Work** in strict accordance with the **Contract** prior to **Final Acceptance** shall be absolute and shall not be affected by the **Resident Engineer's** approval of, or failure to prohibit, the **Means and Methods of Construction** used by the **Contractor**.

7.2 During the performance of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall take all reasonable precautions to protect all persons and the property of the **City** and of others from damage, loss or injury resulting from the **Contractor's**, and/or its **Subcontractors'** operations under this **Contract**. The **Contractor's** obligation to protect shall include the duty to provide, place or replace, and adequately maintain at or about the **Site** suitable and sufficient protection such as lights, barricades, and enclosures.

7.3 The **Contractor** shall comply with the notification requirements set forth below in the event of any loss, damage or injury to **Work**, persons or property, or any accidents arising out of the operations of the **Contractor** and/or its **Subcontractors** under this **Contract**.

7.3.1 The **Contractor** shall make a full and complete report in writing to the **Resident Engineer** within three (3) **Days** after the occurrence.

7.3.2 The **Contractor** shall also send written notice of any such event to all insurance carriers that issued potentially responsive policies (including commercial general liability insurance carriers for events relating to the **Contractor's** own employees) no later than twenty (20) days after such event and again no later than twenty (20) days after the initiation of any claim and/or action resulting therefrom. Such notice shall contain the following information: the number of the insurance policy, the name of the Named Insured, the date and location of the incident, and the identity of the persons injured or property damaged. For any policy on which the **City** and/or the **Engineer**, **Architect**, or **Project Manager** are Additional Insureds, such notice shall expressly specify that "this notice is

being given on behalf of the City of New York as Additional Insured, such other Additional Insureds, as well as the Named Insured.”

7.3.2(a) Whenever such notice is sent under a policy on which the **City** is an Additional Insured, the **Contractor** shall provide copies of the notice to the **Comptroller**, the **Commissioner** and the **City** Corporation Counsel. The copy to the **Comptroller** shall be sent to the Insurance Unit, NYC Comptroller’s Office, 1 Centre Street – Room 1222, New York, New York, 10007. The copy to the **Commissioner** shall be sent to the address set forth in Schedule A of the General Conditions. The copy to the **City** Corporation Counsel shall be sent to Insurance Claims Specialist, Affirmative Litigation Division, New York City Law Department, 100 Church Street, New York, New York 10007.

7.3.2(b) If the **Contractor** fails to provide any of the foregoing notices to any appropriate insurance carrier(s) in a timely and complete manner, the **Contractor** shall indemnify the **City** for all losses, judgments, settlements, and expenses, including reasonable attorneys’ fees, arising from an insurer’s disclaimer of coverage citing late notice by or on behalf of the **City**.

7.4 To the fullest extent permitted by law, the **Contractor** shall defend, indemnify, and hold the **City**, its employees, and officials (the “Indemnitees”) harmless against any and all claims (including but not limited to claims asserted by any employee of the **Contractor** and/or its **Subcontractors**) and costs and expenses of whatever kind (including but not limited to payment or reimbursement of attorneys’ fees and disbursements) allegedly arising out of or in any way related to the operations of the **Contractor** and/or its **Subcontractors** in the performance of this **Contract** or from the **Contractor’s** and/or its **Subcontractors’** failure to comply with any of the provisions of this **Contract** or of the **Law**. Such costs and expenses shall include all those incurred in defending the underlying claim and those incurred in connection with the enforcement of this Article 7.4 by way of cross-claim, third-party claim, declaratory action or otherwise. The parties expressly agree that the indemnification obligation hereunder contemplates (1) full indemnity in the event of liability imposed against the Indemnitees without negligence and solely by reason of statute, operation of **Law** or otherwise; and (2) partial indemnity in the event of any actual negligence on the part of the Indemnitees either causing or contributing to the underlying claim (in which case, indemnification will be limited to any liability imposed over and above that percentage attributable to actual fault whether by statute, by operation of **Law**, or otherwise). Where partial indemnity is provided hereunder, all costs and expenses shall be indemnified on a pro rata basis.

7.4.1 Indemnification under Article 7.4 or any other provision of the **Contract** shall operate whether or not **Contractor** or its **Subcontractors** have placed and maintained the insurance specified under Article 22.

7.5 The provisions of this Article 7 shall not be deemed to create any new right of action in favor of third parties against the **Contractor** or the **City**.

CHAPTER III: TIME PROVISIONS

ARTICLE 8. COMMENCEMENT AND PROSECUTION OF THE WORK

8.1 The **Contractor** shall commence the **Work** on the date specified in the **Notice to Proceed** or the **Order to Work**. The time for performance of the **Work** under the **Contract** shall be computed from

the date specified in the **Notice to Proceed** or the **Order to Work**. **TIME BEING OF THE ESSENCE** to the **City**, the **Contractor** shall thereafter prosecute the **Work** diligently, using such **Means and Methods of Construction** as are in accord with Article 4 herein and as will assure its completion not later than the date specified in this Contract, or on the date to which the time for completion may be extended.

ARTICLE 9. PROGRESS SCHEDULES

9.1 To enable the **Work** to be performed in an orderly and expeditious manner, the **Contractor**, within fifteen (15) **Days** after the **Notice to Proceed** or **Order to Work**, unless otherwise directed by the **Engineer**, shall submit to the **Engineer** a proposed progress schedule based on the Critical Path Method in the form of a bar graph or in such other form as specified by the **Engineer**, and monthly cash flow requirements, showing:

9.1.1 The anticipated time of commencement and completion of each of the various operations to be performed under this **Contract**; and

9.1.2 The sequence and interrelation of each of these operations with the others and with those of other related contracts; and

9.1.3 The estimated time required for fabrication or delivery, or both, of all materials and equipment required for the **Work**, including the anticipated time for obtaining required approvals pursuant to Article 10; and

9.1.4 The estimated amount in dollars the **Contractor** will claim on a monthly basis.

9.2 The proposed schedule shall be revised as directed by the **Engineer**, until finally approved by the **Engineer**, and after such approval, subject to the provisions of Article 11, shall be strictly adhered to by the **Contractor**.

9.3 If the **Contractor** shall fail to adhere to the approved progress schedule, or to the schedule as revised pursuant to Article 11, it shall promptly adopt such other or additional **Means and Methods of Construction**, at its sole cost and expense, as will make up for the time lost and will assure completion in accordance with the approved progress schedule. The approval by the **City** of a progress schedule which is shorter than the time allotted under the **Contract** shall not create any liability for the **City** if the approved progress schedule is not met.

9.4 The **Contractor** will not receive any payments until the proposed progress schedule is submitted.

ARTICLE 10. REQUESTS FOR INFORMATION OR APPROVAL

10.1 From time to time as the **Work** progresses and in the sequence indicated by the approved progress schedule, the **Contractor** shall submit to the **Engineer** a specific request in writing for each item of information or approval required by the **Contractor**. These requests shall state the latest date upon which the information or approval is actually required by the **Contractor**, and shall be submitted in a reasonable time in advance thereof to provide the **Engineer** a sufficient time to act upon such submissions, or any necessary re-submissions thereof.

10.2 The **Contractor** shall not have any right to an extension of time on account of delays due to the **Contractor's** failure to submit requests for the required information or the required approval in accordance with the above requirements.

ARTICLE 11. NOTICE OF CONDITIONS CAUSING DELAY AND DOCUMENTATION OF DAMAGES CAUSED BY DELAY

11.1 After the commencement of any condition which is causing or may cause a delay in completion of the **Work**, including conditions for which the **Contractor** may be entitled to an extension of time, the following notifications and submittals are required:

11.1.1 Within fifteen (15) **Days** after the **Contractor** becomes aware or reasonably should be aware of each such condition, the **Contractor** must notify the **Resident Engineer** or **Engineer**, as directed by the **Commissioner**, in writing of the existence, nature and effect of such condition upon the approved progress schedule and the **Work**, and must state why and in what respects, if any, the condition is causing or may cause a delay. Such notice shall include a description of the construction activities that are or could be affected by the condition and may include any recommendations the **Contractor** may have to address the delay condition and any activities the **Contractor** may take to avoid or minimize the delay.

11.1.2 If the **Contractor** shall claim to be sustaining damages for delay as provided for in this Article 11, within forty-five (45) **Days** from the time such damages are first incurred for each such condition, the **Contractor** shall submit to the **Commissioner** a verified written statement of the details and estimates of the amounts of such damages, including categories of expected damages and projected monthly costs, together with documentary evidence of such damages as the **Contractor** may have at the time of submission ("statement of delay damages"), as further detailed in Article 11.6. The **Contractor** may submit the above statement within such additional time as may be granted by the **Commissioner** in writing upon written request therefor.

11.1.3 Articles 11.1.1 and 11.1.2 do not relieve the **Contractor** of its obligation to comply with the provisions of Article 44.

11.2 Failure of the **Contractor** to strictly comply with the requirements of Article 11.1.1 may, in the discretion of the **Commissioner**, be deemed sufficient cause to deny any extension of time on account of delay arising out of such condition. Failure of the **Contractor** to strictly comply with the requirements of both Articles 11.1.1 and 11.1.2 shall be deemed a conclusive waiver by the **Contractor** of any and all claims for damages for delay arising from such condition and no right to recover on such claims shall exist.

11.3 When appropriate and directed by the **Engineer**, the progress schedule shall be revised by the **Contractor** until finally approved by the **Engineer**. The revised progress schedule must be strictly adhered to by the **Contractor**.

11.4 Compensable Delays

11.4.1 The **Contractor** agrees to make claim only for additional costs attributable to delay in the performance of this **Contract** necessarily extending the time for completion of the **Work** or resulting from acceleration directed by the **Commissioner** and required to maintain the progress schedule, occasioned solely by any act or omission to act of the **City** listed below. The **Contractor** also agrees that delay from any other cause shall be

compensated, if at all, solely by an extension of time to complete the performance of the **Work**.

11.4.1.1 The failure of the **City** to take reasonable measures to coordinate and progress the **Work** to the extent required by the **Contract**, except that the City shall not be responsible for the **Contractor's** obligation to coordinate and progress the **Work** of its **Subcontractors**.

11.4.1.2 Unreasonable delays attributable to the review of shop drawings, the issuance of change orders, or the cumulative impact of change orders that were not brought about by any act or omission of the **Contractor**.

11.4.1.3 The unavailability of the **Site** caused by acts or omissions of the **City**.

11.4.1.4 The issuance by the **Engineer** of a stop work order that was not brought about through any act or omission of the **Contractor**.

11.4.1.5 Differing site conditions or environmental hazards that were neither known nor reasonably ascertainable on a pre-bid inspection of the **Site** or review of the bid documents or other publicly available sources, and that are not ordinarily encountered in the **Project's** geographical area or neighborhood or in the type of **Work** to be performed.

11.4.1.6 Delays caused by the **City's** bad faith or its willful, malicious, or grossly negligent conduct;

11.4.1.7 Delays not contemplated by the parties;

11.4.1.8 Delays so unreasonable that they constitute an intentional abandonment of the **Contract** by the **City**; and

11.4.1.9 Delays resulting from the **City's** breach of a fundamental obligation of the **Contract**.

11.4.2 No claim may be made for any alleged delay in **Substantial Completion** of the **Work** if the **Work** will be or is substantially completed by the date of **Substantial Completion** provided for in Schedule A unless acceleration has been directed by the **Commissioner** to meet the date of **Substantial Completion** set forth in Schedule A, or unless there is a provision in the **Contract** providing for additional compensation for early completion.

11.4.3 The provisions of this Article 11 apply only to claims for additional costs attributable to delay and do not preclude determinations by the **Commissioner** allowing reimbursements for additional costs for **Extra Work** pursuant to Articles 25 and 26 of this **Contract**. To the extent that any cost attributable to delay is reimbursed as part of a change order, no additional claim for compensation under this Article 11 shall be allowed.

11.5 Non-Compensable Delays. The **Contractor** agrees to make no claim for, and is deemed to have included in its bid prices for the various items of the **Contract**, the extra/additional costs attributable to any delays caused by or attributable to the items set forth below. For such items, the **Contractor** shall be compensated, if at all, solely by an extension of time to complete the performance of the **Work**, in accordance with the provisions of Article 13. Such extensions of time will be granted, if at all, pursuant to the grounds set forth in Article 13.3.

11.5.1 The acts or omissions of any third parties, including but not limited to **Other Contractors**, public/ governmental bodies (other than **City Agencies**), utilities or private enterprises, who are disclosed in the **Contract Documents** or are ordinarily encountered or generally recognized as related to the **Work**;

11.5.2 Any situation which was within the contemplation of the parties at the time of entering into the **Contract**, including any delay indicated or disclosed in the **Contract Documents** or that would be generally recognized by a reasonably prudent contractor as related to the nature of the **Work**, and/or the existence of any facility or appurtenance owned, operated or maintained by any third party, as indicated or disclosed in the **Contract Documents** or ordinarily encountered or generally recognized as related to the nature of the **Work**;

11.5.3 Restraining orders, injunctions or judgments issued by a court which were caused by a Contractor's submission, action or inaction or by a Contractor's **Means and Methods of Construction**, or by third parties, unless such order, injunction or judgment was the result of an act or omission by the **City**;

11.5.4 Any labor boycott, strike, picketing, lockout or similar situation;

11.5.5 Any shortages of supplies or materials, or unavailability of equipment, required by the **Contract Work**;

11.5.6 Climatic conditions, storms, floods, droughts, tidal waves, fires, hurricanes, earthquakes, landslides or other catastrophes or acts of God, or acts of war or of the public enemy or terrorist acts, including the **City's** reasonable responses thereto; and

11.5.7 **Extra Work** which does not significantly affect the overall completion of the **Contract**, reasonable delays in the review or issuance of change orders or field orders and/or in shop drawing reviews or approvals.

11.6 Required Content of Submission of Statement of Delay Damages

11.6.1 In the verified written statement of delay damages required by Article 11.1.2, the following information shall be provided by the **Contractor**:

11.6.1.1 For each delay, the start and end dates of the claimed periods of delay and, in addition, a description of the operations that were delayed, an explanation of how they were delayed, and the reasons for the delay, including identifying the applicable act or omission of the City listed in Article 11.4.

11.6.1.2 A detailed factual statement of the claim providing all necessary dates, locations and items of **Work** affected by the claim.

11.6.1.3 The estimated amount of additional compensation sought and a breakdown of that amount into categories as described in Article 11.7.

11.6.1.4 Any additional information requested by the **Commissioner**.

11.7 Recoverable Costs

11.7.1 Delay damages may be recoverable for the following costs actually and necessarily incurred in the performance of the **Work**:

11.7.1.1 Direct labor, including payroll taxes (subject to statutory wage caps) and supplemental benefits, based on time and materials records;

11.7.1.2 Necessary materials (including transportation to the **Site**), based on time and material records;

- 11.7.1.3 Reasonable rental value of necessary plant and equipment other than small tools, plus fuel/energy costs according to the applicable formula set forth in Articles 26.2.4 and/or 26.2.8, based on time and material records;
- 11.7.1.4 Additional insurance and bond costs;
- 11.7.1.5 Extended **Site** overhead, field office rental, salaries of field office staff, on-site project managers and superintendents, field office staff vehicles, **Project**-specific storage, field office utilities and telephone, and field office consumables;
- 11.7.1.6 Labor escalation costs based on actual costs;
- 11.7.1.7 Materials and equipment escalation costs based on applicable industry indices unless documentation of actual increased cost is provided;
- 11.7.1.8 Additional material and equipment storage costs based on actual documented costs and additional costs necessitated by extended manufacturer warranty periods; and
- 11.7.1.9 Extended home office overhead calculated based on the following formula:
 - (1) Subtract from the original **Contract** amount the amount earned by original contractual **Substantial Completion** date (not including change orders);
 - (2) Remove 15% overhead and profit from the calculation in item (1) by dividing the results of item (1) by 1.15;
 - (3) Multiply the result of item (2) by 7.25% for the total home office overhead;
 - (4) Multiply the result of item (3) by 7.25% for the total profit; and
 - (5) The total extended home office overhead will be the total of items (3) and (4).

11.7.2 Recoverable Subcontractor Costs. When the **Work** is performed by a **Subcontractor**, the **Contractor** may be paid the actual and necessary costs of such subcontracted **Work** as outlined above in Articles 11.7.1.1 through 11.7.1.8, and an additional overhead of 5% of the costs outlined in Articles 11.7.1.1 through 11.7.1.3.

11.7.3 Non-Recoverable Costs. The parties agree that the **City** will have no liability for the following items and the **Contractor** agrees it shall make no claim for the following items:

- 11.7.3.1 Profit, or loss of anticipated or unanticipated profit, except as provided in Article 11.7.1.9;
- 11.7.3.2 Consequential damages, including, but not limited to, construction or bridge loans or interest paid on such loans, loss of bonding capacity, bidding opportunities, or interest in investment, or any resulting insolvency;
- 11.7.3.3 Indirect costs or expenses of any nature except those included in Article 11.7.1;
- 11.7.3.4 Direct or indirect costs attributable to performance of **Work** where the **Contractor**, because of situations or conditions within its control, has not progressed the **Work** in a satisfactory manner; and
- 11.7.3.5 Attorneys' fees and dispute and claims preparation expenses.

- 11.8 Any claims for delay under this Article 11 are not subject to the jurisdiction of the Contract Dispute Resolution Board pursuant to the dispute resolution process set forth in Article 27.
- 11.9 Any compensation provided to the **Contractor** in accordance with this Article 11 will be made pursuant to a claim filed with the **Comptroller**. Nothing in this Article 11 extends the time for the **Contractor** to file an action with respect to a claim within six months after **Substantial Completion** pursuant to Article 56.

ARTICLE 12. COORDINATION WITH OTHER CONTRACTORS

12.1 During the progress of the **Work**, **Other Contractors** may be engaged in performing other work or may be awarded other contracts for additional work on this **Project**. In that event, the **Contractor** shall coordinate the **Work** to be done hereunder with the work of such **Other Contractors** and the **Contractor** shall fully cooperate with such **Other Contractors** and carefully fit its own **Work** to that provided under other contracts as may be directed by the **Engineer**. The **Contractor** shall not commit or permit any act which will interfere with the performance of work by any **Other Contractors**.

12.2 If the **Engineer** determines that the **Contractor** is failing to coordinate its **Work** with the work of **Other Contractors** as the **Engineer** has directed, then the **Commissioner** shall have the right to withhold any payments otherwise due hereunder until the **Contractor** completely complies with the **Engineer's** directions.

12.3 The **Contractor** shall notify the **Engineer** in writing if any **Other Contractor** on this **Project** is failing to coordinate its work with the **Work** of this **Contract**. If the **Engineer** finds such charges to be true, the **Engineer** shall promptly issue such directions to the **Other Contractor** with respect thereto as the situation may require. The **City** shall not, however, be liable for any damages suffered by any **Other Contractor's** failure to coordinate its work with the **Work** of this **Contract** or by reason of the **Other Contractor's** failure to promptly comply with the directions so issued by the **Engineer**, or by reason of any **Other Contractor's** default in performance, it being understood that the **City** does not guarantee the responsibility or continued efficiency of any contractor. The **Contractor** agrees to make no claim against the **City** for any damages relating to or arising out of any directions issued by the **Engineer** pursuant to this Article 12 (including but not limited to the failure of any **Other Contractor** to comply or promptly comply with such directions), or the failure of any **Other Contractor** to coordinate its work, or the default in performance of any **Other Contractor**.

12.4 The **Contractor** shall indemnify and hold the **City** harmless from any and all claims or judgments for damages and from costs and expenses to which the **City** may be subjected or which it may suffer or incur by reason of the **Contractor's** failure to comply with the **Engineer's** directions promptly; and the **Comptroller** shall have the right to exercise the powers reserved in Article 23 with respect to any claims which may be made for damages due to the **Contractor's** failure to comply with the **Engineer's** directions promptly. Insofar as the facts and **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent provided by **Law**.

12.5 Should the **Contractor** sustain any damage through any act or omission of any **Other Contractor** having a contract with the **City** for the performance of work upon the **Site** or of work which may be necessary to be performed for the proper prosecution of the **Work** to be performed hereunder, or through any act or omission of a subcontractor of such **Other Contractor**, the **Contractor** shall have no claim against the **City** for such damage, but shall have a right to recover such damage from the **Other**

Contractor under the provision similar to the following provisions which apply to this **Contract** and have been or will be inserted in the contracts with such **Other Contractors**:

12.5.1 Should any **Other Contractor** having or who shall hereafter have a contract with the **City** for the performance of work upon the **Site** sustain any damage through any act or omission of the **Contractor** hereunder or through any act or omission of any **Subcontractor** of the **Contractor**, the **Contractor** agrees to reimburse such **Other Contractor** for all such damages and to defend at its own expense any action based upon such claim and if any judgment or claim (even if the allegations of the action are without merit) against the **City** shall be allowed the **Contractor** shall pay or satisfy such judgment or claim and pay all costs and expenses in connection therewith and agrees to indemnify and hold the **City** harmless from all such claims. Insofar as the facts and **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent provided by **Law**.

12.6 The **City's** right to indemnification hereunder shall in no way be diminished, waived or discharged by its recourse to assessment of liquidated damages as provided in Article 15, or by the exercise of any other remedy provided for by **Contract** or by **Law**.

ARTICLE 13. EXTENSION OF TIME FOR PERFORMANCE

13.1 If performance by the **Contractor** is delayed for a reason set forth in Article 13.3, the **Contractor** may be allowed a reasonable extension of time in conformance with this Article 13 and the **PPB Rules**.

13.2 Any extension of time may be granted only by the **ACCO** or by the Board for the Extension of Time (hereafter "Board") (as set forth below) upon written application by the **Contractor**.

13.3 Grounds for Extension: If such application is made, the **Contractor** shall be entitled to an extension of time for delay in completion of the **Work** caused solely:

13.3.1 By the acts or omissions of the **City**, its officials, agents or employees; or

13.3.2 By the act or omissions of **Other Contractors** on this **Project**; or

13.3.3 By supervening conditions entirely beyond the control of either party hereto (such as, but not limited to, acts of God or the public enemy, excessive inclement weather, war or other national emergency making performance temporarily impossible or illegal, or strikes or labor disputes not brought about by any act or omission of the **Contractor**).

13.3.4 The **Contractor** shall, however, be entitled to an extension of time for such causes only for the number of **Days** of delay which the **ACCO** or the Board may determine to be due solely to such causes, and then only if the **Contractor** shall have strictly complied with all of the requirements of Articles 9 and 10.

13.4 The **Contractor** shall not be entitled to receive a separate extension of time for each of several causes of delay operating concurrently, but, if at all, only for the actual period of delay in completion of the **Work** as determined by the **ACCO** or the Board, irrespective of the number of causes contributing to produce such delay. If one of several causes of delay operating concurrently results from any act, fault or omission of the **Contractor** or of its **Subcontractors** or **Materialmen**, and would of itself (irrespective

of the concurrent causes) have delayed the **Work**, no extension of time will be allowed for the period of delay resulting from such act, fault or omission.

13.5 The determination made by the **ACCO** or the Board on an application for an extension of time shall be binding and conclusive on the **Contractor**.

13.6 The **ACCO** or the Board acting entirely within their discretion may grant an application for an extension of time for causes of delay other than those herein referred.

13.7 Permitting the **Contractor** to continue with the **Work** after the time fixed for its completion has expired, or after the time to which such completion may have been extended has expired, or the making of any payment to the **Contractor** after such time, shall in no way operate as a waiver on the part of the **City** of any of its rights under this **Contract**.

13.8 Application for Extension of Time:

13.8.1 Before the **Contractor's** time extension request will be considered, the **Contractor** shall notify the **ACCO** of the condition which allegedly has caused or is causing the delay, and shall submit a written application to the **ACCO** identifying:

13.8.1(a) The **Contractor**; the registration number; and **Project** description;

13.8.1(b) Liquidated damage assessment rate, as specified in the **Contract**;

13.8.1(c) Original total bid price;

13.8.1(d) The original **Contract** start date and completion date;

13.8.1(e) Any previous time extensions granted (number and duration); and

13.8.1(f) The extension of time requested.

13.8.2 In addition, the application for extension of time shall set forth in detail:

13.8.2(a) The nature of each alleged cause of delay in completing the **Work**;

13.8.2(b) The date upon which each such cause of delay began and ended and the number of **Days** attributable to each such cause;

13.8.2(c) A statement that the **Contractor** waives all claims except for those delineated in the application, and the particulars of any claims which the **Contractor** does not agree to waive. For time extensions for **Substantial Completion** and final completion payments, the application shall include a detailed statement of the dollar amounts of each element of claim item reserved; and

13.8.2(d) A statement indicating the **Contractor's** understanding that the time extension is granted only for purposes of permitting continuation of **Contract** performance and payment for **Work** performed and that the **City** retains its right to conduct an investigation and assess liquidated damages as appropriate in the future.

13.9 Analysis and Approval of Time Extensions:

13.9.1 For time extensions for partial payments, a written determination shall be made by the **ACCO** who may, for good and sufficient cause, extend the time for the performance of the **Contract** as follows:

13.9.1(a) If the **Work** is to be completed within six (6) months, the time for performance may be extended for sixty (60) **Days**;

13.9.1(b) If the **Work** is to be completed within less than one (1) year but more than six (6) months, an extension of ninety (90) **Days** may be granted;

13.9.1(c) If the **Contract** period exceeds one (1) year, besides the extension granted in Article 13.9.1(b), an additional thirty (30) **Days** may be granted for each multiple of six (6) months involved beyond the one (1) year period; or

13.9.1(d) If exceptional circumstances exist, the **ACCO** may extend the time for performance beyond the extensions in Articles 13.9.1(a), 13.9.1(b), and 13.9.1(c). In that event, the **ACCO** shall file with the Mayor's Office of Contract Services a written explanation of the exceptional circumstances.

13.9.2 For extensions of time for **Substantial Completion** and final completion payments, the **Engineer**, in consultation with the **ACCO**, shall prepare a written analysis of the delay (including a preliminary determination of the causes of delay, the beginning and end dates for each such cause of delay, and whether the delays are excusable under the terms of this **Contract**). The report shall be subject to review by and approval of the Board, which shall have authority to question its analysis and determinations and request additional facts or documentation. The report as reviewed and made final by the Board shall be made a part of the **Agency** contract file. Neither the report itself nor anything contained therein shall operate as a waiver or release of any claim the **City** may have against the **Contractor** for either actual or liquidated damages.

13.9.3 Approval Mechanism for Time Extensions for **Substantial Completion** or Final Completion Payments: An extension shall be granted only with the approval of the Board which is comprised of the **ACCO** of the **Agency**, the **City** Corporation Counsel, and the **Comptroller**, or their authorized representatives.

13.9.4 Neither the granting of any application for an extension of time to the **Contractor** or any **Other Contractor** on this **Project** nor the papers, records or reports related to any application for or grant of an extension of time or determination related thereto shall be referred to or offered in evidence by the **Contractor** or its attorneys in any action or proceeding.

13.10 No Damage for Delay: The **Contractor** agrees to make no claim for damages for delay in the performance of this **Contract** occasioned by any act or omission to act of the **City** or any of its representatives, except as provided for in Article 11.

ARTICLE 14. COMPLETION AND FINAL ACCEPTANCE OF THE WORK

14.1 Date for **Substantial Completion**: The **Contractor** shall substantially complete the **Work** within the time fixed in Schedule A of the General Conditions, or within the time to which such **Substantial Completion** may be extended.

14.2 Determining the Date of **Substantial Completion**: The **Work** will be deemed to be substantially complete when the two conditions set forth below have been met.

14.2.1 Inspection: The **Engineer** or **Resident Engineer**, as applicable, has inspected the **Work** and has made a written determination that it is substantially complete.

14.2.2 Approval of **Final Approved Punch List** and Date for **Final Acceptance**: Following inspection of the **Work**, the **Engineer/Resident Engineer** shall furnish the **Contractor** with a final punch list, specifying all items of **Work** to be completed and proposing dates for the completion of each specified item of **Work**. The **Contractor** shall then submit in writing to the **Engineer/Resident Engineer** within ten (10) **Days** of the **Engineer/Resident Engineer** furnishing the final punch list either acceptance of the dates or proposed alternative dates for the completion of each specified item of **Work**. If the **Contractor** neither accepts the dates nor proposes alternative dates within ten (10) **Days**, the schedule proposed by the **Engineer/Resident Engineer** shall be deemed accepted. If the **Contractor** proposes alternative dates, then, within a reasonable time after receipt, the **Engineer/Resident Engineer**, in a written notification to the **Contractor**, shall approve the **Contractor's** completion dates or, if they are unable to agree, the **Engineer/Resident Engineer** shall establish dates for the completion of each item of **Work**. The latest completion date specified shall be the date for **Final Acceptance** of the **Work**.

14.3 Date of **Substantial Completion**. The date of approval of the **Final Approved Punch List**, shall be the date of **Substantial Completion**. The date of approval of the **Final Approved Punch List** shall be either (a) if the **Contractor** approves the final punch list and proposed dates for completion furnished by the **Engineer/Resident Engineer**, the date of the **Contractor's** approval; or (b) if the **Contractor** neither accepts the dates nor proposes alternative dates, ten (10) **Days** after the **Engineer/Resident Engineer** furnishes the **Contractor** with a final punch list and proposed dates for completion; or (c) if the **Contractor** proposes alternative dates, the date that the **Engineer/Resident Engineer** sends written notification to the **Contractor** either approving the **Contractor's** proposed alternative dates or establishing dates for the completion for each item of **Work**.

14.4 Determining the Date of **Final Acceptance**: The **Work** will be accepted as final and complete as of the date of the **Engineer's/Resident Engineer's** inspection if, upon such inspection, the **Engineer/Resident Engineer** finds that all items on the **Final Approved Punch List** are complete and no further **Work** remains to be done. The **Commissioner** will then issue a written determination of **Final Acceptance**.

14.5 Request for Inspection: Inspection of the **Work** by the **Engineer/Resident Engineer** for the purpose of **Substantial Completion** or **Final Acceptance** shall be made within fourteen (14) **Days** after receipt of the **Contractor's** written request therefor.

14.6 Request for Re-inspection: If upon inspection for the purpose of **Substantial Completion** or **Final Acceptance**, the **Engineer/Resident Engineer** determines that there are items of **Work** still to be performed, the **Contractor** shall promptly perform them and then request a re-inspection. If upon re-inspection, the **Engineer/Resident Engineer** determines that the **Work** is substantially complete or finally accepted, the date of such re-inspection shall be the date of **Substantial Completion** or **Final Acceptance**. Re-inspection by the **Engineer/Resident Engineer** shall be made within ten (10) **Days** after receipt of the **Contractor's** written request therefor.

14.7 Initiation of Inspection by the **Engineer/Resident Engineer**: If the **Contractor** does not request inspection or re-inspection of the **Work** for the purpose of **Substantial Completion** or **Final Acceptance**, the **Engineer/Resident Engineer** may initiate such inspection or re-inspection.

ARTICLE 15. LIQUIDATED DAMAGES

15.1 In the event the **Contractor** fails to substantially complete the **Work** within the time fixed for such **Substantial Completion** in Schedule A of the General Conditions, plus authorized time extensions, or if the **Contractor**, in the sole determination of the **Commissioner**, has abandoned the **Work**, the **Contractor** shall pay to the **City** the sum fixed in Schedule A of the General Conditions, for each and every **Day** that the time consumed in substantially completing the **Work** exceeds the time allowed therefor; which said sum, in view of the difficulty of accurately ascertaining the loss which the **City** will suffer by reason of delay in the **Substantial Completion** of the **Work** hereunder, is hereby fixed and agreed as the liquidated damages that the **City** will suffer by reason of such delay, and not as a penalty. This Article 15 shall also apply to the **Contractor** whether or not the **Contractor** is defaulted pursuant to Chapter X of this **Contract**. Neither the failure to assess liquidated damages nor the granting of any time extension shall operate as a waiver or release of any claim the **City** may have against the **Contractor** for either actual or liquidated damages.

15.2 Liquidated damages received hereunder are not intended to be nor shall they be treated as either a partial or full waiver or discharge of the **City's** right to indemnification, or the **Contractor's** obligation to indemnify the **City**, or to any other remedy provided for in this **Contract** or by **Law**.

15.3 The **Commissioner** may deduct and retain out of the monies which may become due hereunder, the amount of any such liquidated damages; and in case the amount which may become due hereunder shall be less than the amount of liquidated damages suffered by the **City**, the **Contractor** shall be liable to pay the difference.

ARTICLE 16. OCCUPATION OR USE PRIOR TO COMPLETION

16.1 Unless otherwise provided for in the **Specifications**, the **Commissioner** may take over, use, occupy or operate any part of the **Work** at any time prior to **Final Acceptance**, upon written notification to the **Contractor**. The **Engineer** or **Resident Engineer**, as applicable, shall inspect the part of the **Work** to be taken over, used, occupied, or operated, and will furnish the **Contractor** with a written statement of the **Work**, if any, which remains to be performed on such part. The **Contractor** shall not object to, nor interfere with, the **Commissioner's** decision to exercise the rights granted by Article 16. In the event the **Commissioner** takes over, uses, occupies, or operates any part of the **Work**:

16.1.1 the **Engineer/Resident Engineer** shall issue a written determination of **Substantial Completion** with respect to such part of the **Work**;

16.1.2 the **Contractor** shall be relieved of its absolute obligation to protect such part of the unfinished **Work** in accordance with Article 7;

16.1.3 the **Contractor's** guarantee on such part of the **Work** shall begin on the date of such use by the **City**; and;

16.1.4 the **Contractor** shall be entitled to a return of so much of the amount retained in accordance with Article 21 as it relates to such part of the **Work**, except so much thereof as may be retained under Articles 24 and 44.

CHAPTER IV: SUBCONTRACTS AND ASSIGNMENTS

ARTICLE 17. SUBCONTRACTS

17.1 The **Contractor** shall not make subcontracts totaling an amount more than the percentage of the total **Contract** price fixed in Schedule A of the General Conditions, without prior written permission from the **Commissioner**. All subcontracts made by the **Contractor** shall be in writing. No **Work** may be performed by a **Subcontractor** prior to the **Contractor** entering into a written subcontract with the **Subcontractor** and complying with the provisions of this Article 17.

17.2 Before making any subcontracts, the **Contractor** shall submit a written statement to the **Commissioner** giving the name and address of the proposed **Subcontractor**; the portion of the **Work** and materials which it is to perform and furnish; the cost of the subcontract; the VENDEX questionnaire if required; the proposed subcontract if requested by the **Commissioner**; and any other information tending to prove that the proposed **Subcontractor** has the necessary facilities, skill, integrity, past experience, and financial resources to perform the **Work** in accordance with the terms and conditions of this **Contract**.

17.3 In addition to the requirements in Article 17.2, **Contractor** is required to list the **Subcontractor** in the web based Subcontractor Reporting System through the City's Payee Information Portal (PIP), available at www.nyc.gov/pip.¹ For each **Subcontractor** listed, **Contractor** is required to provide the following information: maximum contract value, description of **Subcontractor's** Work, start and end date of the subcontract and identification of the **Subcontractor's** industry. Thereafter, **Contractor** will be required to report in the system the payments made to each **Subcontractor** within 30 days of making the payment. If any of the required information changes throughout the Term of the **Contract**, **Contractor** will be required to revise the information in the system.

Failure of the **Contractor** to list a **Subcontractor** and/or to report **Subcontractor** payments in a timely fashion may result in the **Commissioner** declaring the **Contractor** in default of the **Contract** and will subject **Contractor** to liquidated damages in the amount of \$100 per day for each day that the **Contractor** fails to identify a **Subcontractor** along with the required information about the **Subcontractor** and/or fails to report payments to a **Subcontractor**, beyond the time frames set forth herein or in the notice from the **City**. Article 15 shall govern the issue of liquidated damages.

17.4 If an approved **Subcontractor** elects to subcontract any portion of its subcontract, the proposed sub-subcontract shall be submitted in the same manner as directed above.

17.5 The **Commissioner** will notify the **Contractor** in writing whether the proposed **Subcontractor** is approved. If the proposed **Subcontractor** is not approved, the **Contractor** may submit another proposed **Subcontractor** unless the **Contractor** decides to do the **Work**. No **Subcontractor** shall be permitted to enter or perform any work on the **Site** unless approved.

17.6 Before entering into any subcontract hereunder, the **Contractor** shall provide the proposed **Subcontractor** with a complete copy of this document and inform the proposed **Subcontractor** fully and completely of all provisions and requirements of this **Contract** relating either directly or indirectly to the **Work** to be performed and the materials to be furnished under such subcontract, and every such

¹ In order to use the new system, a PIP account will be required. Detailed instructions on creating a PIP account and using the new system are also available at www.nyc.gov/pip. Additional assistance with PIP may be obtained by emailing the Financial Information Services Agency Help Desk at pip@fisa.nyc.gov.

Subcontractor shall expressly stipulate that all labor performed and materials furnished by the **Subcontractor** shall strictly comply with the requirements of this **Contract**.

17.7 Documents given to a prospective **Subcontractor** for the purpose of soliciting the **Subcontractor's** bid shall include either a copy of the bid cover or a separate information sheet setting forth the **Project** name, the **Contract** number (if available), the **Agency** (as noted in Article 2.1.6), and the **Project's** location.

17.8 The **Commissioner's** approval of a **Subcontractor** shall not relieve the **Contractor** of any of its responsibilities, duties, and liabilities hereunder. The **Contractor** shall be solely responsible to the **City** for the acts or defaults of its **Subcontractor** and of such **Subcontractor's** officers, agents, and employees, each of whom shall, for this purpose, be deemed to be the agent or employee of the **Contractor** to the extent of its subcontract.

17.9 If the **Subcontractor** fails to maintain the necessary facilities, skill, integrity, past experience, and financial resources (other than due to the **Contractor's** failure to make payments where required) to perform the **Work** in accordance with the terms and conditions of this **Contract**, the **Contractor** shall promptly notify the **Commissioner** and replace such **Subcontractor** with a newly approved **Subcontractor** in accordance with this Article 17.

17.10 The **Contractor** shall be responsible for ensuring that all **Subcontractors** performing **Work** at the **Site** maintain all insurance required by **Law**.

17.11 The **Contractor** shall promptly, upon request, file with the **Engineer** a conformed copy of the subcontract and its cost. The subcontract shall provide the following:

17.11.1 Payment to **Subcontractors**: The agreement between the **Contractor** and its **Subcontractor** shall contain the same terms and conditions as to method of payment for **Work**, labor, and materials, and as to retained percentages, as are contained in this **Contract**.

17.11.2 Prevailing Rate of Wages: The agreement between the **Contractor** and its **Subcontractor** shall include the prevailing wage rates and supplemental benefits to be paid in accordance with Labor Law Section 220.

17.11.3 Section 6-123 of the Administrative Code: Pursuant to the requirements of Section 6-123 of the Administrative Code, every agreement between the **Contractor** and a **Subcontractor** in excess of fifty thousand (\$50,000) dollars shall include a provision that the **Subcontractor** shall not engage in any unlawful discriminatory practice as defined in Title VIII of the Administrative Code (Section 8-101 *et seq.*).

17.11.4 All requirements required pursuant to federal and/or state grant agreement(s), if applicable to the **Work**.

17.12 The **Commissioner** may deduct from the amounts certified under this **Contract** to be due to the **Contractor**, the sum or sums due and owing from the **Contractor** to the **Subcontractors** according to the terms of the said subcontracts, and in case of dispute between the **Contractor** and its **Subcontractor**, or **Subcontractors**, as to the amount due and owing, the **Commissioner** may deduct and withhold from the amounts certified under this **Contract** to be due to the **Contractor** such sum or sums as may be claimed by such **Subcontractor**, or **Subcontractors**, in a sworn affidavit, to be due and owing until such time as such claim or claims shall have been finally resolved.

17.13 On contracts where performance bonds and payment bonds are executed, the **Contractor** shall include on each requisition for payment the following data: **Subcontractor's** name, value of the subcontract, total amount previously paid to **Subcontractor** for **Work** previously requisitioned, and the amount, including retainage, to be paid to the **Subcontractor** for **Work** included in the requisition.

17.14 On **Contracts** where performance bonds and payment bonds are not executed, the **Contractor** shall include with each requisition for payment submitted hereunder, a signed statement from each and every **Subcontractor** and/or **Materialman** for whom payment is requested in such requisition. Such signed statement shall be on the letterhead of the **Subcontractor** and/or **Materialman** for whom payment is requested and shall (i) verify that such **Subcontractor** and/or **Materialman** has been paid in full for all **Work** performed and/or material supplied to date, exclusive of any amount retained and any amount included on the current requisition, and (ii) state the total amount of retainage to date, exclusive of any amount retained on the current requisition.

ARTICLE 18. ASSIGNMENTS

18.1 The **Contractor** shall not assign, transfer, convey or otherwise dispose of this **Contract**, or the right to execute it, or the right, title or interest in or to it or any part thereof, or assign, by power of attorney or otherwise any of the monies due or to become due under this **Contract**, unless the previous written consent of the **Commissioner** shall first be obtained thereto, and the giving of any such consent to a particular assignment shall not dispense with the necessity of such consent to any further or other assignments.

18.2 Such assignment, transfer, conveyance or other disposition of this **Contract** shall not be valid until filed in the office of the **Commissioner** and the **Comptroller**, with the written consent of the **Commissioner** endorsed thereon or attached thereto.

18.3 Failure to obtain the previous written consent of the **Commissioner** to such an assignment, transfer, conveyance or other disposition, may result in the revocation and annulment of this **Contract**. The **City** shall thereupon be relieved and discharged from any further liability to the **Contractor**, its assignees, transferees or sublessees, who shall forfeit and lose all monies therefor earned under the **Contract**, except so much as may be required to pay the **Contractor's** employees.

18.4 The provisions of this clause shall not hinder, prevent, or affect an assignment by the **Contractor** for the benefit of its creditors made pursuant to the **Laws** of the State of New York.

18.5 This **Contract** may be assigned by the **City** to any corporation, agency or instrumentality having authority to accept such assignment.

CHAPTER V: CONTRACTOR'S SECURITY AND GUARANTEE

ARTICLE 19. SECURITY DEPOSIT

19.1 If performance and payment bonds are required, the **City** shall retain the bid security to ensure that the successful bidder executes the **Contract** and furnishes the required payment and performance security within ten (10) **Days** after notice of the award of the **Contract**. If the successful bidder fails to execute the **Contract** and furnish the required payment and performance security, the **City** shall retain such bid security as set forth in the Information for Bidders. If the successful bidder executes the

Contract and furnishes the required payment and performance security, the **City** shall return the bid security within a reasonable time after the furnishing of such bonds and execution of the **Contract** by the **City**.

19.2 If performance and payment bonds are not required, the bid security shall be retained by the **City** as security for the **Contractor's** faithful performance of the **Contract**. If partial payments are provided, the bid security will be returned to the **Contractor** after the sum retained under Article 21 equals the amount of the bid security, subject to other provisions of this **Contract**. If partial payments are not provided, the bid security will be released when final payment is certified by the **City** for payment.

19.3 If the **Contractor** is declared in default under Article 48 prior to the return of the deposit, or if any claim is made such as referred to in Article 23, the amount of such deposit, or so much thereof as the **Comptroller** may deem necessary, may be retained and then applied by the **Comptroller**:

19.3.1 To compensate the **City** for any expense, loss or damage suffered or incurred by reason of or resulting from such default, including the cost of re-letting and liquidated damages; or

19.3.2 To indemnify the **City** against any and all claims.

ARTICLE 20. PAYMENT GUARANTEE

20.1 On **Contracts** where one hundred (100%) percent performance bonds and payment bonds are executed, this Article 20 does not apply.

20.2 In the event the terms of this **Contract** do not require the **Contractor** to provide a payment bond or where the **Contract** does not require a payment bond for one hundred (100%) percent of the **Contract** price, the **City** shall, in accordance with the terms of this Article 20, guarantee payment of all lawful claims for:

20.2.1 Wages and compensation for labor performed and/or services rendered; and

20.2.2 Materials, equipment, and supplies provided, whether incorporated into the **Work** or not, when demands have been filed with the **City** as provided hereinafter by any person, firm, or corporation which furnished labor, material, equipment, supplies, or any combination thereof, in connection with the **Work** performed hereunder (hereinafter referred to as the "beneficiary") at the direction of the **City** or the **Contractor**.

20.3 The provisions of Article 20.2 are subject to the following limitations and conditions:

20.3.1 If the **Contractor** provides a payment bond for a value that is less than one hundred (100%) percent of the value of the **Contract Work**, the payment bond provided by the **Contractor** shall be primary (and non-contributing) to the payment guarantee provided under this Article 20.

20.3.2 The guarantee is made for the benefit of all beneficiaries as defined in Article 20.2 provided that those beneficiaries strictly adhere to the terms and conditions of Article 20.3.4 and 20.3.5.

20.3.3 Nothing in this Article 20 shall prevent a beneficiary providing labor, services or material for the **Work** from suing the **Contractor** for any amounts due and owing the beneficiary by the **Contractor**.

20.3.4 Every person who has furnished labor or material, to the **Contractor** or to a **Subcontractor** of the **Contractor**, in the prosecution of the **Work** and who has not been paid in full therefor before the expiration of a period of ninety (90) **Days** after the date on which the last of the labor was performed or material was furnished by him/her for which the claim is made, shall have the right to sue on this payment guarantee in his/her own name for the amount, or the balance thereof, unpaid at the time of commencement of the action; provided, however, that a person having a direct contractual relationship with a **Subcontractor** of the **Contractor** but no contractual relationship express or implied with the **Contractor** shall not have a right of action upon the guarantee unless he/she shall have given written notice to the **Contractor** within one hundred twenty (120) **Days** from the date on which the last of the labor was performed or the last of the material was furnished, for which his/her claim is made, stating with substantial accuracy the amount claimed and the name of the party to whom the material was furnished or for whom the labor was performed. The notice shall be served by delivering the same personally to the **Contractor** or by mailing the same by registered mail, postage prepaid, in an envelope addressed to the **Contractor** at any place where it maintains an office or conducts its business; provided, however, that where such notice is actually received by the **Contractor** by other means, such notice shall be deemed sufficient.

20.3.5 Except as provided in Labor Law Section 220-g, no action on this payment guarantee shall be commenced after the expiration of the one-year limitations period set forth in Section 137(4)(b) of the State Finance Law.

20.3.6 The **Contractor** shall promptly forward to the **City** any notice or demand received pursuant to Article 20.3.4. The **Contractor** shall inform the **City** of any defenses to the notice or demand and shall forward to the **City** any documents the **City** requests concerning the notice or demand.

20.3.7 All demands made against the **City** by a beneficiary of this payment guarantee shall be presented to the **Engineer** along with all written documentation concerning the demand which the **Engineer** deems reasonably appropriate or necessary, which may include, but shall not be limited to: the subcontract; any invoices presented to the **Contractor** for payment; the notarized statement of the beneficiary that the demand is due and payable, that a request for payment has been made of the **Contractor** and that the demand has not been paid by the **Contractor** within the time allowed for such payment by the subcontract; and copies of any correspondence between the beneficiary and the **Contractor** concerning such demand. The **City** shall notify the **Contractor** that a demand has been made. The **Contractor** shall inform the **City** of any defenses to the demand and shall forward to the **City** any documents the **City** requests concerning the demand.

20.3.8 The **City** shall make payment only if, after considering all defenses presented by the **Contractor**, it determines that the payment is due and owing to the beneficiary making the demand.

20.3.9 No beneficiary shall be entitled to interest from the **City**, or to any other costs, including, but not limited to, attorneys' fees, except to the extent required by State Finance Law Section 137.

20.4 Upon the receipt by the **City** of a demand pursuant to this Article 20, the **City** may withhold from any payment otherwise due and owing to the **Contractor** under this **Contract** an amount sufficient to satisfy the demand.

20.4.1 In the event the **City** determines that the demand is valid, the **City** shall notify the **Contractor** of such determination and the amount thereof and direct the **Contractor** to immediately pay such amount to the beneficiary. In the event the **Contractor**, within seven (7) **Days** of receipt of such notification from the **City**, fails to pay the beneficiary, such failure shall constitute an automatic and irrevocable assignment of payment by the **Contractor** to the beneficiary for the amount of the demand determined by the **City** to be valid. The **Contractor**, without further notification or other process, hereby gives its unconditional consent to such assignment of payment to the beneficiary and authorizes the **City**, on its behalf, to take all necessary actions to implement such assignment of payment, including without limitation the execution of any instrument or documentation necessary to effectuate such assignment.

20.4.2 In the event that the amount otherwise due and owing to the **Contractor** by the **City** is insufficient to satisfy such demand, the **City** may, at its option, require payment from the **Contractor** of an amount sufficient to cover such demand and exercise any other right to require or recover payment which the **City** may have under **Law** or **Contract**.

20.4.3 In the event the **City** determines that the demand is invalid, any amount withheld pending the **City**'s review of such demand shall be paid to the **Contractor**; provided, however, no lien has been filed. In the event a claim or an action has been filed, the terms and conditions set forth in Article 23 shall apply. In the event a lien has been filed, the parties will be governed by the provisions of the Lien Law of the State of New York.

20.5 The provisions of this Article 20 shall not prevent the **City** and the **Contractor** from resolving disputes in accordance with the **PPB** Rules, where applicable.

20.6 In the event the **City** determines that the beneficiary is entitled to payment pursuant to this Article 20, such determination and any defenses and counterclaims raised by the **Contractor** shall be taken into account in evaluating the **Contractor**'s performance.

20.7 Nothing in this Article 20 shall relieve the **Contractor** of the obligation to pay the claims of all persons with valid and lawful claims against the **Contractor** relating to the **Work**.

20.8 The **Contractor** shall not require any performance, payment or other bonds of any **Subcontractor** if this **Contract** does not require such bonds of the **Contractor**.

20.9 The payment guarantee made pursuant to this Article 20 shall be construed in a manner consistent with Section 137 of the State Finance Law and shall afford to persons furnishing labor or materials to the **Contractor** or its **Subcontractors** in the prosecution of the **Work** under this **Contract** all of the rights and remedies afforded to such persons by such section, including but not limited to, the right to commence an action against the **City** on the payment guarantee provided by this Article 20 within the one-year limitations period set forth in Section 137(4)(b).

ARTICLE 21. RETAINED PERCENTAGE

21.1 If this **Contract** requires one hundred (100%) percent performance and payment security, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and

retain until the substantial completion of the **Work**, five (5%) percent of the value of **Work** certified for payment in each partial payment voucher.

21.2 If this **Contract** does not require one hundred (100%) percent performance and payment security and if the price for which this **Contract** was awarded does not exceed one million (\$1,000,000) dollars, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, five (5%) percent of the value of **Work** certified for payment in each partial payment voucher.

21.3 If this **Contract** does not require one hundred (100%) percent performance and payment security and if the price for which this **Contract** was awarded exceeds one million (\$1,000,000) dollars, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, up to ten (10%) percent of the value of **Work** certified for payment in each partial payment voucher. The percentage to be retained is set forth in Schedule A of the General Conditions.

ARTICLE 22. INSURANCE

22.1 Types of Insurance: The **Contractor** shall procure and maintain the following types of insurance if, and as indicated, in Schedule A of the General Conditions (with the minimum limits and special conditions specified in Schedule A). Such insurance shall be maintained from the date the **Contractor** is required to provide Proof of Insurance pursuant to Article 22.3.1 through the date of completion of all required **Work** (including punch list work as certified in writing by the **Resident Engineer**), except for insurance required pursuant to Article 22.1.4, which may terminate upon **Substantial Completion** of the **Contract**. All insurance shall meet the requirements set forth in this Article 22. Wherever this Article requires that insurance coverage be “at least as broad” as a specified form (including all ISO forms), there is no obligation that the form itself be used, provided that the **Contractor** can demonstrate that the alternative form or endorsement contained in its policy provides coverage at least as broad as the specified form.

22.1.1 Commercial General Liability Insurance: The **Contractor** shall provide Commercial General Liability Insurance covering claims for property damage and/or bodily injury, including death, which may arise from any of the operations under this **Contract**. Coverage under this insurance shall be at least as broad as that provided by the latest edition of Insurance Services Office (“ISO”) Form CG 0001. Such insurance shall be “occurrence” based rather than “claims-made” and include, without limitation, the following types of coverage: premises operations; products and completed operations; contractual liability (including the tort liability of another assumed in a contract); broad form property damage; independent contractors; explosion, collapse and underground (XCU); construction means and methods; and incidental malpractice. Such insurance shall contain a “per project” aggregate limit, as specified in Schedule A, that applies separately to operations under this **Contract**.

22.1.1(a) Such Commercial General Liability Insurance shall name the **City** as an Additional Insured. Coverage for the City shall specifically include the **City’s** officials and employees, be at least as broad as the latest edition of ISO Form CG 20 10 and provide completed operations coverage at least as broad as the latest edition of ISO Form CG 20 37.

22.1.1(b) Such Commercial General Liability Insurance shall name all other entities designated as additional insureds in Schedule A but only for claims arising from the

Contractor's operations under this **Contract**, with coverage at least as broad as the latest edition of ISO Form CG 20 26.

22.1.1(c) If the **Work** requires a permit from the Department of Buildings pursuant to 1 RCNY Section 101-08, the **Contractor** shall provide Commercial General Liability Insurance with limits of at least those required by 1 RCNY section 101-08 or greater limits required by the Agency in accordance with Schedule A. If the **Work** does not require such a permit, the minimum limits shall be those provided for in Schedule A.

22.1.1(d) If any of the **Work** includes repair of a waterborne vessel owned by or to be delivered to the **City**, such Commercial General Liability shall include, or be endorsed to include, Ship Repairer's Legal Liability Coverage to protect against, without limitation, liability arising from navigation of such vessels prior to delivery to and acceptance by the **City**.

22.1.2 Workers' Compensation Insurance, Employers' Liability Insurance, and Disability Benefits Insurance: The **Contractor** shall provide, and shall cause its **Subcontractors** to provide, Workers Compensation Insurance, Employers' Liability Insurance, and Disability Benefits Insurance in accordance with the **Laws** of the State of New York on behalf of all employees providing services under this **Contract** (except for those employees, if any, for which the **Laws** require insurance only pursuant to Article 22.1.3).

22.1.3 United States Longshoremen's and Harbor Workers Act and/or Jones Act Insurance: If specified in Schedule A of the General Conditions or if required by **Law**, the **Contractor** shall provide insurance in accordance with the United States Longshoremen's and Harbor Workers Act and/or the Jones Act, on behalf of all qualifying employees providing services under this **Contract**.

22.1.4 Builders Risk Insurance: If specified in Schedule A of the General Conditions, the **Contractor** shall provide Builders Risk Insurance on a completed value form for the total value of the **Work** through **Substantial Completion** of the **Work** in its entirety. Such insurance shall be provided on an All Risk basis and include coverage, without limitation, for windstorm (including named windstorm), storm surge, flood and earth movement. Unless waived by the **Commissioner**, it shall include coverage for ordinance and law, demolition and increased costs of construction, debris removal, pollutant clean up and removal, and expediting costs. Such insurance shall cover, without limitation, (a) all buildings and/or structures involved in the **Work**, as well as temporary structures at the **Site**, and (b) any property that is intended to become a permanent part of such building or structure, whether such property is on the **Site**, in transit or in temporary storage. Policies shall name the **Contractor** as Named Insured and list the **City** as both an Additional Insured and a Loss Payee as its interest may appear.

22.1.4(a) Policies of such insurance shall specify that, in the event a loss occurs at an occupied facility, occupancy of such facility is permitted without the consent of the issuing insurance company.

22.1.4(b) Such insurance may be provided through an Installation Floater, at the **Contractor's** option, if it otherwise conforms with the requirements of this Article 22.1.4.

22.1.5 Commercial Automobile Liability Insurance: The **Contractor** shall provide Commercial Automobile Liability Insurance for liability arising out of ownership,

maintenance or use of any owned (if any), non-owned and hired vehicles to be used in connection with this **Contract**. Coverage shall be at least as broad as the latest edition of ISO Form CA0001. If vehicles are used for transporting hazardous materials, the Automobile Liability Insurance shall be endorsed to provide pollution liability broadened coverage for covered vehicles (endorsement CA 99 48) as well as proof of MCS 90.

22.1.6 Contractors Pollution Liability Insurance: If specified in Schedule A of the General Conditions, the **Contractor** shall maintain, or cause the **Subcontractor** doing such **Work** to maintain, Contractors Pollution Liability Insurance covering bodily injury and property damage. Such insurance shall provide coverage for actual, alleged or threatened emission, discharge, dispersal, seepage, release or escape of pollutants (including asbestos), including any loss, cost or expense incurred as a result of any cleanup of pollutants (including asbestos) or in the investigation, settlement or defense of any claim, action, or proceedings arising from the operations under this **Contract**. Such insurance shall be in the **Contractor's** name and list the **City** as an Additional Insured and any other entity specified in Schedule A. Coverage shall include, without limitation, (a) loss of use of damaged property or of property that has not been physically injured, (b) transportation, and (c) non-owned disposal sites.

22.1.6(a) Coverage for the **City** as Additional Insured shall specifically include the **City's** officials and employees and be at least as broad as provided to the **Contractor** for this **Project**.

22.1.6(b) If such insurance is written on a claims-made policy, such policy shall have a retroactive date on or before the effective date of this **Contract**, and continuous coverage shall be maintained, or an extended discovery period exercised, for a period of not less than three (3) years from the time the **Work** under this **Contract** is completed.

22.1.7 Marine Insurance:

22.1.7(a) Marine Protection and Indemnity Insurance: If specified in Schedule A of the General Conditions or if the **Contractor** engages in marine operations in the execution of any part of the **Work**, the **Contractor** shall maintain, or cause the **Subcontractor** doing such **Work** to maintain, Marine Protection and Indemnity Insurance with coverage at least as broad as Form SP-23. The insurance shall provide coverage for the **Contractor** or **Subcontractor** (whichever is doing this **Work**) and for the **City** (together with its officials and employees) and any other entity specified in Schedule A as an Additional Insured for bodily injury and property damage arising from marine operations under this **Contract**. Coverage shall include, without limitation, injury or death of crew members (if not fully provided through other insurance), removal of wreck, damage to piers, wharves and other fixed or floating objects and loss of or damage to any other vessel or craft, or to property on such other vessel or craft.

22.1.7(b) Hull and Machinery Insurance: If specified in Schedule A of the General Conditions or if the **Contractor** engages in marine operations in the execution of any part of the **Work**, the **Contractor** shall maintain, or cause the **Subcontractor** doing such **Work** to maintain, Hull and Machinery Insurance with coverage for the **Contractor** or **Subcontractor** (whichever is doing this **Work**) and for the **City** (together with its officials and employees) as Additional Insured at least as broad as the latest edition of American Institute Tug Form for all tugs used under this

Contract and Collision Liability at least as broad as the latest edition of American Institute Hull Clauses.

22.1.7(c) Marine Pollution Liability Insurance: If specified in Schedule A of the General Conditions or if the **Contractor** engages in marine operations in the execution of any part of the **Work**, the **Contractor** shall maintain, or cause the **Subcontractor** doing such Work to maintain, Marine Pollution Liability Insurance covering itself (or the Subcontractor doing such Work) as Named Insured and the **City** (together with its officials and employees) and any other entity specified in Schedule A as an Additional Insured. Coverage shall be at least as broad as that provided by the latest edition of Water Quality Insurance Syndicate Form and include, without limitation, liability arising from the discharge or substantial threat of a discharge of oil, or from the release or threatened release of a hazardous substance including injury to, or economic losses resulting from, the destruction of or damage to real property, personal property or natural resources.

22.1.8 The **Contractor** shall provide such other types of insurance, at such minimum limits and with such conditions, as are specified in Schedule A of the General Conditions.

22.2 General Requirements for Insurance Coverage and Policies:

22.2.1 All required insurance policies shall be maintained with companies that may lawfully issue the required policy and have an A.M. Best rating of at least A-/VII or a Standard and Poor's rating of at least A, unless prior written approval is obtained from the **City** Corporation Counsel.

22.2.2 The **Contractor** shall be solely responsible for the payment of all premiums for all required policies and all deductibles and self-insured retentions to which such policies are subject, whether or not the **City** is an insured under the policy.

22.2.3 In his/her sole discretion, the **Commissioner** may, subject to the approval of the **Comptroller** and the **City** Corporation Counsel, accept Letters of Credit and/or custodial accounts in lieu of required insurance.

22.2.4 The **City's** limits of coverage for all types of insurance required pursuant to Schedule A of the General Conditions shall be the greater of (i) the minimum limits set forth in Schedule A or (ii) the limits provided to the **Contractor** as Named Insured under all primary, excess, and umbrella policies of that type of coverage.

22.2.5 The **Contractor** may satisfy its insurance obligations under this Article 22 through primary policies or a combination of primary and excess/umbrella policies, so long as all policies provide the scope of coverage required herein.

22.2.6 Policies of insurance provided pursuant to this Article 22 shall be primary and non-contributing to any insurance or self-insurance maintained by the **City**.

22.3 Proof of Insurance:

22.3.1 For all types of insurance required by Article 22.1 and Schedule A, except for insurance required by Articles 22.1.4 and 22.1.7, the **Contractor** shall file proof of insurance in accordance with this Article 22.3 within ten (10) **Days** of award. For insurance

provided pursuant to Articles 22.1.4 and 22.1.7, proof shall be filed by a date specified by the **Commissioner** or ten (10) **Days** prior to the commencement of the portion of the **Work** covered by such policy, whichever is earlier.

22.3.2 For Workers' Compensation Insurance provided pursuant to Article 22.1.2, the **Contractor** shall submit one of the following forms: C-105.2 Certificate of Workers' Compensation Insurance; U-26.3 - State Insurance Fund Certificate of Workers' Compensation Insurance; Request for WC/DB Exemption (Form CE-200); equivalent or successor forms used by the New York State Workers' Compensation Board; or other proof of insurance in a form acceptable to the **Commissioner**. For Disability Benefits Insurance provided pursuant to Article 22.1.2, the Contractor shall submit DB-120.1 - Certificate Of Insurance Coverage Under The NYS Disability Benefits Law, Request for WC/DB Exemption (Form CE-200); equivalent or successor forms used by the New York State Workers' Compensation Board; or other proof of insurance in a form acceptable to the **Commissioner**. ACORD forms are not acceptable.

22.3.3 For policies provided pursuant to all of Article 22.1 other than Article 22.1.2, the **Contractor** shall submit one or more Certificates of Insurance on forms acceptable to the **Commissioner**. All such Certificates of Insurance shall certify (a) the issuance and effectiveness of such policies of insurance, each with the specified minimum limits (b) for insurance secured pursuant to Article 22.1.1 that the **City** and any other entity specified in Schedule A is an Additional Insured thereunder; (c) in the event insurance is required pursuant to Article 22.1.6 and/or Article 22.1.7, that the City is an Additional Insured thereunder; (d) the company code issued to the insurance company by the National Association of Insurance Commissioners (the NAIC number); and (e) the number assigned to the **Contract** by the **City**. All such Certificates of Insurance shall be accompanied by either a duly executed "Certification by Insurance Broker or Agent" in the form contained in Part III of Schedule A or copies of all policies referenced in such Certificate of Insurance as certified by an authorized representative of the issuing insurance carrier. If any policy is not available at the time of submission, certified binders may be submitted until such time as the policy is available, at which time a certified copy of the policy shall be submitted.

22.3.4 Documentation confirming renewals of insurance shall be submitted to the **Commissioner** prior to the expiration date of coverage of policies required under this **Contract**. Such proofs of insurance shall comply with the requirements of Articles 22.3.2 and 22.3.3.

22.3.5 The **Contractor** shall be obligated to provide the **City** with a copy of any policy of insurance provided pursuant to this Article 22 upon the demand for such policy by the **Commissioner** or the **City** Corporation Counsel.

22.4 Operations of the **Contractor**:

22.4.1 The **Contractor** shall not commence the **Work** unless and until all required certificates have been submitted to and accepted by the **Commissioner**. Acceptance by the **Commissioner** of a certificate does not excuse the **Contractor** from securing insurance consistent with all provisions of this Article 22 or of any liability arising from its failure to do so.

22.4.2 The **Contractor** shall be responsible for providing continuous insurance coverage in the manner, form, and limits required by this **Contract** and shall be authorized to perform **Work** only during the effective period of all required coverage.

22.4.3 In the event that any of the required insurance policies lapse, are revoked, suspended or otherwise terminated, for whatever cause, the **Contractor** shall immediately stop all **Work**, and shall not recommence **Work** until authorized in writing to do so by the **Commissioner**. Upon quitting the **Site**, except as otherwise directed by the **Commissioner**, the **Contractor** shall leave all plant, materials, equipment, tools, and supplies on the **Site**. **Contract** time shall continue to run during such periods and no extensions of time will be granted. The **Commissioner** may also declare the **Contractor** in default for failure to maintain required insurance.

22.4.4 In the event the **Contractor** receives notice, from an insurance company or other person, that any insurance policy required under this Article 22 shall be cancelled or terminated (or has been cancelled or terminated) for any reason, the **Contractor** shall immediately forward a copy of such notice to both the **Commissioner** and the New York City Comptroller, attn: Office of Contract Administration, Municipal Building, One Centre Street, room 1005, New York, New York 10007. Notwithstanding the foregoing, the **Contractor** shall ensure that there is no interruption in any of the insurance coverage required under this Article 22.

22.4.5 Where notice of loss, damage, occurrence, accident, claim or suit is required under an insurance policy maintained in accordance with this Article 22, the **Contractor** shall notify in writing all insurance carriers that issued potentially responsive policies of any such event relating to any operations under this **Contract** (including notice to Commercial General Liability insurance carriers for events relating to the **Contractor**'s own employees) no later than 20 days after such event. For any policy where the **City** is an Additional Insured, such notice shall expressly specify that "this notice is being given on behalf of the City of New York as Insured as well as the Named Insured." Such notice shall also contain the following information: the number of the insurance policy, the name of the named insured, the date and location of the damage, occurrence, or accident, and the identity of the persons or things injured, damaged or lost. The **Contractor** shall simultaneously send a copy of such notice to the City of New York c/o Insurance Claims Specialist, Affirmative Litigation Division, New York City Law Department, 100 Church Street, New York, New York 10007.

22.4.6 In the event of any loss, accident, claim, action, or other event that does or can give rise to a claim under any insurance policy required under this Article 22, the **Contractor** shall at all times fully cooperate with the **City** with regard to such potential or actual claim.

22.5 **Subcontractor Insurance:** In the event the **Contractor** requires any **Subcontractor** to procure insurance with regard to any operations under this **Contract** and requires such **Subcontractor** to name the **Contractor** as an **Additional Insured** thereunder, the **Contractor** shall ensure that the **Subcontractor** name the **City**, including its officials and employees, as an Additional Insured with coverage at least as broad as the most recent edition of ISO Form CG 20 26.

22.6 Wherever reference is made in Article 7 or this Article 22 to documents to be sent to the **Commissioner** (e.g., notices, filings, or submissions), such documents shall be sent to the address set forth in Schedule A of the General Conditions. In the event no address is set forth in Schedule A, such documents are to be sent to the **Commissioner**'s address as provided elsewhere in this **Contract**.

22.7 Apart from damages or losses covered by insurance provided pursuant to Articles 22.1.2, 22.1.3, or 22.1.5, the **Contractor** waives all rights against the **City**, including its officials and employees, for any damages or losses that are covered under any insurance required under this Article 22 (whether or

not such insurance is actually procured or claims are paid thereunder) or any other insurance applicable to the operations of the **Contractor** and/or its employees, agents, or **Subcontractors**.

22.8 In the event the **Contractor** utilizes a self-insurance program to satisfy any of the requirements of this Article 22, the **Contractor** shall ensure that any such self-insurance program provides the **City** with all rights that would be provided by traditional insurance under this Article 22, including but not limited to the defense and indemnification obligations that insurers are required to undertake in liability policies.

22.9 Materiality/Non-Waiver: The **Contractor's** failure to secure policies in complete conformity with this Article 22, or to give an insurance company timely notice of any sort required in this **Contract** or to do anything else required by this Article 22 shall constitute a material breach of this **Contract**. Such breach shall not be waived or otherwise excused by any action or inaction by the **City** at any time.

22.10 Pursuant to General Municipal Law Section 108, this **Contract** shall be void and of no effect unless **Contractor** maintains Workers' Compensation Insurance for the term of this **Contract** to the extent required and in compliance with the New York State Workers' Compensation Law.

22.11 Other Remedies: Insurance coverage provided pursuant to this Article 22 or otherwise shall not relieve the **Contractor** of any liability under this **Contract**, nor shall it preclude the **City** from exercising any rights or taking such other actions available to it under any other provisions of this **Contract** or **Law**.

ARTICLE 23. MONEY RETAINED AGAINST CLAIMS

23.1 If any claim shall be made by any person or entity (including **Other Contractors** with the **City** on this **Project**) against the **City** or against the **Contractor** and the **City** for any of the following:

- (a) An alleged loss, damage, injury, theft or vandalism of any of the kinds referred to in Articles 7 and 12, plus the reasonable costs of defending the **City**, which in the opinion of the **Comptroller** may not be paid by an insurance company (for any reason whatsoever); or
- (b) An infringement of copyrights, patents or use of patented articles, tools, etc., as referred to in Article 57; or
- (c) Damage claimed to have been caused directly or indirectly by the failure of the **Contractor** to perform the **Work** in strict accordance with this **Contract**,

the amount of such claim, or so much thereof as the **Comptroller** may deem necessary, may be withheld by the **Comptroller**, as security against such claim, from any money due hereunder. The **Comptroller**, in his/her discretion, may permit the **Contractor** to substitute other satisfactory security in lieu of the monies so withheld.

23.2 If an action on such claim is timely commenced and the liability of the **City**, or the **Contractor**, or both, shall have been established therein by a final judgment of a court of competent jurisdiction, or if such claim shall have been admitted by the **Contractor** to be valid, the **Comptroller** shall pay such judgment or admitted claim out of the monies retained by the **Comptroller** under the provisions of this Article 23, and return the balance, if any, without interest, to the **Contractor**.

ARTICLE 24. MAINTENANCE AND GUARANTY

24.1 The **Contractor** shall promptly repair, replace, restore or rebuild, as the **Commissioner** may determine, any finished **Work** in which defects of materials or workmanship may appear or to which damage may occur because of such defects, during the one (1) year period subsequent to the date of **Substantial Completion** (or use and occupancy in accordance with Article 16), except where other periods of maintenance and guaranty are provided for in Schedule A.

24.2 As security for the faithful performance of its obligations hereunder, the **Contractor**, upon filing its requisition for payment on **Substantial Completion**, shall deposit with the **Commissioner** a sum equal to one (1%) percent of the price (or the amount fixed in Schedule A of the General Conditions) in cash or certified check upon a state or national bank and trust company or a check of such bank and trust company signed by a duly authorized officer thereof and drawn to the order of the **Comptroller**, or obligations of the **City**, which the **Comptroller** may approve as of equal value with the sum so required.

24.3 In lieu of the above, the **Contractor** may make such security payment to the **City** by authorizing the **Commissioner** in writing to deduct the amount from the **Substantial Completion** payment which shall be deemed the deposit required above.

24.4 If the **Contractor** has faithfully performed all of its obligations hereunder the **Commissioner** shall so certify to the **Comptroller** within five (5) **Days** after the expiration of one (1) year from the date of **Substantial Completion** and acceptance of the **Work** or within thirty (30) **Days** after the expiration of the guarantee period fixed in the **Specifications**. The security payment shall be repaid to the **Contractor** without interest within thirty (30) **Days** after certification by the **Commissioner** to the **Comptroller** that the **Contractor** has faithfully performed all of its obligations hereunder.

24.5 Notice by the **Commissioner** to the **Contractor** to repair, replace, rebuild or restore such defective or damaged **Work** shall be timely, pursuant to this article, if given not later than ten (10) **Days** subsequent to the expiration of the one (1) year period or other periods provided for herein.

24.6 If the **Contractor** shall fail to repair, replace, rebuild or restore such defective or damaged **Work** promptly after receiving such notice, the **Commissioner** shall have the right to have the **Work** done by others in the same manner as provided for in the completion of a defaulted **Contract**, under Article 51.

24.7 If the security payment so deposited is insufficient to cover the cost of such **Work**, the **Contractor** shall be liable to pay such deficiency on demand by the **Commissioner**.

24.8 The **Engineer's** certificate setting forth the fair and reasonable cost of repairing, replacing, rebuilding or restoring any damaged or defective **Work** when performed by one other than the **Contractor**, shall be binding and conclusive upon the **Contractor** as to the amount thereof.

24.9 The **Contractor** shall obtain all manufacturers' warranties and guaranties of all equipment and materials required by this **Contract** in the name of the **City** and shall deliver same to the **Commissioner**. All of the **City's** rights and title and interest in and to said manufacturers' warranties and guaranties may be assigned by the **City** to any subsequent purchasers of such equipment and materials or lessees of the premises into which the equipment and materials have been installed.

CHAPTER VI: CHANGES, EXTRA WORK, AND DOCUMENTATION OF CLAIM

ARTICLE 25. CHANGES

25.1 Changes may be made to this **Contract** only as duly authorized in writing by the **Commissioner** in accordance with the **Law** and this **Contract**. All such changes, modifications, and amendments will become a part of the **Contract**. **Work** so ordered shall be performed by the **Contractor**.

25.2 **Contract** changes will be made only for **Work** necessary to complete the **Work** included in the original scope of the **Contract** and/or for non-material changes to the scope of the **Contract**. Changes are not permitted for any material alteration in the scope of **Work** in the **Contract**.

25.3 The **Contractor** shall be entitled to a price adjustment for **Extra Work** performed pursuant to a written change order. Adjustments to price shall be computed in one or more of the following ways:

25.3.1 By applicable unit prices specified in the **Contract**; and/or

25.3.2 By agreement of a fixed price; and/or

25.3.3 By time and material records; and/or

25.3.4 In any other manner approved by the **CCPO**.

25.4 All payments for change orders are subject to pre-audit by the **Engineering Audit Officer** and may be post-audited by the **Comptroller** and/or the **Agency**.

ARTICLE 26. METHODS OF PAYMENT FOR OVERRUNS AND EXTRA WORK

26.1 Overrun of Unit Price Item: An overrun is any quantity of a unit price item which the **Contractor** is directed to provide which is in excess of one hundred twenty-five (125%) percent of the estimated quantity for that item set forth in the bid schedule.

26.1.1 For any unit price item, the **Contractor** will be paid at the unit price bid for any quantity up to one hundred twenty-five (125%) percent of the estimated quantity for that item set forth in the bid schedule. If during the progress of the **Work**, the actual quantity of any unit price item required to complete the **Work** approaches the estimated quantity for that item, and for any reason it appears that the actual quantity of any unit price item necessary to complete the **Work** will exceed the estimated quantity for that item by twenty-five (25%) percent, the **Contractor** shall immediately notify the **Engineer** of such anticipated overrun. The **Contractor** shall not be compensated for any quantity of a unit price item provided which is in excess of one hundred twenty-five (125%) percent of the estimated quantity for that item set forth in the bid schedule without written authorization from the **Engineer**.

26.1.2 If the actual quantity of any unit price item necessary to complete the **Work** will exceed one hundred twenty five (125%) percent of the estimated quantity for that item set forth in the bid schedule, the **City** reserves the right and the **Contractor** agrees to negotiate a new unit price for such item. In no event shall such negotiated new unit price exceed the unit bid price. If the **City** and **Contractor** cannot agree on a new unit price, then the **City** shall order the **Contractor** and the **Contractor** agrees to provide additional quantities of

the item on the basis of time and material records for the actual and reasonable cost as determined under Article 26.2, but in no event at a unit price exceeding the unit price bid.

26.2 Extra Work: For **Extra Work** where payment is by agreement on a fixed price in accordance with Article 25.3.2, the price to be paid for such **Extra Work** shall be based on the fair and reasonable estimated cost of the items set forth below. For **Extra Work** where payment is based on time and material records in accordance with Article 25.3.3, the price to be paid for such **Extra Work** shall be the actual and reasonable cost of the items set forth below, calculated in accordance with the formula specified therein, if any.

26.2.1 Necessary materials (including transportation to the **Site**); plus

26.2.2 Necessary direct labor, including payroll taxes (subject to statutory wage caps) and supplemental benefits; plus

26.2.3 Sales and personal property taxes, if any, required to be paid on materials not incorporated into such **Extra Work**; plus

26.2.4 Reasonable rental value of **Contractor**-owned (or **Subcontractor**-owned, as applicable), necessary plant and equipment other than **Small Tools**, plus fuel/energy costs. Except for fuel costs for pick-up trucks which shall be reimbursed based on a consumption of five (5) gallons per shift, fuel costs shall be reimbursed based on actual costs or, in the absence of auditable documentation, the following fuel consumption formula per operating hour: $(.035) \times (\text{HP rating}) \times (\text{Fuel cost/gallon})$. Reasonable rental value is defined as the lower of either seventy-five percent of the monthly prorated rental rates established in "The AED Green Book, Rental Rates and Specifications for Construction Equipment" published by Equipment Watch (the "Green Book"), or seventy-five percent of the monthly prorated rental rates established in the "Rental Rate Blue Book for Construction Equipment" published by Equipment Watch (the "Blue Book") (the applicable Blue Book rate being for rental only without the addition of any operational costs listed in the Blue Book). The reasonable rental value is deemed to be inclusive of all operating costs except for fuel/energy consumption and equipment operator's wages/costs. For multiple shift utilization, reimbursement shall be calculated as follows: first shift shall be seventy-five (75%) percent of such rental rates; second shift shall be sixty (60%) percent of the first shift rate; and third shift shall be forty (40%) percent of the first shift rate. Equipment on standby shall be reimbursed at one-third (1/3) the prorated monthly rental rate. **Contractor**-owned (or **Subcontractor**-owned, as applicable) equipment includes equipment from rental companies affiliated with or controlled by the **Contractor** (or **Subcontractor**, as applicable), as determined by the **Commissioner**. In establishing cost reimbursement for non-operating **Contractor**-owned (or **Subcontractor**-owned, as applicable) equipment (scaffolding, sheeting systems, road plates, etc.), the **City** may restrict reimbursement to a purchase-salvage/life cycle basis if less than the computed rental costs; plus

26.2.5 Necessary installation and dismantling of such plant and equipment, including transportation to and from the **Site**, if any, provided that, in the case of non-**Contractor**-owned (or non-**Subcontractor**-owned, as applicable) equipment rented from a third party, the cost of installation and dismantling are not allowable if such costs are included in the rental rate; plus

26.2.6 Necessary fees charged by governmental entities; plus

26.2.7 Necessary construction-related service fees charged by non-governmental entities, such as landfill tipping fees; plus

26.2.8 Reasonable rental costs of non-**Contractor**-owned (or non-**Subcontractor**-owned, as applicable) necessary plant and equipment other than **Small Tools**, plus fuel/energy costs. Except for fuel costs for pick-up trucks which shall be reimbursed based on a consumption of five (5) gallons per shift, fuel costs shall be reimbursed based on actual costs or, in the absence of auditable documentation, the following fuel consumption formula per hour of operation: $(.035) \times (\text{HP rating}) \times (\text{Fuel cost/gallon})$. In lieu of renting, the **City** reserves the right to direct the purchase of non-operating equipment (scaffolding, sheeting systems, road plates, etc.), with payment on a purchase-salvage/life cycle basis, if less than the projected rental costs; plus

26.2.9 Workers' Compensation Insurance, and any insurance coverage expressly required by the **City** for the performance of the **Extra Work** which is different than the types of insurance required by Article 22 and Schedule A of the General Conditions. The cost of Workers' Compensation Insurance is subject to applicable payroll limitation caps and shall be based upon the carrier's Manual Rate for such insurance derived from the applicable class Loss Cost ("LC") and carrier's Lost Cost Multiplier ("LCM") approved by the New York State Department of Financial Services, and with the exception of experience rating, rate modifiers as promulgated by the New York Compensation Insurance Rating Board ("NYCIRB"); plus

26.2.10 Additional costs incurred as a result of the **Extra Work** for performance and payment bonds; plus

26.2.11 Twelve percent (12%) percent of the total of items in Articles 26.2.1 through 26.2.5 as compensation for overhead, except that no percentage for overhead will be allowed on **Payroll Taxes** or on the premium portion of overtime pay or on sales and personal property taxes. Overhead shall include without limitation, all costs and expenses in connection with administration, management superintendence, small tools, and insurance required by Schedule A of the General Conditions other than Workers' Compensation Insurance; plus

26.2.12 Ten (10%) percent of the total of items in Articles 26.2.1 through 26.2.5, plus the items in Article 26.2.11, as compensation for profit, except that no percentage for profit will be allowed on **Payroll Taxes** or on the premium portion of overtime pay or on sales and personal property taxes; plus

26.2.13 Five (5%) percent of the total of items in Articles 26.2.6 through 26.2.10 as compensation for overhead and profit.

26.3 Where the **Extra Work** is performed in whole or in part by other than the **Contractor's** own forces pursuant to Article 26.2, the **Contractor** shall be paid, subject to pre-audit by the **Engineering Audit Officer**, the cost of such **Work** computed in accordance with Article 26.2 above, plus an additional allowance of five (5%) percent to cover the **Contractor's** overhead and profit.

26.4 Where a change is ordered, involving both **Extra Work** and omitted or reduced **Contract Work**, the **Contract** price shall be adjusted, subject to pre-audit by the **EAO**, in an amount based on the difference between the cost of such **Extra Work** and of the omitted or reduced **Work**.

26.5 Where the **Contractor** and the **Commissioner** can agree upon a fixed price for **Extra Work** in accordance with Article 25.3.2 or another method of payment for **Extra Work** in accordance with

Article 25.3.4, or for **Extra Work** ordered in connection with omitted **Work**, such method, subject to pre-audit by the **EAO**, may, at the option of the **Commissioner**, be substituted for the cost plus a percentage method provided in Article 26.2; provided, however, that if the **Extra Work** is performed by a **Subcontractor**, the **Contractor** shall not be entitled to receive more than an additional allowance of five (5%) percent for overhead and profit over the cost of such **Subcontractor's Work** as computed in accordance with Article 26.2.

ARTICLE 27. RESOLUTION OF DISPUTES

27.1 All disputes between the **City** and the **Contractor** of the kind delineated in this Article 27.1 that arise under, or by virtue of, this **Contract** shall be finally resolved in accordance with the provisions of this Article 27 and the **PPB Rules**. This procedure for resolving all disputes of the kind delineated herein shall be the exclusive means of resolving any such disputes.

27.1.1 This Article 27 shall not apply to disputes concerning matters dealt with in other sections of the **PPB Rules**, or to disputes involving patents, copyrights, trademarks, or trade secrets (as interpreted by the courts of New York State) relating to proprietary rights in computer software.

27.1.2 This Article 27 shall apply only to disputes about the scope of **Work** delineated by the **Contract**, the interpretation of **Contract** documents, the amount to be paid for **Extra Work** or disputed work performed in connection with the **Contract**, the conformity of the **Contractor's Work** to the **Contract**, and the acceptability and quality of the **Contractor's Work**; such disputes arise when the **Engineer, Resident Engineer, Engineering Audit Officer**, or other designee of the **Commissioner** makes a determination with which the **Contractor** disagrees.

27.2 All determinations required by this Article 27 shall be made in writing clearly stated, with a reasoned explanation for the determination based on the information and evidence presented to the party making the determination. Failure to make such determination within the time required by this Article 27 shall be deemed a non-determination without prejudice that will allow application to the next level.

27.3 During such time as any dispute is being presented, heard, and considered pursuant to this Article 27, the **Contract** terms shall remain in force and the **Contractor** shall continue to perform **Work** as directed by the **ACCO** or the **Engineer**. Failure of the **Contractor** to continue **Work** as directed shall constitute a waiver by the **Contractor** of its claim.

27.4 Presentation of Disputes to **Commissioner**.

Notice of Dispute and Agency Response. The **Contractor** shall present its dispute in writing ("Notice of Dispute") to the **Commissioner** within thirty (30) Days of receiving written notice of the determination or action that is the subject of the dispute. This notice requirement shall not be read to replace any other notice requirements contained in the **Contract**. The Notice of Dispute shall include all the facts, evidence, documents, or other basis upon which the **Contractor** relies in support of its position, as well as a detailed computation demonstrating how any amount of money claimed by the **Contractor** in the dispute was arrived at. Within thirty (30) Days after receipt of the detailed written submission comprising the complete Notice of Dispute, the **Engineer, Resident Engineer, Engineering Audit Officer**, or other designee of the **Commissioner** shall submit to the **Commissioner** all materials he or she deems pertinent to the dispute. Following initial submissions to the **Commissioner**, either party may demand of the other the production of any document or other material the demanding party believes may be relevant to the dispute. The requested party shall produce all relevant materials that are not otherwise

protected by a legal privilege recognized by the courts of New York State. Any question of relevancy shall be determined by the **Commissioner** whose decision shall be final. Willful failure of the **Contractor** to produce any requested material whose relevancy the **Contractor** has not disputed, or whose relevancy has been affirmatively determined, shall constitute a waiver by the **Contractor** of its claim.

27.4.1 **Commissioner Inquiry.** The **Commissioner** shall examine the material and may, in his or her discretion, convene an informal conference with the **Contractor**, the **ACCO**, and the **Engineer, Resident Engineer, Engineering Audit Officer**, or other designee of the **Commissioner** to resolve the issue by mutual consent prior to reaching a determination. The **Commissioner** may seek such technical or other expertise as he or she shall deem appropriate, including the use of neutral mediators, and require any such additional material from either or both parties as he or she deems fit. The **Commissioner's** ability to render, and the effect of, a decision hereunder shall not be impaired by any negotiations in connection with the dispute presented, whether or not the **Commissioner** participated therein. The **Commissioner** may or, at the request of any party to the dispute, shall compel the participation of any **Other Contractor** with a contract related to the **Work** of this **Contract**, and that **Contractor** shall be bound by the decision of the **Commissioner**. Any **Other Contractor** thus brought into the dispute resolution proceeding shall have the same rights and obligations under this Article 27 as the **Contractor** initiating the dispute.

27.4.2 **Commissioner Determination.** Within thirty (30) **Days** after the receipt of all materials and information, or such longer time as may be agreed to by the parties, the **Commissioner** shall make his or her determination and shall deliver or send a copy of such determination to the **Contractor**, the **ACCO**, and **Engineer, Resident Engineer, Engineering Audit Officer**, or other designee of the **Commissioner**, as applicable, together with a statement concerning how the decision may be appealed.

27.4.3 **Finality of Commissioner's Decision.** The **Commissioner's** decision shall be final and binding on all parties, unless presented to the Contract Dispute Resolution Board pursuant to this Article 27. The **City** may not take a petition to the Contract Dispute Resolution Board. However, should the **Contractor** take such a petition, the **City** may seek, and the Contract Dispute Resolution Board may render, a determination less favorable to the **Contractor** and more favorable to the **City** than the decision of the **Commissioner**.

27.5 **Presentation of Dispute to the Comptroller.** Before any dispute may be brought by the **Contractor** to the Contract Dispute Resolution Board, the **Contractor** must first present its claim to the **Comptroller** for his or her review, investigation, and possible adjustment.

27.5.1 **Time, Form, and Content of Notice.** Within thirty (30) **Days** of its receipt of a decision by the **Commissioner**, the **Contractor** shall submit to the **Comptroller** and to the **Commissioner** a Notice of Claim regarding its dispute with the **Agency**. The Notice of Claim shall consist of (i) a brief written statement of the substance of the dispute, the amount of money, if any, claimed and the reason(s) the **Contractor** contends the dispute was wrongly decided by the **Commissioner**; (ii) a copy of the written decision of the **Commissioner**; and (iii) a copy of all materials submitted by the **Contractor** to the **Agency**, including the Notice of Dispute. The **Contractor** may not present to the **Comptroller** any material not presented to the **Commissioner**, except at the request of the **Comptroller**.

27.5.2 Response. Within thirty (30) **Days** of receipt of the Notice of Claim, the **Agency** shall make available to the **Comptroller** a copy of all material submitted by the **Agency** to the **Commissioner** in connection with the dispute. The **Agency** may not present to the **Comptroller** any material not presented to the **Commissioner** except at the request of the **Comptroller**.

27.5.3 **Comptroller** Investigation. The **Comptroller** may investigate the claim in dispute and, in the course of such investigation, may exercise all powers provided in Sections 7-201 and 7-203 of the Administrative Code. In addition, the **Comptroller** may demand of either party, and such party shall provide, whatever additional material the **Comptroller** deems pertinent to the claim, including original business records of the **Contractor**. Willful failure of the **Contractor** to produce within fifteen (15) **Days** any material requested by the **Comptroller** shall constitute a waiver by the **Contractor** of its claim. The **Comptroller** may also schedule an informal conference to be attended by the **Contractor**, **Agency** representatives, and any other personnel desired by the **Comptroller**.

27.5.4 Opportunity of **Comptroller** to Compromise or Adjust Claim. The **Comptroller** shall have forty-five (45) **Days** from his or her receipt of all materials referred to in Article 27.5.3 to investigate the disputed claim. The period for investigation and compromise may be further extended by agreement between the **Contractor** and the **Comptroller**, to a maximum of ninety (90) **Days** from the **Comptroller's** receipt of all materials. The **Contractor** may not present its petition to the Contract Dispute Resolution Board until the period for investigation and compromise delineated in this Article 27.5.4 has expired. In compromising or adjusting any claim hereunder, the **Comptroller** may not revise or disregard the terms of the **Contract** between the parties.

27.6 Contract Dispute Resolution Board. There shall be a Contract Dispute Resolution Board composed of:

27.6.1 The chief administrative law judge of the Office of Administrative Trials and Hearings (OATH) or his/her designated OATH administrative law judge, who shall act as chairperson, and may adopt operational procedures and issue such orders consistent with this Article 27 as may be necessary in the execution of the Contract Dispute Resolution Board's functions, including, but not limited to, granting extensions of time to present or respond to submissions;

27.6.2 The **CCPO** or his/her designee; any designee shall have the requisite background to consider and resolve the merits of the dispute and shall not have participated personally and substantially in the particular matter that is the subject of the dispute or report to anyone who so participated; and

27.6.3 A person with appropriate expertise who is not an employee of the **City**. This person shall be selected by the presiding administrative law judge from a prequalified panel of individuals, established and administered by OATH with appropriate background to act as decision-makers in a dispute. Such individual may not have a contract or dispute with the **City** or be an officer or employee of any company or organization that does, or regularly represents persons, companies, or organizations having disputes with the **City**.

27.7 Petition to the Contract Dispute Resolution Board. In the event the claim has not been settled or adjusted by the **Comptroller** within the period provided in this Article 27, the **Contractor**,

within thirty (30) **Days** thereafter, may petition the Contract Dispute Resolution Board to review the **Commissioner's** determination.

27.7.1 **Form and Content of Petition by Contractor.** The **Contractor** shall present its dispute to the Contract Dispute Resolution Board in the form of a petition, which shall include (i) a brief written statement of the substance of the dispute, the amount of money, if any, claimed, and the reason(s) the **Contractor** contends the dispute was wrongly decided by the **Commissioner**; (ii) a copy of the written Decision of the **Commissioner**, (iii) copies of all materials submitted by the **Contractor** to the Agency; (iv) a copy of the written decision of the **Comptroller**, if any, and (v) copies of all correspondence with, or written material submitted by the **Contractor**, to the **Comptroller**. The **Contractor** shall concurrently submit four (4) complete sets of the Petition: one set to the **City** Corporation Counsel (Attn: Commercial and Real Estate Litigation Division) and three (3) sets to the Contract Dispute Resolution Board at OATH's offices with proof of service on the **City** Corporation Counsel. In addition, the **Contractor** shall submit a copy of the written statement of the substance of the dispute, cited in (i) above, to both the **Commissioner** and the **Comptroller**.

27.7.2 **Agency Response.** Within thirty (30) **Days** of its receipt of the Petition by the **City** Corporation Counsel, the **Agency** shall respond to the brief written statement of the **Contractor** and make available to the Contract Dispute Resolution Board all material it submitted to the **Commissioner** and **Comptroller**. Three (3) complete copies of the **Agency** response shall be provided to the Contract Dispute Resolution Board and one to the **Contractor**. Extensions of time for submittal of the **Agency** response shall be given as necessary upon a showing of good cause or, upon consent of the parties, for an initial period of up to thirty (30) **Days**.

27.7.3 **Further Proceedings.** The Contract Dispute Resolution Board shall permit the **Contractor** to present its case by submission of memoranda, briefs, and oral argument. The Contract Dispute Resolution Board shall also permit the **Agency** to present its case in response to the **Contractor** by submission of memoranda, briefs, and oral argument. If requested by the **City** Corporation Counsel, the **Comptroller** shall provide reasonable assistance in the preparation of the **Agency's** case. Neither the **Contractor** nor the **Agency** may support its case with any documentation or other material that was not considered by the **Comptroller**, unless requested by the Contract Dispute Resolution Board. The Contract Dispute Resolution Board, in its discretion, may seek such technical or other expert advice as it shall deem appropriate and may seek, on its own or upon application of a party, any such additional material from any party as it deems fit. The Contract Dispute Resolution Board, in its discretion, may combine more than one dispute between the parties for concurrent resolution.

27.7.4 **Contract Dispute Resolution Board Determination.** Within forty-five (45) **Days** of the conclusion of all written submissions and oral arguments, the Contract Dispute Resolution Board shall render a written decision resolving the dispute. In an unusually complex case, the Contract Dispute Resolution Board may render its decision in a longer period, not to exceed ninety (90) **Days**, and shall so advise the parties at the commencement of this period. The Contract Dispute Resolution Board's decision must be consistent with the terms of the **Contract**. Decisions of the Contract Dispute Resolution Board shall only resolve matters before the Contract Dispute Resolution Board and shall not have precedential effect with respect to matters not before the Contract Dispute Resolution Board.

27.7.5 Notification of Contract Dispute Resolution Board Decision. The Contract Dispute Resolution Board shall send a copy of its decision to the **Contractor**, the **ACCO**, the Engineer, the **Comptroller**, the **City** Corporation Counsel, the CCPO, and the **PPB**. A decision in favor of the **Contractor** shall be subject to the prompt payment provisions of the **PPB** Rules. The Required Payment Date shall be thirty (30) Days after the date the parties are formally notified of the Contract Dispute Resolution Board's decision.

27.7.6 Finality of Contract Dispute Resolution Board Decision. The Contract Dispute Resolution Board's decision shall be final and binding on all parties. Any party may seek review of the Contract Dispute Resolution Board's decision solely in the form of a challenge, filed within four (4) months of the date of the Contract Dispute Resolution Board's decision, in a court of competent jurisdiction of the State of New York, County of New York pursuant to Article 78 of the Civil Practice Law and Rules. Such review by the court shall be limited to the question of whether or not the Contract Dispute Resolution Board's decision was made in violation of lawful procedure, was affected by an error of **Law**, or was arbitrary and capricious or an abuse of discretion. No evidence or information shall be introduced or relied upon in such proceeding that was not presented to the Contract Dispute Resolution Board in accordance with this Article 27.

27.8 Any termination, cancellation, or alleged breach of the **Contract** prior to or during the pendency of any proceedings pursuant to this Article 27 shall not affect or impair the ability of the **Commissioner** or Contract Dispute Resolution Board to make a binding and final decision pursuant to this Article 27.

ARTICLE 28. RECORD KEEPING FOR EXTRA OR DISPUTED WORK OR WORK ON A TIME & MATERIALS BASIS

28.1 While the **Contractor** or any of its **Subcontractors** is performing **Work** on a time and material basis or **Extra Work** on a time and material basis ordered by the **Commissioner** under Article 25, or where the **Contractor** believes that it or any of its **Subcontractors** is performing **Extra Work** but a final determination by **Agency** has not been made, or the **Contractor** or any of its **Subcontractors** is performing disputed **Work** (whether on or off the **Site**), or complying with a determination or order under protest in accordance with Articles 11, 27, and 30, in each such case the **Contractor** shall furnish the **Resident Engineer** daily with three (3) copies of written statements signed by the **Contractor's** representative at the **Site** showing:

28.1.1 The name, trade, and number of each worker employed on such **Work** or engaged in complying with such determination or order, the number of hours employed, and the character of the **Work** each is doing; and

28.1.2 The nature and quantity of any materials, plant and equipment furnished or used in connection with the performance of such **Work** or compliance with such determination or order, and from whom purchased or rented.

28.2 A copy of such statement will be countersigned by the **Resident Engineer**, noting thereon any items not agreed to or questioned, and will be returned to the **Contractor** within two (2) **Days** after submission.

28.3 The **Contractor** and its **Subcontractors**, when required by the **Commissioner**, or the **Comptroller**, shall also produce for inspection, at the office of the **Contractor** or **Subcontractor**, any and all of its books, bid documents, financial statements, vouchers, records, daily job diaries and reports,

and cancelled checks, and any other documents relating to showing the nature and quantity of the labor, materials, plant and equipment actually used in the performance of such **Work**, or in complying with such determination or order, and the amounts expended therefor, and shall permit the **Commissioner** and the **Comptroller** to make such extracts therefrom, or copies thereof, as they or either of them may desire.

28.4 In connection with the examination provided for herein, the **Commissioner**, upon demand therefor, will produce for inspection by the **Contractor** such records as the **Agency** may have with respect to such **Extra Work** or disputed **Work** performed under protest pursuant to order of the **Commissioner**, except those records and reports which may have been prepared for the purpose of determining the accuracy and validity of the **Contractor's** claim.

28.5 Failure to comply strictly with these requirements shall constitute a waiver of any claim for extra compensation or damages on account of the performance of such **Work** or compliance with such determination or order.

ARTICLE 29. OMITTED WORK

29.1 If any **Contract Work** in a lump sum **Contract**, or if any part of a lump sum item in a unit price, lump sum, or percentage-bid **Contract** is omitted by the **Commissioner** pursuant to Article 33, the **Contract** price, subject to audit by the EAO, shall be reduced by a pro rata portion of the lump sum bid amount based upon the percent of **Work** omitted subject to Article 29.4. For the purpose of determining the pro rata portion of the lump sum bid amount, the bid breakdown submitted in accordance with Article 41 shall be considered, but shall not be the determining factor.

29.2 If the whole of a lump sum item or units of any other item is so omitted by the **Commissioner** in a unit price, lump sum, or percentage-bid **Contract**, then no payment will be made therefor except as provided in Article 29.4.

29.3 For units that have been ordered but are only partially completed, the unit price shall be reduced by a pro rata portion of the unit price bid based upon the percentage of **Work** omitted subject to Article 29.4.

29.4 In the event the **Contractor**, with respect to any omitted **Work**, has purchased any non-cancelable material and/or equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract**, but not yet incorporated into the **Work**, the **Contractor** shall be paid for such material and/or equipment in accordance with Article 64.2.1(b); provided, however, such payment is contingent upon the **Contractor's** delivery of such material and/or equipment in acceptable condition to a location designated by the **City**.

29.5 The **Contractor** agrees to make no claim for damages or for loss of overhead and profit with regard to any omitted **Work**.

ARTICLE 30. NOTICE AND DOCUMENTATION OF COSTS AND DAMAGES; PRODUCTION OF FINANCIAL RECORDS

30.1 If the **Contractor** shall claim to be sustaining damages by reason of any act or omission of the **City** or its agents, it shall submit to the **Commissioner** within forty-five (45) **Days** from the time such damages are first incurred, and every thirty (30) **Days** thereafter to the extent additional damages are being incurred for the same condition, verified statements of the details and the amounts of such

damages, together with documentary evidence of such damages. The **Contractor** may submit any of the above statements within such additional time as may be granted by the **Commissioner** in writing upon written request therefor. Failure of the **Commissioner** to respond in writing to a written request for additional time within thirty (30) **Days** shall be deemed a denial of the request. On failure of the **Contractor** to strictly comply with the foregoing provisions, such claims shall be deemed waived and no right to recover on such claims shall exist. Damages that the **Contractor** may claim in any action or dispute resolution procedure arising under or by reason of this **Contract** shall not be different from or in excess of the statements and documentation made pursuant to this Article 30. This Article 30.1 does not apply to claims submitted to the **Commissioner** pursuant to Article 11 or to claims disputing a determination under Article 27.

30.2 In addition to the foregoing statements, the **Contractor** shall, upon notice from the **Commissioner**, produce for examination at the **Contractor's** office, by the **Engineer, Architect** or **Project Manager**, all of its books of account, bills, invoices, payrolls, subcontracts, time books, daily reports, bank deposit books, bank statements, check books, and cancelled checks, showing all of its acts and transactions in connection with or relating to or arising by reason of this **Contract**, and submit itself and persons in its employment, for examination under oath by any person designated by the **Commissioner** or **Comptroller** to investigate claims made or disputes against the **City** under this **Contract**. At such examination, a duly authorized representative of the **Contractor** may be present.

30.3 In addition to the statements required under Article 28 and this Article 30, the **Contractor** and/or its **Subcontractor** shall, within thirty (30) **Days** upon notice from the **Commissioner** or **Comptroller**, produce for examination at the **Contractor's** and/or **Subcontractor's** office, by a representative of either the **Commissioner** or **Comptroller**, all of its books of account, bid documents, financial statements, accountant workpapers, bills, invoices, payrolls, subcontracts, time books, daily reports, bank deposit books, bank statements, check books, and cancelled checks, showing all of its acts and transactions in connection with or relating to or arising by reason of this **Contract**. Further, the **Contractor** and/or its **Subcontractor** shall submit any person in its employment, for examination under oath by any person designated by the **Commissioner** or **Comptroller** to investigate claims made or disputes against the **City** under this **Contract**. At such examination, a duly authorized representative of the **Contractor** may be present.

30.4 Unless the information and examination required under Article 30.3 is provided by the **Contractor** and/or its **Subcontractor** upon thirty (30) **Days'** notice from the **Commissioner** or **Comptroller**, or upon the **Commissioner's** or **Comptroller's** written authorization to extend the time to comply, the **City** shall be released from all claims arising under, relating to or by reason of this **Contract**, except for sums certified by the **Commissioner** to be due under the provisions of this **Contract**. It is further stipulated and agreed that no person has the power to waive any of the foregoing provisions and that in any action or dispute resolution procedure against the **City** to recover any sum in excess of the sums certified by the **Commissioner** to be due under or by reason of this **Contract**, the **Contractor** must allege in its complaint and prove, at trial or during such dispute resolution procedure, compliance with the provisions of this Article 30.

30.5 In addition, after the commencement of any action or dispute resolution procedure by the **Contractor** arising under or by reason of this **Contract**, the **City** shall have the right to require the **Contractor** to produce for examination under oath, up until the trial of the action or hearing before the Contract Dispute Resolution Board, the books and documents described in Article 30.3 and submit itself and all persons in its employ for examination under oath. If this Article 30 is not complied with as required, then the **Contractor** hereby consents to the dismissal of the action or dispute resolution procedure.

CHAPTER VII: POWERS OF THE RESIDENT ENGINEER, THE ENGINEER OR ARCHITECT AND THE COMMISSIONER

ARTICLE 31. THE RESIDENT ENGINEER

31.1 The **Resident Engineer** shall have the power to inspect, supervise, and control the performance of the **Work**, subject to review by the **Commissioner**. The **Resident Engineer** shall not, however, have the power to issue an **Extra Work** order, except as specifically designated in writing by the **Commissioner**.

ARTICLE 32. THE ENGINEER OR ARCHITECT OR PROJECT MANAGER

32.1 The **Engineer** or **Architect** or **Project Manager**, in addition to those matters elsewhere herein delegated to the **Engineer** and expressly made subject to his/her determination, direction or approval, shall have the power, subject to review by the **Commissioner**:

32.1.1 To determine the amount, quality, and location of the **Work** to be paid for hereunder; and

32.1.2 To determine all questions in relation to the **Work**, to interpret the **Contract Drawings, Specifications, and Addenda**, and to resolve all patent inconsistencies or ambiguities therein; and

32.1.3 To determine how the **Work** of this **Contract** shall be coordinated with **Work** of **Other Contractors** engaged simultaneously on this **Project**, including the power to suspend any part of the **Work**, but not the whole thereof; and

32.1.4 To make minor changes in the **Work** as he/she deems necessary, provided such changes do not result in a net change in the cost to the **City** or to the **Contractor** of the **Work** to be done under the **Contract**; and

32.1.5 To amplify the **Contract Drawings**, add explanatory information and furnish additional **Specifications** and drawings, consistent with this **Contract**.

32.2 The foregoing enumeration shall not imply any limitation upon the power of the **Engineer** or **Architect** or **Project Manager**, for it is the intent of this **Contract** that all of the **Work** shall generally be subject to his/her determination, direction, and approval, except where the determination, direction or approval of someone other than the **Engineer** or **Architect** or **Project Manager** is expressly called for herein.

32.3 The **Engineer** or **Architect** or **Project Manager** shall not, however, have the power to issue an **Extra Work** order, except as specifically designated in writing by the **Commissioner**.

ARTICLE 33. THE COMMISSIONER

33.1 The **Commissioner**, in addition to those matters elsewhere herein expressly made subject to his/her determination, direction or approval, shall have the power:

33.1.1 To review and make determinations on any and all questions in relation to this **Contract** and its performance; and

33.1.2 To modify or change this **Contract** so as to require the performance of **Extra Work** (subject, however, to the limitations specified in Article 25) or the omission of **Contract Work**; and

33.1.3 To suspend the whole or any part of the **Work** whenever in his/her judgment such suspension is required:

33.1.3(a) In the interest of the **City** generally; or

33.1.3(b) To coordinate the **Work** of the various contractors engaged on this **Project** pursuant to the provisions of Article 12; or

33.1.3(c) To expedite the completion of the entire **Project** even though the completion of this particular **Contract** may thereby be delayed.

ARTICLE 34. NO ESTOPPEL

34.1 Neither the **City** nor any **Agency**, official, agent or employee thereof, shall be bound, precluded or estopped by any determination, decision, approval, order, letter, payment or certificate made or given under or in connection with this **Contract** by the **City**, the **Commissioner**, the **Engineer**, the **Resident Engineer**, or any other official, agent or employee of the **City**, either before or after the final completion and acceptance of the **Work** and payment therefor:

34.1.1 From showing the true and correct classification, amount, quality or character of the **Work** actually done; or that any such determination, decision, order, letter, payment or certificate was untrue, incorrect or improperly made in any particular, or that the **Work**, or any part thereof, does not in fact conform to the requirements of this **Contract**; and

34.1.2 From demanding and recovering from the **Contractor** any overpayment made to it, or such damages as the **City** may sustain by reason of the **Contractor's** failure to perform each and every part of its **Contract**.

CHAPTER VIII: LABOR PROVISIONS

ARTICLE 35. EMPLOYEES

35.1 The **Contractor** and its **Subcontractors** shall not employ on the **Work**:

35.1.1 Anyone who is not competent, faithful and skilled in the **Work** for which he/she shall be employed; and whenever the **Commissioner** shall inform the **Contractor**, in writing, that any employee is, in his/her opinion, incompetent, unfaithful or disobedient, that employee shall be discharged from the **Work** forthwith, and shall not again be employed upon it; or

35.1.2 Any labor, materials or means whose employment, or utilization during the course of this **Contract**, may tend to or in any way cause or result in strikes, work stoppages, delays, suspension of **Work** or similar troubles by workers employed by the **Contractor** or its **Subcontractors**, or by any of the trades working in or about the buildings and premises where **Work** is being performed under this **Contract**, or by **Other Contractors** or their **Subcontractors** pursuant to other contracts, or on any other building or premises owned or operated by the **City**, its **Agencies**, departments, boards or authorities. Any violation by the **Contractor** of this requirement may, upon certification of the **Commissioner**, be considered as proper and sufficient cause for declaring the **Contractor** to be in default, and for the **City** to take action against it as set forth in Chapter X of this **Contract**, or such other article of this **Contract** as the Commissioner may deem proper; or

35.1.3 In accordance with Section 220.3-e of the Labor Law of the State of New York (hereinafter "Labor Law"), the **Contractor** and its **Subcontractors** shall not employ on the **Work** any apprentice, unless he/she is a registered individual, under a bona fide program registered with the New York State Department of Labor. The allowable ratio of apprentices to journey-level workers in any craft classification shall not be greater than the ratio permitted to the **Contractor** as to its work force on any job under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered as above, shall be paid the wage rate determined by the **Comptroller** of the **City** for the classification of **Work** actually performed. The **Contractor** or **Subcontractor** will be required to furnish written evidence of the registration of its program and apprentices as well as all the appropriate ratios and wage rates, for the area of the construction prior to using any apprentices on the **Contract Work**.

35.2 If the total cost of the **Work** under this **Contract** is at least two hundred fifty thousand (\$250,000) dollars, all laborers, workers, and mechanics employed in the performance of the **Contract** on the public work site, either by the **Contractor**, **Subcontractor** or other person doing or contracting to do the whole or a part of the **Work** contemplated by the **Contract**, shall be certified prior to performing any **Work** as having successfully completed a course in construction safety and health approved by the United States Department of Labor's Occupational Safety and Health Administration that is at least ten (10) hours in duration.

35.3 In accordance with Local Law Nos. 30-2012 and 33-2012, codified at sections 6-132 and 12-113 of the Administrative Code, respectively,

35.3.1 The **Contractor** shall not take an adverse personnel action with respect to an officer or employee in retaliation for such officer or employee making a report of information concerning conduct which such officer or employee knows or reasonably believes to involve corruption, criminal activity, conflict of interest, gross mismanagement or abuse of authority by any officer or employee relating to this **Contract** to (a) the Commissioner of the Department of Investigation, (b) a member of the New York City Council, the Public Advocate, or the **Comptroller**, or (c) the **CCPO**, **ACCO**, **Agency** head, or **Commissioner**.

35.3.2 If any of the **Contractor's** officers or employees believes that he or she has been the subject of an adverse personnel action in violation of Article 35.3.1, he or she shall be entitled to bring a cause of action against the **Contractor** to recover all relief necessary to make him or her whole. Such relief may include but is not limited to: (a) an injunction to restrain continued retaliation, (b) reinstatement to the position such employee would have had but for the retaliation or to an equivalent position, (c) reinstatement of full fringe benefits and seniority rights, (d) payment of two times back

pay, plus interest, and (e) compensation for any special damages sustained as a result of the retaliation, including litigation costs and reasonable attorney's fees.

35.3.3 The **Contractor** shall post a notice provided by the **City** in a prominent and accessible place on any site where work pursuant to the **Contract** is performed that contains information about:

35.3.3(a) how its employees can report to the New York City Department of Investigation allegations of fraud, false claims, criminality or corruption arising out of or in connection with the **Contract**; and

35.3.3(b) the rights and remedies afforded to its employees under Administrative Code sections 7-805 (the New York City False Claims Act) and 12-113 (the Whistleblower Protection Expansion Act) for lawful acts taken in connection with the reporting of allegations of fraud, false claims, criminality or corruption in connection with the **Contract**.

35.3.4 For the purposes of this Article 35.3, "adverse personnel action" includes dismissal, demotion, suspension, disciplinary action, negative performance evaluation, any action resulting in loss of staff, office space, equipment or other benefit, failure to appoint, failure to promote, or any transfer or assignment or failure to transfer or assign against the wishes of the affected officer or employee.

35.3.5 This Article 35.3 is applicable to all of the **Contractor's Subcontractors** having subcontracts with a value in excess of \$100,000; accordingly, the **Contractor** shall include this rider in all subcontracts with a value in excess of \$100,000.

35.4 Article 35.3 is not applicable to this **Contract** if it is valued at \$100,000 or less. Articles 35.3.1, 35.3.2, 35.3.4, and 35.3.5 are not applicable to this **Contract** if it was solicited pursuant to a finding of an emergency.

35.5 Paid Sick Leave Law.

35.5.1 Introduction and General Provisions.

35.5.1(a) The Earned Sick Time Act, also known as the Paid Sick Leave Law ("PSLL"), requires covered employees who annually perform more than 80 hours of work in New York City to be provided with paid sick time.² Contractors of the **City** or of other governmental entities may be required to provide sick time pursuant to the PSLL.

35.5.1(b) The PSLL became effective on April 1, 2014, and is codified at Title 20, Chapter 8, of the New York City Administrative Code. It is administered by the City's Department of Consumer Affairs ("DCA"); DCA's rules promulgated under the PSLL are codified at Chapter 7 of Title 6 of the Rules of the City of New York ("Rules").

² Pursuant to the PSLL, if fewer than five employees work for the same employer, as determined pursuant to New York City Administrative Code § 20-912(g), such employer has the option of providing such employees uncompensated sick time.

35.5.1(c) The **Contractor** agrees to comply in all respects with the PSLL and the Rules, and as amended, if applicable, in the performance of this **Contract**. The **Contractor** further acknowledges that such compliance is a material term of this **Contract** and that failure to comply with the PSLL in performance of this **Contract** may result in its termination.

35.5.1(d) The **Contractor** must notify the **Agency Chief Contracting Officer** of the **Agency** with whom it is contracting in writing within ten (10) days of receipt of a complaint (whether oral or written) regarding the PSLL involving the performance of this **Contract**. Additionally, the **Contractor** must cooperate with DCA's education efforts and must comply with DCA's subpoenas and other document demands as set forth in the PSLL and Rules.

35.5.1(e) The PSLL is summarized below for the convenience of the **Contractor**. The **Contractor** is advised to review the PSLL and Rules in their entirety. On the website www.nyc.gov/PaidSickLeave there are links to the PSLL and the associated Rules as well as additional resources for employers, such as Frequently Asked Questions, timekeeping tools and model forms, and an event calendar of upcoming presentations and webinars at which the **Contractor** can get more information about how to comply with the PSLL. The **Contractor** acknowledges that it is responsible for compliance with the PSLL notwithstanding any inconsistent language contained herein.

35.5.2 Pursuant to the PSLL and the Rules: Applicability, Accrual, and Use.

35.5.2(a) An employee who works within the City of New York for more than eighty hours in any consecutive 12-month period designated by the employer as its "calendar year" pursuant to the PSLL ("Year") must be provided sick time. Employers must provide a minimum of one hour of sick time for every 30 hours worked by an employee and compensation for such sick time must be provided at the greater of the employee's regular hourly rate or the minimum wage. Employers are not required to provide more than 40 hours of sick time to an employee in any Year.

35.5.2(b) An employee has the right to determine how much sick time he or she will use, provided that employers may set a reasonable minimum increment for the use of sick time not to exceed four hours per **Day**. In addition, an employee may carry over up to 40 hours of unused sick time to the following Year, provided that no employer is required to allow the use of more than forty hours of sick time in a Year or carry over unused paid sick time if the employee is paid for such unused sick time and the employer provides the employee with at least the legally required amount of paid sick time for such employee for the immediately subsequent Year on the first **Day** of such Year.

35.5.2(c) An employee entitled to sick time pursuant to the PSLL may use sick time for any of the following:

- i. such employee's mental illness, physical illness, injury, or health condition or the care of such illness, injury, or condition or such employee's need for medical diagnosis or preventive medical care;
- ii. such employee's care of a family member (an employee's child, spouse, domestic partner, parent, sibling, grandchild or grandparent, or the child or parent of an employee's spouse or domestic partner) who has a mental

- illness, physical illness, injury or health condition or who has a need for medical diagnosis or preventive medical care;
- iii. closure of such employee's place of business by order of a public official due to a public health emergency; or
- iv. such employee's need to care for a child whose school or childcare provider has been closed due to a public health emergency.

35.5.2(d) An employer must not require an employee, as a condition of taking sick time, to search for a replacement. However, an employer may require an employee to provide: reasonable notice of the need to use sick time; reasonable documentation that the use of sick time was needed for a reason above if for an absence of more than three consecutive work days; and/or written confirmation that an employee used sick time pursuant to the PSL. However, an employer may not require documentation specifying the nature of a medical condition or otherwise require disclosure of the details of a medical condition as a condition of providing sick time and health information obtained solely due to an employee's use of sick time pursuant to the PSL must be treated by the employer as confidential.

35.5.2(e) If an employer chooses to impose any permissible discretionary requirement as a condition of using sick time, it must provide to all employees a written policy containing those requirements, using a delivery method that reasonably ensures that employees receive the policy. If such employer has not provided its written policy, it may not deny sick time to an employee because of non-compliance with such a policy.

35.5.2(f) Sick time to which an employee is entitled must be paid no later than the payday for the next regular payroll period beginning after the sick time was used.

35.5.3 Exemptions and Exceptions. Notwithstanding the above, the PSL does not apply to any of the following:

35.5.3(a) an independent contractor who does not meet the definition of employee under section 190(2) of the New York State Labor Law;

35.5.3(b) an employee covered by a valid collective bargaining agreement in effect on April 1, 2014, until the termination of such agreement;

35.5.3(c) an employee in the construction or grocery industry covered by a valid collective bargaining agreement if the provisions of the PSL are expressly waived in such collective bargaining agreement;

35.5.3(d) an employee covered by another valid collective bargaining agreement if such provisions are expressly waived in such agreement and such agreement provides a benefit comparable to that provided by the PSL for such employee;

35.5.3(e) an audiologist, occupational therapist, physical therapist, or speech language pathologist who is licensed by the New York State Department of Education and who calls in for work assignments at will, determines his or her own schedule, has the ability to reject or accept any assignment referred to him or her, and is paid an average hourly wage that is at least four times the federal minimum wage;

35.5.3(f) an employee in a work study program under Section 2753 of Chapter 42 of the United States Code;

35.5.3(g) an employee whose work is compensated by a qualified scholarship program as that term is defined in the Internal Revenue Code, Section 117 of Chapter 20 of the United States Code; or

35.5.3(h) a participant in a Work Experience Program (WEP) under section 336-c of the New York State Social Services Law.

35.5.4 Retaliation Prohibited. An employer may not threaten or engage in retaliation against an employee for exercising or attempting in good faith to exercise any right provided by the PSL. In addition, an employer may not interfere with any investigation, proceeding, or hearing pursuant to the PSL.

35.5.5 Notice of Rights.

35.5.5(a) An employer must provide its employees with written notice of their rights pursuant to the PSL. Such notice must be in English and the primary language spoken by an employee, provided that DCA has made available a translation into such language. Downloadable notices are available on DCA's website at <http://www.nyc.gov/html/dca/html/law/PaidSickLeave.shtml>.

35.5.5(b) Any person or entity that willfully violates these notice requirements is subject to a civil penalty in an amount not to exceed fifty dollars for each employee who was not given appropriate notice.

35.5.6 Records. An employer must retain records documenting its compliance with the PSL for a period of at least three years, and must allow DCA to access such records in furtherance of an investigation related to an alleged violation of the PSL.

35.5.7 Enforcement and Penalties.

35.5.7(a) Upon receiving a complaint alleging a violation of the PSL, DCA has the right to investigate such complaint and attempt to resolve it through mediation. Within 30 **Days** of written notification of a complaint by DCA, or sooner in certain circumstances, the employer must provide DCA with a written response and such other information as DCA may request. If DCA believes that a violation of the PSL has occurred, it has the right to issue a notice of violation to the employer.

35.5.7(b) DCA has the power to grant an employee or former employee all appropriate relief as set forth in New York City Administrative Code § 20-924(d). Such relief may include, among other remedies, treble damages for the wages that should have been paid, damages for unlawful retaliation, and damages and reinstatement for unlawful discharge. In addition, DCA may impose on an employer found to have violated the PSL civil penalties not to exceed \$500 for a first violation, \$750 for a second violation within two years of the first violation, and \$1,000 for each succeeding violation within two years of the previous violation.

35.5.8 More Generous Policies and Other Legal Requirements. Nothing in the PSL is intended to discourage, prohibit, diminish, or impair the adoption or retention of a more generous sick time policy, or the obligation of an employer to comply with any contract,

collective bargaining agreement, employment benefit plan or other agreement providing more generous sick time. The PSLI provides minimum requirements pertaining to sick time and does not preempt, limit or otherwise affect the applicability of any other law, regulation, rule, requirement, policy or standard that provides for greater accrual or use by employees of sick leave or time, whether paid or unpaid, or that extends other protections to employees. The PSLI may not be construed as creating or imposing any requirement in conflict with any federal or state law, rule or regulation.

35.6 HireNYC: Hiring and Reporting Requirements. This Article 35.6 applies to construction contracts of \$1,000,000 or more. The **Contractor** shall comply with the requirements of Articles 35.6.1-35.6.5 for all non-trades jobs (e.g., for an administrative position arising out of **Work** ant located in New York City). The **Contractor** shall reasonably cooperate with SBS and the **City** on specific outreach events, including “Hire-on-the-Spot” events, for the hiring of trades workers in connection with the **Work**. If provided elsewhere in this **Contract**, this **Contract** is subject to a project labor agreement.

35.6.1 Enrollment. The **Contractor** shall enroll with the HireNYC system, found at www.nyc.gov/sbs, within thirty (30) days after the registration of this **Contract** pursuant to Section 328 of the New York City Charter. The **Contractor** shall provide information about the business, designate a primary contact and say whether it intends to hire for any entry to mid-level job opportunities arising from this **Contract** and located in New York City, and, if so, the approximate start date of the first hire.

35.6.2 Job Posting Requirements.

35.6.2(a) Once enrolled in HireNYC, the **Contractor** agrees to update the HireNYC portal with all entry to mid-level job opportunities arising from this **Contract** and located in New York City, if any, which shall be defined as jobs requiring no more than an associate degree, as provided by the New York State Department of Labor (see Column F of <https://labor.ny.gov/stats/2012-2022-NYS-Employment-Prospects.xls>). The information to be updated includes the types of entry and mid-level positions made available from the work arising from the **Contract** and located in New York City, the number of positions, the anticipated schedule of initiating the hiring process for these positions, and the contact information for the **Contractor’s** representative charged with overseeing hiring. The **Contractor** must update the HireNYC portal with any hiring needs arising from the contract and located in New York City, and the requirements of the jobs to be filled, no less than three weeks prior to the intended first day of employment for each new position, except with the permission of SBS, not to be unreasonably withheld, and must also update the HireNYC portal as set forth below.

35.6.2(b) After enrollment through HireNYC and submission of relevant information, SBS will work with the **Contractor** to develop a recruitment plan which will outline the candidate screening process, and will provide clear instructions as to when, where, and how interviews will take place. HireNYC will screen applicants based on employer requirements and refer applicants whom it believes are qualified to the **Contractor** for interviews. The **Contractor** must interview referred applicants whom it believes are qualified.

35.6.2(c) After completing an interview of a candidate referred by HireNYC, the **Contractor** must provide feedback via the portal within twenty (20) business days to indicate which candidates were interviewed and hired, if any. In addition, the **Contractor** shall provide the start date of new hires, and additional information

reasonably related to such hires, within twenty (20) business days after the start date. In the event the **Contractor** does not have any job openings covered by this Rider in any given year, the **Contractor** shall be required to provide an annual update to HireNYC to that effect. For this purpose, the reporting year shall run from the date of the registration of the **Contract** pursuant to Charter section 328 and each anniversary date.

35.6.2(d) These requirements do not limit the **Contractor's** ability to assess the qualifications of prospective workers, and to make final hiring and retention decisions. No provision of this Article 35.6 shall be interpreted so as to require the **Contractor** to employ any particular worker.

35.6.2(e) In addition, the provisions of this Article 35.6 shall not apply to positions that the **Contractor** intends to fill with employees employed pursuant to the job retention provision of Section 22-505 of the Administrative Code of the City of New York. The **Contractor** shall not be required to report such openings with HireNYC. However, the **Contractor** shall enroll with the HireNYC system pursuant to Article 35.6.1, above, and, if such positions subsequently become open, then the remaining provisions of this Article 35.6 will apply.

35.6.3 Breach and Liquidated Damages. If the **Contractor** fails to comply with the terms of the **ContrSact** and this Article 35.6 (1) by not enrolling its business with HireNYC; (2) by not informing HireNYC, as required, of open positions; or (3) by failing to interview a qualified candidate, the **Agency** may assess liquidated damages in the amount of two-thousand five hundred dollars (\$2,500) per breach. For all other events of noncompliance with the terms of this Article 35.6, the **Agency** may assess liquidated damages in the amount of five hundred dollars (\$500) per breach. Furthermore, in the event the **Contractor** breaches the requirements of this Article 35.6 during the term of the **Contract**, the **City** may hold the **Contractor** in default of this **Contract**.

35.6.4 Audit Compliance. In addition to the auditing requirements set forth in other parts of the **Contract**, the **Contractor** shall permit SBS and the **City** to inspect any and all records concerning or relating to job openings or the hiring of individuals for work arising from the **Contract** and located in New York City. The **Contractor** shall permit an inspection within seven (7) business days of the request.

35.6.5 Other Reporting Requirements. The **Contractor** shall report to the **City**, on a monthly basis, all information reasonably requested by the **City** that is necessary for the **City** to comply with any reporting requirements imposed by **Law**, including any requirement that the **City** maintain a publicly accessible database. In addition, the **Contractor** agrees to comply with all reporting requirements imposed by **Law**, or as otherwise requested by the **City**.

35.6.6 Federal Hiring Requirements. If this **Contract** is federally funded (as indicated elsewhere in this Contract), the **Contractor** shall comply with all federal hiring requirements as may be set forth in this **Contract**, including, as applicable: (a) Section 3 of the HUD Act of 1968, which requires, to the greatest extent feasible, economic opportunities for 30 percent of new hires be given to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing and Executive Order 11246, which prohibits discrimination in employment due to race, color, religion, sex or national origin, and requires the implementation of goals for minority and female participation for work involving any construction trade.

ARTICLE 36. NO DISCRIMINATION

36.1 The **Contractor** specifically agrees, as required by Labor Law Section 220-e, as amended, that:

36.1.1 In the hiring of employees for the performance of **Work** under this **Contract** or any subcontract hereunder, neither the **Contractor**, **Subcontractor**, nor any person acting on behalf of such **Contractor** or **Subcontractor**, shall by reason of race, creed, color or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the **Work** to which the employment relates;

36.1.2 Neither the **Contractor**, **Subcontractor**, nor any person on its behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of **Work** under this **Contract** on account of race, creed, color or national origin;

36.1.3 There may be deducted from the amount payable to the **Contractor** by the **City** under this **Contract** a penalty of fifty (\$50.00) dollars for each person for each **Day** during which such person was discriminated against or intimidated in violation of the provisions of this **Contract**; and

36.1.4 This **Contract** may be cancelled or terminated by the **City** and all moneys due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this Article 36.

36.1.5 This Article 36 covers all construction, alteration and repair of any public building or public work occurring in the State of New York and the manufacture, sale, and distribution of materials, equipment, and supplies to the extent that such operations are performed within the State of New York pursuant to this **Contract**.

36.2 The **Contractor** specifically agrees, as required by Section 6-108 of the Administrative Code, as amended, that:

36.2.1 It shall be unlawful for any person engaged in the construction, alteration or repair of buildings or engaged in the construction or repair of streets or highways pursuant to a **Contract** with the **City** or engaged in the manufacture, sale or distribution of materials, equipment or supplies pursuant to a **Contract** with the **City** to refuse to employ or to refuse to continue in any employment any person on account of the race, color or creed of such person.

36.2.2 It shall be unlawful for any person or any servant, agent or employee of any person, described in Article 36.1.2, to ask, indicate or transmit, orally or in writing, directly or indirectly, the race, color or creed or religious affiliation of any person employed or seeking employment from such person, firm or corporation.

36.2.3 Breach of the foregoing provisions shall be deemed a violation of a material provision of this **Contract**.

36.2.4 Any person, or the employee, manager or owner of or officer of such firm or corporation who shall violate any of the provisions of this Article 36.2 shall, upon

conviction thereof, be punished by a fine of not more than one hundred (\$100.00) dollars or by imprisonment for not more than thirty (30) **Days**, or both.

36.3 This **Contract** is subject to the requirements of Executive Order No. 50 (1980) (“E.O. 50”), as revised, and the rules and regulations promulgated thereunder. No contract will be awarded unless and until these requirements have been complied with in their entirety. By signing this **Contract**, the **Contractor** agrees that it:

36.3.1 Will not engage in any unlawful discrimination against any employee or applicant for employment because of race, creed, color, national origin, sex, age, disability, marital status or sexual orientation with respect to all employment decisions including, but not limited to, recruitment, hiring, upgrading, demotion, downgrading, transfer, training, rates of pay or other forms of compensation, layoff, termination, and all other terms and conditions of employment; and

36.3.2 Will not engage in any unlawful discrimination in the selection of **Subcontractors** on the basis of the owner’s race, color, creed, national origin, sex, age, disability, marital status or sexual orientation; and

36.3.3 Will state in all solicitations or advertisements for employees placed by or on behalf of the **Contractor** that all qualified applicants will receive consideration for employment without unlawful discrimination based on race, creed, color, national origin, sex, age, citizens status, disability, marital status, sexual orientation, or that it is an equal employment opportunity employer; and

36.3.4 Will send to each labor organization or representative of workers with which it has a collective bargaining agreement or other contract or memorandum of understanding, written notification of its equal employment opportunity commitments under E.O. 50 and the rules and regulations promulgated thereunder; and

36.3.5 Will furnish, before the award of the **Contract**, all information and reports, including an employment report, that are required by E.O. 50, the rules and regulations promulgated thereunder, and orders of the **City** Department of Business Services, Division of Labor Services (**DLS**) and will permit access to its books, records, and accounts by the **DLS** for the purposes of investigation to ascertain compliance with such rules, regulations, and orders.

36.4 The **Contractor** understands that in the event of its noncompliance with the nondiscrimination clauses of this **Contract** or with any of such rules, regulations, or orders, such noncompliance shall constitute a material breach of this **Contract** and noncompliance with E.O. 50 and the rules and regulations promulgated thereunder. After a hearing held pursuant to the rules of the **DLS**, the Director of the **DLS** may direct the **Commissioner** to impose any or all of the following sanctions:

36.4.1 Disapproval of the **Contractor**; and/or

36.4.2 Suspension or termination of the **Contract**; and/or

36.4.3 Declaring the **Contractor** in default; and/or

36.4.4 In lieu of any of the foregoing sanctions, the Director of the **DLS** may impose an employment program.

In addition to any actions taken under this **Contract**, failure to comply with E.O. 50 and the rules and regulations promulgated thereunder, in one or more instances, may result in a **City Agency** declaring the **Contractor** to be non-responsible in future procurements. The **Contractor** further agrees that it will refrain from entering into any **Contract** or **Contract** modification subject to E.O. 50 and the rules and regulations promulgated thereunder with a **Subcontractor** who is not in compliance with the requirements of E.O. 50 and the rules and regulations promulgated thereunder.

36.5 The **Contractor** specifically agrees, as required by Section 6-123 of the Administrative Code, that:

36.5.1 The **Contractor** will not engage in any unlawful discriminatory practice in violation of Title 8 of the Administrative Code; and

36.5.2 Any failure to comply with this Article 36.5 may subject the **Contractor** to the remedies set forth in Section 6-123 of the Administrative Code, including, where appropriate, sanctions such as withholding of payment, imposition of an employment program, finding the **Contractor** to be in default, cancellation of the **Contract**, or any other sanction or remedy provided by **Law** or **Contract**.

ARTICLE 37. LABOR LAW REQUIREMENTS

37.1 The **Contractor** shall strictly comply with all applicable provisions of the Labor Law, as amended. Such compliance is a material term of this **Contract**.

37.2 The **Contractor** specifically agrees, as required by Labor Law Sections 220 and 220-d, as amended, that:

37.2.1 Hours of **Work**: No laborer, worker, or mechanic in the employ of the **Contractor**, **Subcontractor** or other person doing or contracting to do the whole or a part of the **Work** contemplated by this **Contract** shall be permitted or required to work more than eight (8) hours in any one (1) **Day**, or more than five (5) **Days** in any one (1) week, except as provided in the Labor Law and in cases of extraordinary emergency including fire, flood, or danger to life or property, or in the case of national emergency when so proclaimed by the President of the United States of America.

37.2.2 In situations in which there are not sufficient laborers, workers, and mechanics who may be employed to carry on expeditiously the **Work** contemplated by this **Contract** as a result of such restrictions upon the number of hours and **Days** of labor, and the immediate commencement or prosecution or completion without undue delay of the **Work** is necessary for the preservation of the **Site** and/or for the protection of the life and limb of the persons using the same, such laborers, workers, and mechanics shall be permitted or required to work more than eight (8) hours in any one (1) **Day**; or five (5) **Days** in any one (1) week; provided, however, that upon application of any **Contractor**, the **Commissioner** shall have first certified to the Commissioner of Labor of the State of New York (hereinafter "Commissioner of Labor") that such public **Work** is of an important nature and that a delay in carrying it to completion would result in serious disadvantage to the public; and provided, further, that such Commissioner of Labor shall have determined that such an emergency does in fact exist as provided in Labor Law Section 220.2.

37.2.3 Failure of the **Commissioner** to make such a certification to the Commissioner of Labor shall not entitle the **Contractor** to damages for delay or for any cause whatsoever.

37.2.4 Prevailing Rate of Wages: The wages to be paid for a legal day's **Work** to laborers, workers, or mechanics employed upon the **Work** contemplated by this **Contract** or upon any materials to be used thereon shall not be less than the "prevailing rate of wage" as defined in Labor Law Section 220, and as fixed by the **Comptroller** in the attached Schedule of Wage Rates and in updated schedules thereof. The prevailing wage rates and supplemental benefits to be paid are those in effect at the time the **Work** is being performed.

37.2.5 Requests for interpretation or correction in the Information for Bidders includes all requests for clarification of the classification of trades to be employed in the performance of the **Work** under this **Contract**. In the event that a trade not listed in the **Contract** is in fact employed during the performance of this **Contract**, the **Contractor** shall be required to obtain from the **Agency** the prevailing wage rates and supplementary benefits for the trades used and to complete the performance of this **Contract** at the price at which the **Contract** was awarded.

37.2.6 Minimum Wages: Except for employees whose wage is required to be fixed pursuant to Labor Law Section 220, all persons employed by the **Contractor** and any **Subcontractor** in the manufacture or furnishing of the supplies, materials, or equipment, or the furnishing of work, labor, or services, used in the performance of this **Contract**, shall be paid, without subsequent deduction or rebate unless expressly authorized by **Law**, not less than the sum mandated by **Law**.

37.3 Working Conditions: No part of the **Work**, labor or services shall be performed or rendered by the **Contractor** in any plants, factories, buildings or surroundings or under working conditions which are unsanitary or hazardous or dangerous to the health and safety of employees engaged in the performance of this **Contract**. Compliance with the safety, sanitary, and factory inspection **Laws** of the state in which the **Work** is to be performed shall be prima facie evidence of compliance with this Article 37.3.

37.4 Prevailing Wage Enforcement: The **Contractor** agrees to pay for all costs incurred by the **City** in enforcing prevailing wage requirements, including the cost of any investigation conducted by or on behalf of the **Agency** or the **Comptroller**, where the **City** discovers a failure to comply with any of the requirements of this Article 37 by the **Contractor** or its **Subcontractor(s)**. The **Contractor** also agrees that, should it fail or refuse to pay for any such investigation, the **Agency** is hereby authorized to deduct from a **Contractor's** account an amount equal to the cost of such investigation.

37.4.1 The Labor Law Section 220 and Section 220-d, as amended, provide that this **Contract** shall be forfeited and no sum paid for any **Work** done hereunder on a second conviction for willfully paying less than:

37.4.1(a) The stipulated prevailing wage scale as provided in Labor Law section 220, as amended, or

37.4.1(b) The stipulated minimum hourly wage scale as provided in Labor Law section 220-d, as amended.

37.4.2 For any breach or violation of either working conditions (Article 37.3) or minimum wages (Article 37.2.6) provisions, the party responsible therefor shall be liable to the **City** for liquidated damages, which may be withheld from any amounts due on any contracts with the **City** of such party responsible, or may be recovered in actions brought by the **City**

Corporation Counsel in the name of the **City**, in addition to damages for any other breach of this **Contract**, for a sum equal to the amount of any underpayment of wages due to any employee engaged in the performance of this **Contract**. In addition, the **Commissioner** shall have the right to cancel contracts and enter into other contracts for the completion of the original contract, with or without public letting, and the original **Contractor** shall be liable for any additional cost. All sums withheld or recovered as deductions, rebates, refunds, or underpayment of wages hereunder, shall be held in a special deposit account and shall be paid without interest, on order of the **Comptroller**, directly to the employees who have been paid less than minimum rates of pay as set forth herein and on whose account such sums were withheld or recovered, provided that no claims by employees for such payments shall be entertained unless made within two (2) years from the date of actual notice to the **Contractor** of the withholding or recovery of such sums by the **City**.

37.4.3 A determination by the **Comptroller** that a **Contractor** and/or its **Subcontractor** willfully violated Labor Law Section 220 will be forwarded to the **City's** five District Attorneys for review.

37.4.4 The **Contractor's** or **Subcontractor's** noncompliance with this Article 37.4 and Labor Law Section 220 may result in an unsatisfactory performance evaluation and the **Comptroller** may also find and determine that the **Contractor** or **Subcontractor** willfully violated the New York Labor **Law**.

37.4.4(a) An unsatisfactory performance evaluation for noncompliance with this Article 37.4 may result in a determination that the **Contractor** is a non-responsible bidder on subsequent procurements with the **City** and thus a rejection of a future award of a contract with the **City**, as well as any other sanctions provided for by **Law**.

37.4.4(b) Labor Law Section 220-b, as amended, provides that when two (2) final determinations have been rendered against a **Contractor** or **Subcontractor** within any consecutive six (6) year period determining that such **Contractor** or **Subcontractor** has willfully failed to pay the prevailing rate of wages or to provide supplements in accordance with the Labor Law and this Article 37.4, whether such failures were concurrent or consecutive and whether or not such final determinations concerning separate public works projects are rendered simultaneously, such **Contractor** or **Subcontractor** shall be ineligible to submit a bid on or be awarded any public works contract with the **City** for a period of five (5) years from the second final determination. If the final determination involves the falsification of payroll records or the kickback of wages or supplements, the **Contractor** or **Subcontractor** shall be ineligible to submit a bid on or be awarded any public works contract with the **City** for a period of five (5) years from the first final determination.

37.4.4(c) Labor Law Section 220, as amended, provides that the **Contractor** or **Subcontractor** found to have violated this Article 37.4 may be directed to make payment of wages or supplements including interest found to be due, and the **Contractor** or **Subcontractor** may be directed to make payment of a further sum as a civil penalty in an amount not exceeding twenty-five (25%) percent of the total amount found to be due.

37.5 The **Contractor** and its **Subcontractors** shall within ten (10) **Days** after mailing of a Notice of Award or written order, post in prominent and conspicuous places in each and every plant, factory, building, and structure where employees of the **Contractor** and its **Subcontractors** engaged in the

performance of this **Contract** are employed, notices furnished by the **City**, in relation to prevailing wages and supplements, minimum wages, and other stipulations contained in Sections 220 and 220-h of the Labor Law, and the **Contractor** and its **Subcontractors** shall continue to keep such notices posted in such prominent and conspicuous places until **Final Acceptance** of the supplies, materials, equipment, or **Work**, labor, or services required to be furnished or rendered under this **Contract**.

37.6 The **Contractor** shall strictly comply with all of the provisions of Articles 37.6.1 through 37.6.5, and provide for all workers, laborers or mechanics in its employ, the following:

37.6.1 Notices Posted At **Site**: Post, in a location designated by the **City**, schedules of prevailing wages and supplements for this **Project**, a copy of all re-determinations of such schedules for the **Project**, the Workers' Compensation **Law** Section 51 notice, all other notices required by **Law** to be posted at the **Site**, the **City** notice that this **Project** is a public works project on which each worker is entitled to receive the prevailing wages and supplements for the occupation at which he or she is working, and all other notices which the **City** directs the **Contractor** to post. The **Contractor** shall provide a surface for such notices which is satisfactory to the **City**. The **Contractor** shall maintain and keep current such notices in a legible manner and shall replace any notice or schedule which is damaged, defaced, illegible or removed for any reason. The **Contractor** shall post such notices before commencing any **Work** on the **Site** and shall maintain such notices until all **Work** on the **Site** is complete; and

37.6.2 Daily **Site** Sign-in Sheets: Maintain daily **Site** sign-in sheets, and require that **Subcontractors** maintain daily **Site** sign-in sheets for its employees, which include blank spaces for an employee's name to be both printed and signed, job title, date started and Social Security number, the time the employee began work and the time the employee left work, until **Final Acceptance** of the supplies, materials, equipment, or **Work**, labor, or services to be furnished or rendered under this **Contract** unless exception is granted by the **Comptroller** upon application by the **Agency**. In the alternative, subject to the approval of the **CCPO**, the **Contractor** and **Subcontractor** may maintain an electronic or biometric sign-in system, which provides the information required by this Article 37.6.2; and

37.6.3 Individual Employee Information Notices: Distribute a notice to each worker, laborer or mechanic employed under this **Contract**, in a form provided by the **Agency**, that this **Project** is a public works project on which each worker, laborer or mechanic is entitled to receive the prevailing rate of wages and supplements for the occupation at which he or she is working. If the total cost of the **Work** under this **Contract** is at least two hundred fifty thousand (\$250,000) dollars, such notice shall also include a statement that each worker, laborer or mechanic must be certified prior to performing any **Work** as having successfully completed a course in construction safety and health approved by the United States Department of Labor's Occupational Safety and Health Administration that is at least ten (10) hours in duration. Such notice shall be distributed to each worker before he or she starts performing any **Work** of this **Contract** and with the first paycheck after July first of each year. "Worker, laborer or mechanic" includes employees of the **Contractor** and all **Subcontractors** and all employees of suppliers entering the **Site**. At the time of distribution, the **Contractor** shall have each worker, laborer or mechanic sign a statement, in a form provided by the **Agency**, certifying that the worker has received the notice required by this Article 37.6.3, which signed statement shall be maintained with the payroll records required by this **Contract**; and

37.6.3(a) The **Contractor** and each **Subcontractor** shall notify each worker, laborer or mechanic employed under this **Contract** in writing of the prevailing rate of

wages for their particular job classification. Such notification shall be given to every worker, laborer, and mechanic on their first pay stub and with every pay stub thereafter; and

37.6.4 **Site Laminated Identification Badges:** The **Contractor** shall provide laminated identification badges which include a photograph of the worker's, laborer's or mechanic's face and indicate the worker's, laborer's or mechanic's name, trade, employer's name, and employment starting date (month/day/year). Further, the **Contractor** shall require as a condition of employment on the **Site**, that each and every worker, laborer or mechanic wear the laminated identification badge at all times and that it may be seen by any representative of the **City**. The **Commissioner** may grant a written waiver from the requirement that the laminated identification badge include a photograph if the **Contractor** demonstrates that the identity of an individual wearing a laminated identification badge can be easily verified by another method; and

37.6.5 **Language Other Than English Used On Site:** Provide the **ACCO** notice when three (3) or more employees (worker and/or laborer and/or mechanic) on the **Site**, at any time, speak a language other than English. The **ACCO** will then provide the **Contractor** the notices described in Article 37.6.1 in that language or languages as may be required. The **Contractor** is responsible for all distributions under this Article 37; and

37.6.6 **Provision of Records:** The **Contractor** and **Subcontractor(s)** shall produce within five (5) **Days** on the **Site** of the **Work** and upon a written order of the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, or the **Comptroller**, such records as are required to be kept by this Article 37.6; and

37.6.7 The **Contractor** and **Subcontractor(s)** shall pay employees by check or direct deposit. If this **Contract** is for an amount greater than one million (\$1,000,000) dollars, checks issued by the **Contractor** to covered employees shall be generated by a payroll service or automated payroll system (an in-house system may be used if approved by the **Agency**). For any subcontract for an amount greater than seven hundred fifty thousand (\$750,000) dollars, checks issued by a **Subcontractor** to covered employees shall be generated by a payroll service or automated payroll system (an in-house system may be used if approved by the **Agency**); and

37.6.8 The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of Articles 37.6.1 through 37.6.7 may result in the **Commissioner** declaring the **Contractor** in default and/or the withholding of payments otherwise due under the **Contract**.

37.7 The **Contractor** and its **Subcontractors** shall keep such employment and payroll records as are required by Section 220 of the Labor Law. The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of this Article 37.7 may result in the **Commissioner** declaring the **Contractor** in default and/or the withholding of payments otherwise due under the **Contract**.

37.8 At the time the **Contractor** makes application for each partial payment and for final payment, the **Contractor** shall submit to the **Commissioner** a written payroll certification, in the form provided by this **Contract**, of compliance with the prevailing wage, minimum wage, and other provisions and stipulations required by Labor Law Section 220 and of compliance with the training requirements of Labor Law Section 220-h set forth in Article 35.2. This certification of compliance shall be a condition precedent to payment and no payment shall be made to the **Contractor** unless and until each such certification shall have been submitted to and received by the **Commissioner**.

37.9 This **Contract** is executed by the **Contractor** with the express warranty and representation that the **Contractor** is not disqualified under the provisions of Section 220 of the Labor Law from the award of the **Contract**.

37.10 Any breach or violation of any of the foregoing shall be deemed a breach or violation of a material provision of this **Contract**, and grounds for cancellation thereof by the **City**.

ARTICLE 38. PAYROLL REPORTS

38.1 The **Contractor** and its **Subcontractor(s)** shall maintain on the **Site** during the performance of the **Work** the original payrolls or transcripts thereof which the **Contractor** and its **Subcontractor(s)** are required to maintain and shall submit such original payrolls or transcripts, subscribed and affirmed by it as true, within thirty (30) **Days** after issuance of its first payroll, and every thirty (30) **Days** thereafter, pursuant to Labor Law Section 220(3-a)(a)(iii). The **Contractor** and **Subcontractor(s)** shall submit such original payrolls or transcripts along with each and every payment requisition. If payment requisitions are not submitted at least once a month, the **Contractor** and its **Subcontractor(s)** shall submit original payrolls and transcripts both along with its payment requisitions and independently of its payment requisitions.

38.2 The **Contractor** shall maintain payrolls or transcripts thereof for six (6) years from the date of completion of the **Work** on this **Contract**. If such payrolls and transcripts are maintained outside of New York City after the completion of the **Work** and their production is required pursuant to this Article 38, the **Contractor** shall produce such records in New York City upon request by the **City**.

38.3 The **Contractor** and **Subcontractor(s)** shall comply with any written order, direction, or request made by the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, the **Agency Labor Law Investigator(s)**, or the **Comptroller**, to provide to the requesting party any of the following information and/or records within five (5) **Days** of such written order, direction, or request:

38.3.1 Such original payrolls or transcripts thereof subscribed and affirmed by it as true and the statements signed by each worker pursuant to this Chapter VIII; and/or

38.3.2 Attendance sheets for each **Day** on which any employee of the **Contractor** and/or any of the **Subcontractor(s)** performed **Work** on the **Site**, which attendance sheet shall be in a form acceptable to the **Agency** and shall provide information acceptable to the **Agency** to identify each such employee; and/or

38.3.3 Any other information to satisfy the **Engineer**, the **Commissioner**, the **ACCO**, the **Agency EAO**, the **Agency Labor Law Investigator(s)** or the **Comptroller**, that this Chapter VIII and the Labor Law, as to the hours of employment and prevailing rates of wages and/or supplemental benefits, are being observed.

38.4 The failure of the **Contractor** or **Subcontractor(s)** to comply with the provisions of Articles 38.1 and/or 38.2 may result in the **Commissioner** declaring the **Contractor** in default and/or the withholding of payments otherwise due under the **Contract**.

ARTICLE 39. DUST HAZARDS

39.1 Should a harmful dust hazard be created in performing the **Work** of this **Contract**, for the elimination of which appliances or methods have been approved by the Board of Standards and Appeals

of the City of New York, such appliances and methods shall be installed, maintained, and effectively operated during the continuance of such harmful dust hazard. Failure to comply with this provision after notice shall make this **Contract** voidable at the sole discretion of the **City**.

CHAPTER IX: PARTIAL AND FINAL PAYMENTS

ARTICLE 40. CONTRACT PRICE

40.1 The **City** shall pay, and the **Contractor** agrees to accept, in full consideration for the **Contractor's** performance of the **Work** subject to the terms and conditions hereof, the lump sum price or unit prices for which this **Contract** was awarded, plus the amount required to be paid for any **Extra Work** ordered by the **Commissioner** under Article 25, less credit for any **Work** omitted pursuant to Article 29.

ARTICLE 41. BID BREAKDOWN ON LUMP SUM

41.1 Within fifteen (15) **Days** after the commencement date specified in the **Notice to Proceed** or **Order to Work**, unless otherwise directed by the **Resident Engineer**, the **Contractor** shall submit to the **Resident Engineer** a breakdown of its bid price, or of lump sums bid for items of the **Contract**, showing the various operations to be performed under the **Contract**, as directed in the progress schedule required under Article 9, and the value of each of such operations, the total of such items to equal the lump sum price bid. Said breakdown must be approved in writing by the **Resident Engineer**.

41.2 No partial payment will be approved until the **Contractor** submits a bid breakdown that is acceptable to the **Resident Engineer**.

41.3 The **Contractor** shall also submit such other information relating to the bid breakdown as directed by the **Resident Engineer**. Thereafter, the breakdown may be used only for checking the **Contractor's** applications for partial payments hereunder, but shall not be binding upon the **City**, the **Commissioner**, or the **Engineer** for any purpose whatsoever.

ARTICLE 42. PARTIAL PAYMENTS

42.1 From time to time as the **Work** progresses satisfactorily, but not more often than once each calendar month (except where the **Commissioner** approves in writing the submission of invoices on a more frequent basis and for invoices relating to **Work** performed pursuant to a change order), the **Contractor** may submit to the **Engineer** a requisition for a partial payment in the prescribed form, which shall contain an estimate of the quantity and the fair value of the **Work** done during the payment period.

42.2 Partial payments may be made for materials, fixtures, and equipment in advance of their actual incorporation in the **Work**, as the **Commissioner** may approve, and upon the terms and conditions set forth in the General Conditions.

42.3 The **Contractor** shall also submit to the **Commissioner** in connection with every application for partial payment a verified statement in the form prescribed by the **Comptroller** setting forth the information required under Labor Law Section 220-a.

42.4 Within thirty (30) **Days** after receipt of a satisfactory payment application, and within sixty (60) **Days** after receipt of a satisfactory payment application in relation to **Work** performed pursuant to a change order, the **Engineer** will prepare and certify, and the **Commissioner** will approve, a voucher for a partial payment in the amount of such approved estimate, less any and all deductions authorized to be made by the **Commissioner** under the terms of this **Contract** or by **Law**.

ARTICLE 43. PROMPT PAYMENT

43.1 The Prompt Payment provisions of the **PPB** Rules in effect at the time of the bid will be applicable to payments made under this **Contract**. The provisions require the payment to the **Contractor** of interest on payments made after the required payment date, except as set forth in the **PPB** Rules.

43.2 The **Contractor** shall submit a proper invoice to receive payment, except where the **Contract** provides that the **Contractor** will be paid at predetermined intervals without having to submit an invoice for each scheduled payment.

43.3 Determination of interest due will be made in accordance with the **PPB** Rules.

43.4 If the **Contractor** is paid interest, the proportionate share(s) of that interest shall be forwarded by the **Contractor** to its **Subcontractor(s)**.

43.5 The **Contractor** shall pay each **Subcontractor** or **Materialman** not later than seven (7) **Days** after receipt of payment out of amounts paid to the **Contractor** by the **City** for **Work** performed by the **Subcontractor** or **Materialman** under this **Contract**.

43.5.1 If **Contractor** fails to make any payment to any **Subcontractor** or **Materialman** within seven (7) **Days** after receipt of payment by the **City** pursuant to this Article 43.5, then the **Contractor** shall pay interest on amounts due to such **Subcontractor** or **Materialman** at the rate of interest in effect on the date such payment is made by the **Contractor** computed in accordance with Section 756-b (1)(b) of the New York General Business Law. Accrual of interest shall commence on the **Day** immediately following the expiration of the seventh **Day** following receipt of payment by the **Contractor** from the **City** and shall end on the date on which payment is made.

43.6 The **Contractor** shall include in each of its subcontracts a provision requiring each **Subcontractor** to make payment to each of its **Subcontractors** or **Materialmen** for **Work** performed under this **Contract** in the same manner and within the same time period set forth above.

ARTICLE 44. SUBSTANTIAL COMPLETION PAYMENT

44.1 The **Contractor** shall submit with the **Substantial Completion** requisition:

44.1.1 A final verified statement of any pending Article 27 disputes in accordance with the **PPB** Rules and this **Contract** and any and all alleged claims against the **City**, in any way connected with or arising out of this **Contract** (including those as to which details may have been furnished pursuant to Articles 11, 27, 28, and 30) setting forth with respect to each such claim the total amount thereof, the various items of labor and materials included therein, and the alleged value of each item; and if the alleged claim be one for delay, the alleged cause of each such delay, the period or periods of time, giving the dates when the

Contractor claims the performance of the **Work** or a particular part thereof was delayed, and an itemized statement and breakdown of the amount claimed for each such delay.

44.1.1(a) With respect to each such claim, the **Commissioner**, the **Comptroller** and, in the event of litigation, the **City** Corporation Counsel shall have the same right to inspect, and to make extracts or copies of, the **Contractor's** books, vouchers, records, etc., as is referred to in Articles 11, 27, 28, and 30. Nothing contained in this Article 44.1.1(a) is intended to or shall relieve the **Contractor** from the obligation of complying strictly with Articles 11, 27, 28, and 30. The **Contractor** is warned that unless such claims are completely set forth as herein required, the **Contractor** upon acceptance of the **Substantial Completion** payment pursuant to this Article 44, will have waived any such claims.

44.1.2 A **Final Approved Punch List**.

44.1.3 Where required, a request for an extension of time to achieve **Substantial Completion** or final extension of time.

44.2 The **Commissioner** shall issue a voucher calling for payment of any part or all of the balance due for **Work** performed under the **Contract**, including monies retained under Article 21, less any and all deductions authorized to be made by the **Commissioner**, under this **Contract** or by **Law**, and less twice the amount the **Commissioner** considers necessary to ensure the completion of the balance of the **Work** by the **Contractor**. Such a payment shall be considered a partial and not a final payment. No **Substantial Completion** payment shall be made under this Article 44 where the **Contractor** failed to complete the **Work** within the time fixed for such completion in the Schedule A of the General Conditions, or within the time to which completion may have been extended, until an extension or extensions of time for the completion of **Work** have been acted upon pursuant to Article 13.

44.3 No further partial payments shall be made to the **Contractor** after **Substantial Completion**, except the **Substantial Completion** payment and payment pursuant to any **Contractor's** requisition that were properly filed with the **Commissioner** prior to the date of **Substantial Completion**; however, the **Commissioner** may grant a waiver for further partial payments after the date of **Substantial Completion** to permit payments for change order **Work** and/or release of retainage and deposits pursuant to Articles 21 and 24. Such waiver shall be in writing.

44.4 The **Contractor** acknowledges that nothing contained in this Article 44 is intended to or shall in any way diminish the force and effect of Article 13.

ARTICLE 45. FINAL PAYMENT

45.1 After completion and **Final Acceptance** of the **Work**, the **Contractor** shall submit all required certificates and documents, together with a requisition for the balance claimed to be due under the **Contract**, less the amount authorized to be retained for maintenance under Article 24. Such submission shall be within 90 days of the date of the **Commissioner's** written determination of **Final Acceptance**, or within such additional time as may be granted by the **Commissioner** in writing. If the **Contractor** fails to submit all required certificates and documents within the time allowed, no payment of the balance claimed shall be made to the **Contractor** and the **Contractor** shall be deemed to have forfeited its right to payment of any balance claimed. A verified statement similar to that required in connection with applications for partial payments shall also be submitted to the **Commissioner**.

45.2 Amended Verified Statement of Claims: The **Contractor** shall also submit with the final requisition any amendments to the final verified statement of any pending dispute resolution procedures in accordance with the **PPB** Rules and this **Contract** and any and all alleged claims against the **City**, in any way connected with or arising out of this **Contract** (including those as to which details may have been furnished pursuant to Articles 11, 27, 28, and 30) that have occurred subsequent to **Substantial Completion**, setting forth with respect to each such claim the total amount thereof, the various items of labor and materials included therein, and the alleged value of each such item; and if the alleged claim be one for delay, the alleged cause of each such delay, the period or periods of time, giving the dates when the **Contractor** claims the performance of the **Work** or a particular part thereof was delayed, and an itemized statement and breakdown of the amount claimed for each such delay. With reference to each such claim, the **Commissioner**, the **Comptroller** and, in the event of litigation, the **City** Corporation Counsel shall have the same right to inspect, and to make extracts or copies of, the **Contractor's** books, vouchers, records, etc., as is referred to in Articles 11, 27, 28, and 30. Nothing contained in this Article 45.2, is intended to or shall relieve the **Contractor** from the obligation of complying strictly with Articles 11, 27, 28, and 30. The **Contractor** is warned that unless such claims are completely set forth as herein required, the **Contractor**, upon acceptance of the Final Payment pursuant to Article 46, will have waived any such claims.

45.3 Preparation of Final Voucher: Upon determining the balance due hereunder other than on account of claims, the **Engineer** will prepare and certify, for the Commissioner's approval, a voucher for final payment in that amount less any and all deductions authorized to be made by the **Commissioner** under this **Contract** or by **Law**. In the case of a lump sum **Contract**, the **Commissioner** shall certify the voucher for final payment within thirty (30) **Days** from the date of completion and acceptance of the **Work**, provided all requests for extensions of time have been acted upon.

45.3.1 All prior certificates and vouchers upon which partial payments were made, being merely estimates made to enable the **Contractor** to prosecute the **Work** more advantageously, shall be subject to correction in the final voucher, and the certification of the **Engineer** thereon and the approval of the **Commissioner** thereof, shall be conditions precedent to the right of the **Contractor** to receive any money hereunder. Such final voucher shall be binding and conclusive upon the **Contractor**.

45.3.2 Payment pursuant to such final voucher, less any deductions authorized to be made by the **Commissioner** under this **Contract** or by **Law**, shall constitute the final payment, and shall be made by the **Comptroller** within thirty (30) **Days** after the filing of such voucher in his/her office.

45.4 The **Contractor** acknowledges that nothing contained in this Article 45 is intended to or shall in any way diminish the force and effect of Article 13.

ARTICLE 46. ACCEPTANCE OF FINAL PAYMENT

46.1 The acceptance by the **Contractor**, or by anyone claiming by or through it, of the final payment, whether such payment be made pursuant to any judgment of any court, or otherwise, shall constitute and operate as a release of the **City** from any and all claims of and liability to the **Contractor** for anything heretofore done or furnished for the **Contractor** relating to or arising out of this **Contract** and the **Work** done hereunder, and for any prior act, neglect or default on the part of the **City** or any of its officials, agents or employees, excepting only a claim against the **City** for the amounts deducted or retained in accordance with the terms and provisions of this **Contract** or by **Law**, and excepting any claims, not otherwise waived, or any pending dispute resolution procedures which are contained in the

verified statement filed with the **Contractor's** substantial and final requisitions pursuant to Articles 44 and 45.

46.2 The **Contractor** is warned that the execution by it of a release, in connection with the acceptance of the final payment, containing language purporting to reserve claims other than those herein specifically excepted from the operation of this Article 46, or those for amounts deducted by the **Commissioner** from the final requisition or from the final payment as certified by the **Engineer** and approved by the **Commissioner**, shall not be effective to reserve such claims, anything stated to the **Contractor** orally or in writing by any official, agent or employee of the **City** to the contrary notwithstanding.

46.3 Should the **Contractor** refuse to accept the final payment as tendered by the **Comptroller**, it shall constitute a waiver of any right to interest thereon.

46.4 The **Contractor**, however, shall not be barred by this Article 46 from commencing an action for breach of **Contract** to the extent permitted by **Law** and by the terms of the **Contract** for any claims that are contained in the verified statement filed with the **Contractor's** substantial and final requisitions pursuant to Articles 44 and 45 or that arose after submission of the final payment requisition, provided that a detailed and verified statement of claim is served upon the contracting **Agency** and **Comptroller** not later than forty (40) **Days** after the making of such final payment by electronic funds transfer (EFT) or the mailing of such final payment. The statement shall specify the items upon which the claim will be based and any such claim shall be limited to such items.

ARTICLE 47. APPROVAL BY PUBLIC DESIGN COMMISSION

47.1 All works of art, including paintings, mural decorations, stained glass, statues, bas-reliefs, and other sculptures, monuments, fountains, arches, and other structures of a permanent character intended for ornament or commemoration, and every design of the same to be used in the performance of this **Contract**, and the design of all bridges, approaches, buildings, gates, fences, lamps, or structures to be erected, pursuant to the terms of this **Contract**, shall be submitted to the Art Commission, d/b/a the Public Design Commission of the City of New York, and shall be approved by the Public Design Commission prior to the erection or placing in position of the same. The final payment shall not become due or payable under this **Contract** unless and until the Public Design Commission shall certify that the design for the **Work** herein contracted for has been approved by the said Public Design Commission, and that the same has been executed in substantial accordance with the design so approved, pursuant to the provisions of Chapter 37, Section 854 of the **City** Charter, as amended.

CHAPTER X: CONTRACTOR'S DEFAULT

ARTICLE 48. COMMISSIONER'S RIGHT TO DECLARE CONTRACTOR IN DEFAULT

48.1 In addition to those instances specifically referred to in other Articles herein, the **Commissioner** shall have the right to declare the **Contractor** in default of this **Contract** if:

48.1.1 The **Contractor** fails to commence **Work** when notified to do so by the **Commissioner**; or if

48.1.2 The **Contractor** shall abandon the **Work**; or if

48.1.3 The **Contractor** shall refuse to proceed with the **Work** when and as directed by the **Commissioner**; or if

48.1.4 The **Contractor** shall, without just cause, reduce its working force to a number which, if maintained, would be insufficient, in the opinion of the **Commissioner**, to complete the **Work** in accordance with the progress schedule; or if

48.1.5 The **Contractor** shall fail or refuse to increase sufficiently such working force when ordered to do so by the **Commissioner**; or if

48.1.6 The **Contractor** shall sublet, assign, transfer, convert or otherwise dispose of this **Contract** other than as herein specified; or sell or assign a majority interest in the **Contractor**; or if

48.1.7 The **Contractor** fails to secure and maintain all required insurance; or if

48.1.8 A receiver or receivers are appointed to take charge of the **Contractor's** property or affairs; or if

48.1.9 The **Commissioner** shall be of the opinion that the **Contractor** is or has been unnecessarily or unreasonably or willfully delaying the performance and completion of the **Work**, or the award of necessary subcontracts, or the placing of necessary material and equipment orders; or if

48.1.10 The **Commissioner** shall be of the opinion that the **Contractor** is or has been willfully or in bad faith violating any of the provisions of this **Contract**; or if

48.1.11 The **Commissioner** shall be of the opinion that the **Work** cannot be completed within the time herein provided therefor or within the time to which such completion may have been extended; provided, however, that the impossibility of timely completion is, in the **Commissioner's** opinion, attributable to conditions within the **Contractor's** control; or if

48.1.12 The **Work** is not completed within the time herein provided therefor or within the time to which the **Contractor** may be entitled to have such completion extended; or if

48.1.13 Any statement or representation of the **Contractor** in the **Contract** or in any document submitted by the **Contractor** with respect to the **Work**, the **Project**, or the **Contract** (or for purposes of securing the **Contract**) was untrue or incorrect when made; or if

48.1.14 The **Contractor** or any of its officers, directors, partners, five (5%) percent shareholders, principals, or other persons substantially involved in its activities, commits any of the acts or omissions specified as the grounds for debarment in the **PPB Rules**.

48.2 Before the **Commissioner** shall exercise his/her right to declare the **Contractor** in default, the **Commissioner** shall give the **Contractor** an opportunity to be heard, upon not less than two (2) **Days'** notice.

ARTICLE 49. EXERCISE OF THE RIGHT TO DECLARE DEFAULT

49.1 The right to declare the **Contractor** in default for any of the grounds specified or referred to in Article 48 shall be exercised by sending the **Contractor** a notice, signed by the **Commissioner**, setting forth the ground or grounds upon which such default is declared (hereinafter referred to as a "Notice of Default").

49.2 The **Commissioner's** determination that the **Contractor** is in default shall be conclusive, final, and binding on the parties and such a finding shall preclude the **Contractor** from commencing a plenary action for any damages relating to the **Contract**. If the **Contractor** protests the determination of the **Commissioner**, the **Contractor** may commence an action in a court of competent jurisdiction of the State of New York under Article 78 of the New York Civil Practice Law and Rules.

ARTICLE 50. QUITTING THE SITE

50.1 Upon receipt of such notice the **Contractor** shall immediately discontinue all further operations under this **Contract** and shall immediately quit the **Site**, leaving untouched all plant, materials, equipment, tools, and supplies then on the **Site**.

ARTICLE 51. COMPLETION OF THE WORK

51.1 The **Commissioner**, after declaring the **Contractor** in default, may then have the **Work** completed by such means and in such manner, by contract with or without public letting, or otherwise, as he/she may deem advisable, utilizing for such purpose such of the **Contractor's** plant, materials, equipment, tools, and supplies remaining on the **Site**, and also such **Subcontractors**, as he/she may deem advisable.

51.2 After such completion, the **Commissioner** shall make a certificate stating the expense incurred in such completion, which shall include the cost of re-letting and also the total amount of liquidated damages (at the rate provided for in the **Contract**) from the date when the **Work** should have been completed by the **Contractor** in accordance with the terms hereof to the date of actual completion of the **Work**. Such certificate shall be binding and conclusive upon the **Contractor**, its sureties, and any person claiming under the **Contractor**, as to the amount thereof.

51.3 The expense of such completion, including any and all related and incidental costs, as so certified by the **Commissioner**, and any liquidated damages assessed against the **Contractor**, shall be charged against and deducted out of monies which are earned by the **Contractor** prior to the date of default. Should the expense of such completion, as certified by the **Commissioner**, exceed the total sum which would have been payable under the **Contract** if it had been completed by the **Contractor**, any excess shall be paid by the **Contractor**.

ARTICLE 52. PARTIAL DEFAULT

52.1 In case the **Commissioner** shall declare the **Contractor** in default as to a part of the **Work** only, the **Contractor** shall discontinue such part, shall continue performing the remainder of the **Work** in strict conformity with the terms of this **Contract**, and shall in no way hinder or interfere with any **Other Contractor(s)** or persons whom the **Commissioner** may engage to complete the **Work** as to which the **Contractor** was declared in default.

52.2 The provisions of this Chapter relating to declaring the **Contractor** in default as to the entire **Work** shall be equally applicable to a declaration of partial default, except that the **Commissioner** shall be entitled to utilize for completion of the part of the **Work** as to which the **Contractor** was declared in default only such plant, materials, equipment, tools, and supplies as had been previously used by the **Contractor** on such part.

ARTICLE 53. PERFORMANCE OF UNCOMPLETED WORK

53.1 In completing the whole or any part of the **Work** under the provisions of this Chapter X, the **Commissioner** shall have the power to depart from or change or vary the terms and provisions of this **Contract**, provided, however, that such departure, change or variation is made for the purpose of reducing the time or expense of such completion. Such departure, change or variation, even to the extent of accepting a lesser or different performance, shall not affect the conclusiveness of the **Commissioner's** certificate of the cost of completion referred to in Article 51, nor shall it constitute a defense to an action to recover the amount by which such certificate exceeds the amount which would have been payable to the **Contractor** hereunder but for its default.

ARTICLE 54. OTHER REMEDIES

54.1 In addition to the right to declare the **Contractor** in default pursuant to this Chapter X, the **Commissioner** shall have the absolute right, in his/her sole discretion and without a hearing, to complete or cause to be completed in the same manner as described in Articles 51 and 53, any or all unsatisfactory or uncompleted punch list **Work** that remains after the completion date specified in the **Final Approved Punch List**. A written notice of the exercise of this right shall be sent to the **Contractor** who shall immediately quit the **Site** in accordance with the provisions of Article 50.

54.2 The expense of completion permitted under Article 54.1, including any and all related and incidental costs, as so certified by the **Commissioner**, shall be charged against and deducted out of monies which have been earned by the **Contractor** prior to the date of the exercise of the right set forth in Article 54.1; the balance of such monies, if any, subject to the other provisions of this **Contract**, to be paid to the **Contractor** without interest after such completion. Should the expense of such completion, as certified by the **Commissioner**, exceed the total sum which would have been payable under the **Contract** if it had been completed by the **Contractor**, any excess shall be paid by the **Contractor**.

54.3 The previous provisions of this Chapter X shall be in addition to any and all other remedies available under **Law** or in equity.

54.4 The exercise by the **City** of any remedy set forth herein shall not be deemed a waiver by the **City** of any other legal or equitable remedy contained in this **Contract** or provided under **Law**.

CHAPTER XI: MISCELLANEOUS PROVISIONS

ARTICLE 55. CONTRACTOR'S WARRANTIES

55.1 In consideration of, and to induce, the award of this **Contract** to the **Contractor**, the **Contractor** represents and warrants:

55.1.1 That it is financially solvent, sufficiently experienced and competent to perform the **Work**; and

55.1.2 That the facts stated in its bid and the information given by it pursuant to the Information for Bidders is true and correct in all respects; and

55.1.3 That it has read and complied with all requirements set forth in the **Contract**.

ARTICLE 56. CLAIMS AND ACTIONS THEREON

56.1 Any claim, that is not subject to dispute resolution under the **PPB** Rules or this **Contract**, against the **City** for damages for breach of **Contract** shall not be made or asserted in any action, unless the **Contractor** shall have strictly complied with all requirements relating to the giving of notice and of information with respect to such claims, as herein before provided.

56.2 Nor shall any action be instituted or maintained on any such claims unless such action is commenced within six (6) months after **Substantial Completion**; except that:

56.2.1 Any claims arising out of events occurring after **Substantial Completion** and before **Final Acceptance** of the **Work** shall be asserted within six (6) months of **Final Acceptance** of the **Work**;

56.2.2 If the **Commissioner** exercises his/her right to complete or cause to complete any or all unsatisfactory or uncompleted punch list **Work** that remains after the completion date specified in the **Final Approved Punch List** pursuant to Article 54, any such action shall be commenced within six (6) months from the date the **Commissioner** notifies the **Contractor** in writing that he/she has exercised such right. Any claims for monies deducted, retained or withheld under the provisions of this **Contract** shall be asserted within six (6) months after the date when such monies otherwise become due and payable hereunder; and

56.2.3 If the **Commissioner** exercises his/her right to terminate the **Contract** pursuant to Article 64, any such action shall be commenced within six (6) months of the date the **Commissioner** exercises said right.

ARTICLE 57. INFRINGEMENT

57.1 The **Contractor** shall be solely responsible for and shall defend, indemnify, and hold the **City** harmless from any and all claims (even if the allegations of the lawsuit are without merit) and judgments for damages and from costs and expenses to which the **City** may be subject to or which it may suffer or incur allegedly arising out of or in connection with any infringement by the **Contractor** of any copyright, trade secrets, trademark or patent rights or any other property or personal right of any third party by the **Contractor** and/or its **Subcontractors** in the performance or completion of the **Work**. Insofar as the facts or **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent permitted by **Law**.

ARTICLE 58. NO CLAIM AGAINST OFFICIALS, AGENTS OR EMPLOYEES

58.1 No claim whatsoever shall be made by the **Contractor** against any official, agent or employee of the **City** for, or on account of, anything done or omitted to be done in connection with this **Contract**.

ARTICLE 59. SERVICE OF NOTICES

59.1 The **Contractor** hereby designates the business address, fax number, and email address specified in its bid, as the place where all notices, directions or other communications to the **Contractor** may be delivered, or to which they may be mailed. Any notice, direction, or communication from either party to the other shall be in writing and shall be deemed to have been given when (i) delivered personally; (ii) sent by certified mail, return receipt requested; (iii) delivered by overnight or same day courier service in a properly addressed envelope with confirmation; or (iv) sent by fax or email and, unless receipt of the fax or e-mail is acknowledged by the recipient by fax or e-mail, deposited in a post office box regularly maintained by the United States Postal Service in a properly addressed, postage prepaid envelope.

59.2 **Contractor's** notice address, email address, or fax number may be changed at any time by an instrument in writing, executed and acknowledged by the **Contractor**, and delivered to the **Commissioner**.

59.3 Nothing herein contained shall, however, be deemed to preclude or render inoperative the service of any notice, direction or other communication upon the **Contractor** personally, or, if the **Contractor** is a corporation, upon any officer thereof.

ARTICLE 60. UNLAWFUL PROVISIONS DEEMED STRICKEN FROM CONTRACT

60.1 If this **Contract** contains any unlawful provision not an essential part of the **Contract** and which shall not appear to have been a controlling or material inducement to the making thereof, the same shall be deemed of no effect and shall, upon notice by either party, be deemed stricken from the **Contract** without affecting the binding force of the remainder.

ARTICLE 61. ALL LEGAL PROVISIONS DEEMED INCLUDED

61.1 It is the intent and understanding of the parties to this **Contract** that each and every provision of **Law** required to be inserted in this **Contract** shall be and is inserted herein. Furthermore, it is hereby stipulated that every such provision is to be deemed to be inserted herein, and if, through mistake or otherwise, any such provision is not inserted, or is not inserted in correct form, then this **Contract** shall forthwith upon the application of either party be amended by such insertion so as to comply strictly with the **Law** and without prejudice to the rights of either party hereunder.

ARTICLE 62. TAX EXEMPTION

62.1 The **City** is exempt from payment of Federal, State, and local taxes, including sales and compensating use taxes of the State of New York and its cities and counties on all tangible personal property sold to the **City** pursuant to the provisions of this **Contract**. These taxes are not to be included in bids. However, this exemption does not apply to tools, machinery, equipment or other property leased by or to the **Contractor**, **Subcontractor** or **Materialman** or to tangible personal property which, even

though it is consumed, is not incorporated into the completed **Work** (consumable supplies) and tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work**. The **Contractor** and its **Subcontractors** and **Materialmen** shall be responsible for and pay any and all applicable taxes, including sales and compensating use taxes, on such leased tools, machinery, equipment or other property and upon all such consumable supplies and tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work**.

62.2 The **Contractor** agrees to sell and the **City** agrees to purchase all tangible personal property, other than consumable supplies and other tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work**, that is required, necessary or proper for or incidental to the construction of the **Project** covered by this **Contract**. The sum paid under this **Contract** for such tangible personal property shall be in full payment and consideration for the sale of such tangible personal property.

62.2.1 The **Contractor** agrees to construct the **Project** and to perform all **Work**, labor and services rendered, necessary, proper or incidental thereto for the sum shown in the bid for the performance of such **Work**, labor, and services, and the sum so paid pursuant to this **Contract** for such **Work**, labor, and services, shall be in full consideration for the performance by the **Contractor** of all its duties and obligations under this **Contract** in connection with said **Work**, labor, and services.

62.3 20 NYCRR Section 541.3(d) provides that a **Contractor's** purchases of tangible personal property that is either incorporated into real property owned by a governmental entity or purchased for and sold to a governmental entity are exempt from sales and use tax. The **City** shall not pay sales tax for any such tangible personal property that it purchases from the **Contractor** pursuant to the **Contract**. With respect to such tangible personal property, the **Contractor**, at the request of the **City**, shall furnish to the **City** such bills of sale and other instruments as may be required by the **City**, properly executed, acknowledged and delivered assuring to the **City** title to such tangible personal property, free of liens and/or encumbrances, and the **Contractor** shall mark or otherwise identify all such tangible personal property as the property of the **City**.

62.4 Title to all tangible personal property to be sold by the **Contractor** to the **City** pursuant to the provisions of the **Contract** shall immediately vest in and become the sole property of the **City** upon delivery of such tangible personal property to the **Site**. Notwithstanding such transfer of title, the **Contractor** shall have the full and continuing responsibility to install such tangible personal property in accordance with the provisions of this **Contract**, protect it, maintain it in a proper condition and forthwith repair, replace and make good any damage thereto, theft or disappearance thereof, and furnish additional tangible personal property in place of any that may be lost, stolen or rendered unusable, without cost to the **City**, until such time as the **Work** covered by the **Contract** is fully accepted by the **City**. Such transfer of title shall in no way affect any of the **Contractor's** obligations hereunder. In the event that, after title has passed to the **City**, any of the tangible personal property is rejected as being defective or otherwise unsatisfactory, title to all such tangible personal property shall be deemed to have been transferred back to the **Contractor**.

62.5 The purchase by **Subcontractors** or **Materialmen** of tangible personal property to be sold hereunder shall be a purchase or procurement for resale to the **Contractor** (either directly or through other **Subcontractors**) and therefore not subject to the aforesaid sales and compensating use taxes, provided that the subcontracts and purchase agreements provide for the resale of such tangible personal property and that such subcontracts and purchase agreements are in a form similar to this **Contract** with respect to the separation of the sale of consumable supplies and tangible personal property that the

Contractor is required to remove from the **Site** during or upon completion of the **Work** from the **Work** and labor, services, and any other matters to be provided, and provided further that the subcontracts and purchase agreements provide separate prices for tangible personal property and all other services and matters. Such separation shall actually be followed in practice, including the separation of payments for tangible personal property from the payments for other **Work** and labor and other things to be provided.

62.6 The **Contractor** and its **Subcontractors** and **Materialmen** shall furnish a **Contractor** Exempt Purchase Certificate to all persons, firms or corporations from which they purchase tangible personal property for the performance of the **Work** covered by this **Contract**.

62.7 In the event any of the provisions of this Article 62 shall be deemed to be in conflict with any other provisions of this **Contract** or create any ambiguity, then the provisions of this Article 62 shall control.

ARTICLE 63. INVESTIGATION(S) CLAUSE

63.1 The parties to this **Contract** agree to cooperate fully and faithfully with any investigation, audit or inquiry conducted by a United States, a State of New York (State) or a **City** governmental agency or authority that is empowered directly or by designation to compel the attendance of witnesses and to examine witnesses under oath, or conducted by the Inspector General of a governmental agency that is a party in interest to the transaction, submitted bid, submitted proposal, contract, lease, permit or license that is the subject of the investigation, audit or inquiry.

63.2 If any person who has been advised that his/her statement, and any information from such statement, will not be used against him/her in any subsequent criminal proceeding refuses to testify before a grand jury or other governmental agency or authority empowered directly or by designation to compel the attendance of witnesses and to examine witnesses under oath concerning the award of or performance under any transaction, agreement, lease, permit, contract, or license entered into with the **City**, the State, or any political subdivision or public authority thereof, or the Port Authority of New York and New Jersey, or any local development corporation within the **City**, or any public benefit corporation organized under the **Laws** of the State of New York, or;

63.3 If any person refuses to testify for a reason other than the assertion of his/her privilege against self incrimination in an investigation, audit or inquiry conducted by a **City** or State governmental agency or authority empowered directly or by designation to compel the attendance of witnesses and to take testimony under oath, or by the Inspector General of the governmental agency that is a party in interest in, and is seeking testimony concerning the award of, or performance under any transaction, agreement, lease, permit, contract, or license entered into with the **City**, the State, or any political subdivision thereof or any local development corporation within the **City**, then;

63.4 The **Commissioner** whose **Agency** is a party in interest to the transaction, submitted bid, submitted proposal, contract, lease, permit, or license shall convene a hearing, upon not less than five (5) **Days'** written notice to the parties involved to determine if any penalties should attach for the failure of a person to testify.

63.5 If any non-governmental party to the hearing requests an adjournment, the **Commissioner** who convened the hearing may, upon granting the adjournment, suspend any contract, lease, permit, or license, pending the final determination pursuant to Article 63.7 without the **City** incurring any penalty or damages for delay or otherwise.

63.6 The penalties which may attach after a final determination by the **Commissioner** may include but shall not exceed:

63.6.1 The disqualification for a period not to exceed five (5) years from the date of an adverse determination for any person, or any entity of which such person was a member at the time the testimony was sought, from submitting bids for, or transacting business with, or entering into or obtaining any contract, lease, permit or license with or from the **City**; and/or

63.6.2 The cancellation or termination of any and all such existing **City** contracts, leases, permits or licenses that the refusal to testify concerns and that have not been assigned as permitted under this **Contract**, nor the proceeds of which pledged, to an unaffiliated and unrelated institutional lender for fair value prior to the issuance of the notice scheduling the hearing, without the **City** incurring any penalty or damages on account of such cancellation or termination; monies lawfully due for goods delivered, work done, rentals, or fees accrued prior to the cancellation or termination shall be paid by the **City**.

63.7 The **Commissioner** shall consider and address in reaching his/her determination and in assessing an appropriate penalty the factors in Articles 63.7.1 and 63.7.2. The **Commissioner** may also consider, if relevant and appropriate, the criteria established in Articles 63.7.3 and 63.7.4, in addition to any other information which may be relevant and appropriate:

63.7.1 The party's good faith endeavors or lack thereof to cooperate fully and faithfully with any governmental investigation or audit, including but not limited to the discipline, discharge, or disassociation of any person failing to testify, the production of accurate and complete books and records, and the forthcoming testimony of all other members, agents, assignees or fiduciaries whose testimony is sought.

63.7.2 The relationship of the person who refused to testify to any entity that is a party to the hearing, including but not limited to, whether the person whose testimony is sought has an ownership interest in the entity and/or the degree of authority and responsibility the person has within the entity.

63.7.3 The nexus of the testimony sought to the subject entity and its contracts, leases, permits or licenses with the **City**.

63.7.4 The effect a penalty may have on an unaffiliated and unrelated party or entity that has a significant interest in an entity subject to penalties under Article 63.6, provided that the party or entity has given actual notice to the **Commissioner** upon the acquisition of the interest, or at the hearing called for in Article 63.4, gives notice and proves that such interest was previously acquired. Under either circumstance the party or entity shall present evidence at the hearing demonstrating the potential adverse impact a penalty will have on such person or entity.

63.8 Definitions:

63.8.1 The term "license" or "permit" as used in this Article 63 shall be defined as a license, permit, franchise or concession not granted as a matter of right.

63.8.2 The term "person" as used in this Article 63 shall be defined as any natural person doing business alone or associated with another person or entity as a partner, director, officer, principal or employee.

63.8.3 The term “entity” as used in this Article 63 shall be defined as any firm, partnership, corporation, association, joint venture, or person that receives monies, benefits, licenses, leases, or permits from or through the **City** or otherwise transacts business with the **City**.

63.8.4 The term “member” as used in this Article 63 shall be defined as any person associated with another person or entity as a partner, director, officer, principal or employee.

63.9 In addition to and notwithstanding any other provision of this **Contract**, the **Commissioner** may in his/her sole discretion terminate this **Contract** upon not less than three (3) **Days**’ written notice in the event the **Contractor** fails to promptly report in writing to the **Commissioner** of the Department of Investigations (“DOI”) of the **City** any solicitation of money, goods, requests for future employment or other benefit or thing of value, by or on behalf of any employee of the **City** or other person, firm, corporation or entity for any purpose which may be related to the procurement or obtaining of this **Contract** by the **Contractor**, or affecting the performance of this **Contract**.

ARTICLE 64. TERMINATION BY THE CITY

64.1 In addition to termination pursuant to any other article of this **Contract**, the **Commissioner** may, at any time, terminate this **Contract** by written notice to the **Contractor**. In the event of termination, the **Contractor** shall, upon receipt of such notice, unless otherwise directed by the **Commissioner**:

64.1.1 Stop **Work** on the date specified in the notice;

64.1.2 Take such action as may be necessary for the protection and preservation of the **City**’s materials and property;

64.1.3 Cancel all cancelable orders for material and equipment;

64.1.4 Assign to the **City** and deliver to the **Site** or another location designated by the **Commissioner**, any non-cancelable orders for material and equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract** and not incorporated in the **Work**;

64.1.5 Take no action which will increase the amounts payable by the **City** under this **Contract**.

64.2 In the event of termination by the **City** pursuant to this Article 64, payment to the **Contractor** shall be in accordance with Articles 64.2.1, 64.2.2 or 64.2.3, to the extent that each respective article applies.

64.2.1 Lump Sum Contracts or Items: On all lump sum **Contracts**, or on lump sum items in a **Contract**, the **City** will pay the **Contractor** the sum of the amounts described in Articles 64.2.1(a) and 64.2.1(b), less all payments previously made pursuant to this **Contract**. On lump sum **Contracts** only, the **City** will also pay the **Contractor** an additional sum as provided in Article 64.2.1(c).

64.2.1(a) For **Work** completed prior to the notice of termination, the **Contractor** shall be paid a pro rata portion of the lump sum bid amount, plus approved change orders, based upon the percent completion of the **Work**, as determined by the

Commissioner. For the purpose of determining the pro rata portion of the lump sum bid amount to which the **Contractor** is entitled, the bid breakdown submitted in accordance with Article 41 shall be considered, but shall not be dispositive. The **Commissioner's** determination hereunder shall be final, binding, and conclusive.

64.2.1(b) For non-cancelable material and equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract**, but not yet incorporated in the **Work**, the **Contractor** shall be paid the lesser of the following, less salvage value:

64.2.1(b)(i) The Direct Cost, as defined in Article 64.2.4; or

64.2.1(b)(ii) The fair and reasonable value, if less than Direct Cost, of such material and equipment, plus necessary and reasonable delivery costs.

64.2.1(b)(iii) In addition, the **Contractor** shall be paid five (5%) percent of the amount described in Article 64.2.1(b)(i) or Article 64.2.1(b)(ii), whichever applies.

64.2.1(c) Except as otherwise provided in Article 64.2.1(d), on all lump sum **Contracts**, the **Contractor** shall be paid the percentage indicated below applied to the difference between the total lump sum bid amount and the total of all payments made prior to the notice of termination plus all payments allowed pursuant to Articles 64.2.1(a) and 64.2.1(b):

64.2.1(c)(i) Five (5%) percent of the first five million (\$5,000,000) dollars; and

64.2.1(c)(ii) Three (3%) percent of any amount between five million (\$5,000,000) dollars and fifteen million (\$15,000,000) dollars; plus

64.2.1(c)(iii) One (1%) percent of any amount over fifteen million (\$15,000,000) dollars.

64.2.1(d) In the event the **City** terminates a lump sum **Contract** pursuant to this Article 64 within ninety (90) **Days** after registration of the **Contract** with the **Comptroller**, the **Contractor** shall be paid one (1%) percent of the difference between the lump sum bid amount and the total of all payments made pursuant to this Article 64.2.

64.2.2 Unit Price Contracts or Items: On all unit price **Contracts**, or on unit price items in a **Contract**, the **City** will pay the **Contractor** the sum of the amounts described in Articles 64.2.2(a) and 64.2.2(b), less all payments previously made pursuant to this **Contract**:

64.2.2(a) For all completed units, the unit price stated in the **Contract**, and

64.2.2(b) For units that have been ordered but are only partially completed, the **Contractor** will be paid:

64.2.2(b)(i) A pro rata portion of the unit price stated in the **Contract** based upon the percent completion of the unit and

64.2.2(b)(ii) For non-cancelable material and equipment, payment will be made pursuant to Article 64.2.1(b).

64.2.3 Time and Materials Contracts or Items Based on Time and Material Records: On all **Contracts** or items in a **Contract** where payment for the **Work** is based on time and material records, the **Contractor** shall be paid in accordance with Article 26, less all payments previously made pursuant to this **Contract**.

64.2.4 Direct Costs: Direct Costs as used in this Article 64.2 shall mean:

64.2.4(a) The actual purchase price of material and equipment, plus necessary and reasonable delivery costs,

64.2.4(b) The actual cost of labor involved in construction and installation at the **Site**, and

64.2.4(c) The actual cost of necessary bonds and insurance purchased pursuant to requirements of this **Contract** less any amounts that have been or should be refunded by the **Contractor's** sureties or insurance carriers.

64.2.4(d) Direct Costs shall not include overhead.

64.3 In no event shall any payments under this Article 64 exceed the **Contract** price for such items.

64.4 All payments pursuant to Article 64 shall be in the nature of liquidated damages and shall be accepted by the **Contractor** in full satisfaction of all claims against the **City**.

64.5 The **City** may deduct or set off against any sums due and payable pursuant to this Article 64, any deductions authorized by this **Contract** or by **Law** (including but not limited to liquidated damages) and any claims it may have against the **Contractor**. The **City's** exercise of the right to terminate the **Contract** pursuant to this Article 64 shall not impair or otherwise effect the **City's** right to assert any claims it may have against the **Contractor** in a plenary action.

64.6 Where the **Work** covered by the **Contract** has been substantially completed, as determined in writing by the **Commissioner**, termination of the **Work** shall be handled as an omission of **Work** pursuant to Articles 29 and 33, in which case a change order will be issued to reflect an appropriate reduction in the **Contract** sum, or if the amount is determined after final payment, such amount shall be paid by the **Contractor**.

ARTICLE 65. CHOICE OF LAW, CONSENT TO JURISDICTION AND VENUE

65.1 This **Contract** shall be deemed to be executed in the **City** regardless of the domicile of the **Contractor**, and shall be governed by and construed in accordance with the **Laws** of the State of New York and the **Laws** of the United States, where applicable.

65.2 The parties agree that any and all claims asserted against the **City** arising under this **Contract** or related thereto shall be heard and determined in the courts of the State of New York ("New York State Courts") located in the **City** and County of New York. To effect this **Contract** and intent, the **Contractor** agrees:

65.2.1 If the **City** initiates any action against the **Contractor** in Federal court or in a New York State Court, service of process may be made on the **Contractor** either in person, wherever such **Contractor** may be found, or by registered mail addressed to the **Contractor** at its address as set forth in this **Contract**, or to such other address as the **Contractor** may provide to the **City** in writing; and

65.2.2 With respect to any action between the **City** and the **Contractor** in a New York State Court, the **Contractor** hereby expressly waives and relinquishes any rights it might otherwise have:

65.2.2(a) To move to dismiss on grounds of forum non conveniens;

65.2.2(b) To remove to Federal Court; and

65.2.2(c) To move for a change of venue to a New York State Court outside New York County.

65.2.3 With respect to any action brought by the **City** against the **Contractor** in a Federal Court located in the **City**, the **Contractor** expressly waives and relinquishes any right it might otherwise have to move to transfer the action to a Federal Court outside the **City**.

65.2.4 If the **Contractor** commences any action against the **City** in a court located other than in the **City** and County of New York, upon request of the **City**, the **Contractor** shall either consent to a transfer of the action to a New York State Court of competent jurisdiction located in the **City** and County of New York or, if the Court where the action is initially brought will not or cannot transfer the action, the **Contractor** shall consent to dismiss such action without prejudice and may thereafter reinstate the action in a New York State Court of competent jurisdiction in New York County.

65.3 If any provision(s) of this Article 65 is held unenforceable for any reason, each and all other provision(s) shall nevertheless remain in full force and effect.

ARTICLE 66. PARTICIPATION IN AN INTERNATIONAL BOYCOTT

66.1 The **Contractor** agrees that neither the **Contractor** nor any substantially owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the Federal Export Administration Act of 1979, as amended, or the regulations of the United States Department of Commerce (Commerce Department) promulgated thereunder.

66.2 Upon the final determination by the Commerce Department or any other agency of the United States as to, or conviction of the **Contractor** or a substantially-owned affiliated company thereof for participation in an international boycott in violation of the provisions of the Export Administration Act of 1979, as amended, or the regulations promulgated thereunder, the **Comptroller** may, at his/her option, render forfeit and void this **Contract**.

66.3 The **Contractor** shall comply in all respects, with the provisions of Section 6-114 of the Administrative Code and the rules and regulations issued by the **Comptroller** thereunder.

ARTICLE 67. LOCALLY BASED ENTERPRISE PROGRAM

67.1 This **Contract** is subject to the requirements of Section 6-108.1 of the Administrative Code and regulations promulgated thereunder. No construction contract shall be awarded unless and until these requirements have been complied with in their entirety; however, compliance with this Article 67 is not required if the Agency sets Subcontractor Participation Goals for Minority- and Women-Owned Business Enterprises (M/WBEs).

67.2 Unless specifically waived by the **Commissioner** with the approval of the Division of Economic and Financial Opportunity of the **City** Department of Business Services, if any portion of the **Contract** is subcontracted, not less than ten (10%) percent of the total dollar amount of the **Contract** shall be awarded to locally based enterprises (LBEs); except that where less than ten (10%) percent of the total dollar amount of the **Contract** is subcontracted, such lesser percentage shall be so awarded.

67.3 The **Contractor** shall not require performance and payment bonds from LBE **Subcontractors**.

67.4 If the **Contractor** has indicated prior to award that no **Work** will be subcontracted, no **Work** shall be subcontracted without the prior approval of the **Commissioner**, which shall be granted only if the **Contractor** makes a good faith effort beginning at least six (6) weeks before the **Work** is to be performed to obtain LBE **Subcontractors** to perform the **Work**.

67.5 If the **Contractor** has not identified sufficient LBE **Subcontractors** prior to award, it shall sign a letter of compliance stating that it complies with Section 6-108.1 of the Administrative Code, recognizes that achieving the LBE requirement is a condition of its **Contract**, and shall submit documentation demonstrating its good faith efforts to obtain LBEs. After award, the **Contractor** shall begin to solicit LBE's to perform subcontracted **Work** at least six (6) weeks before the date such **Work** is to be performed and shall demonstrate that a good faith effort has been made to obtain LBEs on each subcontract until it meets the required percentage.

67.6 Failure of the **Contractor** to comply with the requirements of Section 6-108.1 of the Administrative Code and the regulations promulgated thereunder shall constitute a material breach of this **Contract**. Remedy for such breach may include the imposition of any or all of the following sanctions:

67.6.1 Reducing the **Contractor's** compensation by an amount equal to the dollar value of the percentage of the LBE subcontracting requirement not complied with;

67.6.2 Declaring the **Contractor** in default;

67.6.3 If the **Contractor** is an LBE, de-certifying and declaring the **Contractor** ineligible to participate in the LBE program for a period of up to three (3) years.

ARTICLE 68. ANTITRUST

68.1 The **Contractor** hereby assigns, sells, and transfers to the **City** all right, title, and interest in and to any claims and causes of action arising under the antitrust **Laws** of New York State or of the United States relating to the particular goods or services purchased or procured by the **City** under this **Contract**.

ARTICLE 69. MacBRIDE PRINCIPLES PROVISIONS

69.1 Notice To All Prospective Contractors:

69.1.1 Local Law No. 34 of 1991 became effective on September 10, 1991 and added Section 6-115.1 of the Administrative Code. The local **Law** provides for certain restrictions on **City Contracts** to express the opposition of the people of the **City** to employment discrimination practices in Northern Ireland to promote freedom of work-place opportunity.

69.1.2 Pursuant to Section 6-115.1, prospective **Contractors** for **Contracts** to provide goods or services involving an expenditure of an amount greater than ten thousand (\$10,000.) dollars, or for construction involving an amount greater than fifteen thousand (\$15,000.) dollars, are asked to sign a rider in which they covenant and represent, as a material condition of their **Contract**, that any business operations in Northern Ireland conducted by the **Contractor** and any individual or legal entity in which the **Contractor** holds a ten (10%) percent or greater ownership interest in the **Contractor** will be conducted in accordance with the MacBride Principles of nondiscrimination in employment.

69.1.3 Prospective **Contractors** are not required to agree to these conditions. However, in the case of **Contracts** let by competitive sealed bidding, whenever the lowest responsible bidder has not agreed to stipulate to the conditions set forth in this notice and another bidder who has agreed to stipulate to such conditions has submitted a bid within five (5%) percent of the lowest responsible bid for a **Contract** to supply goods, services or contraction of comparable quality, the **Agency** shall refer such bids to the Mayor, the Speaker or other officials, as appropriate, who may determine, in accordance with applicable **Law**, that it is in the best interest of the **City** that the **Contract** be awarded to other than the lowest responsible pursuant to Section 313(b)(2) of the **City** Charter.

69.1.4 In the case of **Contracts** let by other than competitive sealed bidding, if a prospective **Contractor** does not agree to these conditions, no **Agency**, elected official or the **City** Council shall award the **Contract** to that bidder unless the **Agency** seeking to use the goods, services or construction certifies in writing that the **Contract** is necessary for the **Agency** to perform its functions and there is no other responsible **Contractor** who will supply goods, services or construction of comparable quality at a comparable price.

69.2 In accordance with Section 6-115.1 of the Administrative Code, the **Contractor** stipulates that such **Contractor** and any individual or legal entity in which the **Contractor** holds a ten (10%) percent or greater ownership interest in the **Contractor** either:

69.2.1 Have no business operations in Northern Ireland, or

69.2.2 Shall take lawful steps in good faith to conduct any business operations they have in Northern Ireland in accordance with the MacBride Principles, and shall permit independent monitoring of their compliance with such principles.

69.3 For purposes of this Article, the following terms shall have the following meanings:

69.3.1 "MacBride Principles" shall mean those principles relating to nondiscrimination in employment and freedom of work-place opportunity which require employers doing business in Northern Ireland to:

69.3.1(a) increase the representation of individuals from under-represented religious groups in the workforce, including managerial, supervisory, administrative, clerical and technical jobs;

69.3.1(b) take steps to promote adequate security for the protection of employees from under-represented religious groups both at the work-place and while traveling to and from **Work**;

69.3.1(c) ban provocative religious or political emblems from the workplace;

69.3.1(d) publicly advertise all job openings and make special recruitment efforts to attract applicants from under-represented religious groups;

69.3.1(e) establish layoff, recall, and termination procedures which do not in practice favor a particular religious group;

69.3.1(f) abolish all job reservations, apprenticeship restrictions and different employment criteria which discriminate on the basis of religion;

69.3.1(g) develop training programs that will prepare substantial numbers of current employees from under-represented religious groups for skilled jobs, including the expansion of existing programs and the creation of new programs to train, upgrade, and improve the skills of workers from under-represented religious groups;

69.3.1(h) establish procedures to assess, identify, and actively recruit employees from under-represented religious groups with potential for further advancement; and

69.3.1(i) appoint a senior management staff member to oversee affirmative action efforts and develop a timetable to ensure their full implementation.

69.4 The **Contractor** agrees that the covenants and representations in Article 69.2 are material conditions to this **Contract**. In the event the **Agency** receives information that the **Contractor** who made the stipulation required by this Article 69 is in violation thereof, the **Agency** shall review such information and give the **Contractor** an opportunity to respond. If the **Agency** finds that a violation has occurred, the **Agency** shall have the right to declare the **Contractor** in default and/or terminate this **Contract** for cause and procure supplies, services or **Work** from another source in the manner the **Agency** deems proper. In the event of such termination, the **Contractor** shall pay to the **Agency**, or the **Agency** in its sole discretion may withhold from any amounts otherwise payable to the **Contractor**, the difference between the **Contract** price for the uncompleted portion of this **Contract** and the cost to the **Agency** of completing performance of this **Contract** either itself or by engaging another **Contractor** or **Contractors**. In the case of a requirement **Contract**, the **Contractor** shall be liable for such difference in price for the entire amount of supplies required by the **Agency** for the uncompleted term of **Contractor's Contract**. In the case of a construction **Contract**, the **Agency** shall also have the right to hold the **Contractor** in partial or total default in accordance with the default provisions of this **Contract**, and/or may seek debarment or suspension of the **Contractor**. The rights and remedies of the **Agency** hereunder shall be in addition to, and not in lieu of, any rights and remedies the **Agency** has pursuant to this **Contract** or by operation of **Law**.

ARTICLE 70. ELECTRONIC FILING/NYC DEVELOPMENT HUB

70.1 The **Contractor** shall electronically file all alteration type-2 and alteration type-3 applications via the New York City Development Hub Web site, except applications for the following types of minor alterations: enlargements, curb cuts, legalizations, fire alarms, builders pavement plans, and jobs filed on Landmark Preservation Commission calendared properties. All such filings must be professionally certified. Information about electronic filing via the New York City Development Hub is available on the **City** Department of Buildings Web site at www.nyc.gov/buildings.

ARTICLE 71. PROHIBITION OF TROPICAL HARDWOODS

71.1 Tropical hardwoods, as defined in Section 165 of the New York State Finance Law (Finance Law), shall not be utilized in the performance of this **Contract** except as expressly permitted by Section 165 of the Finance Law.

ARTICLE 72. CONFLICTS OF INTEREST

72.1 Section 2604 of the **City** Charter and other related provisions of the **City** Charter, the Administrative Code, and the Penal Law are applicable under the terms of this **Contract** in relation to conflicts of interest and shall be extended to **Subcontractors** authorized to perform **Work**, labor and services pursuant to this **Contract** and further, it shall be the duty and responsibility of the **Contractor** to so inform its respective **Subcontractors**. Notice is hereby given that, under certain circumstances, penalties may be invoked against the donor as well as the recipient of any form of valuable gift.

ARTICLE 73. MERGER CLAUSE

73.1 The written **Contract** herein, contains all the terms and conditions agreed upon by the parties hereto, and no other agreement, oral or otherwise, regarding the subject matter of this **Contract** shall be deemed to exist or to bind any of the parties hereto, or to vary any of the terms contained herein.

ARTICLE 74. STATEMENT OF WORK

74.1 The **Contractor** shall furnish all labor and materials and perform all **Work** in strict accordance with the **Specifications** and **Addenda** thereto, numbered as shown in Schedule A.

ARTICLE 75. COMPENSATION TO BE PAID TO CONTRACTOR

75.1 The **City** will pay and the **Contractor** will accept in full consideration for the performance of the **Contract**, subject to additions and deductions as provided herein, the total sum shown in Schedule A, this said sum being the amount at which the **Contract** was awarded to the **Contractor** at a public letting thereof, based upon the **Contractor's** bid for the **Contract**.

ARTICLE 76. ELECTRONIC FUNDS TRANSFER

76.1 In accordance with Section 6-107.1 of the Administrative Code, the **Contractor** agrees to accept payments under this **Contract** from the **City** by electronic funds transfer (EFT). An EFT is any

transfer of funds, other than a transaction originated by check, draft or similar paper instrument, which is initiated through an electronic terminal, telephonic instrument or computer or magnetic tape so as to order, instruct or authorize a financial institution to debit or credit an account. Prior to the first payment made under this **Contract**, the **Contractor** shall designate one financial institution or other authorized payment agent and shall complete the attached "EFT Vendor Payment Enrollment Form" in order to provide the Commissioner of the **City** Department of Finance with information necessary for the **Contractor** to receive electronic funds transfer payments through a designated financial institution or authorized payment agent. The crediting of the amount of a payment to the appropriate account on the books of a financial institution or other authorized payment agent designated by the **Contractor** shall constitute full satisfaction by the **City** for the amount of the payment under this **Contract**. The account information supplied by the **Contractor** to facilitate the electronic funds transfer shall remain confidential to the fullest extent provided by **Law**.

76.2 The **Commissioner** may waive the application of the requirements of this Article 76 to payments on contracts entered into pursuant to Section 315 of the **City** Charter. In addition, the Commissioner of the Department of Finance and the Comptroller may jointly issue standards pursuant to which the **Agency** may waive the requirements of this Article 76 for payments in the following circumstances: (i) for individuals or classes of individuals for whom compliance imposes a hardship; (ii) for classifications or types of checks; or (iii) in other circumstances as may be necessary in the interest of the **City**.

ARTICLE 77. RECORDS RETENTION

77.1 The **Contractor** agrees to retain all books, records, and other documents relevant to this **Contract** for six years after the final payment or termination of this **Contract**, whichever is later. **City**, state, and federal auditors and any other persons duly authorized by the **City** shall have full access to and the right to examine any such books, records, and other documents during the retention period.

ARTICLE 78. EXAMINATION AND VIEWING OF SITE, CONSIDERATION OF OTHER SOURCES OF INFORMATION AND CHANGED SITE CONDITIONS

78.1 Pre-Bidding (Investigation) Viewing of Site – Bidders must carefully view and examine the **Site** of the proposed **Work**, as well as its adjacent area, and seek other usual sources of information, for they will be conclusively presumed to have full knowledge of any and all conditions and hazards on, about or above the **Site** relating to or affecting in any way the performance of the **Work** to be done under the **Contract** that were or should have been known by a reasonably prudent bidder. To arrange a date for visiting the **Site**, bidders are to contact the **Agency** contact person specified in the bid documents.

78.2 Should the **Contractor** encounter during the progress of the **Work** site conditions or environmental hazards at the **Site** materially differing from any shown on the **Contract Drawings** or indicated in the **Specifications** or such conditions or environmental hazards as could not reasonably have been anticipated by the **Contractor**, which conditions or hazards will materially affect the cost of the **Work** to be done under the **Contract**, the attention of the **Commissioner** must be called immediately to such conditions or hazards before they are disturbed. The **Commissioner** shall thereupon promptly investigate the conditions or hazards. If the **Commissioner** finds that they do so materially differ, and that they could not have been reasonably anticipated by the **Contractor**, the **Contract** may be modified with the **Commissioner's** written approval.

**ARTICLE 79. PARTICIPATION BY MINORITY-OWNED AND WOMEN-OWNED
BUSINESS ENTERPRISES IN CITY PROCUREMENT**

NOTICE TO ALL PROSPECTIVE CONTRACTORS

ARTICLE I. M/WBE PROGRAM

Local Law No. 129 of 2005 added and Local Law 1 of 2013 amended Section 6-129 of the Administrative Code of the City of New York (hereinafter “Section 6-129”). Section 6-129 establishes the program for participation in City procurement (“M/WBE Program”) by minority- owned business enterprises (“MBEs”) and women-owned business enterprises (“WBEs”), certified in accordance with Section 1304 of the New York City Charter. As stated in Section 6-129, the intent of the program is to address the impact of discrimination on the City’s procurement process, and to promote the public interest in avoiding fraud and favoritism in the procurement process, increasing competition for City business, and lowering contract costs. The contract provisions contained herein are pursuant to Section 6-129, and the rules of the Department of Small Business Services (“DSBS”) promulgated thereunder.

If this Contract is subject to the M/WBE Program established by Section 6-129, the specific requirements of MBE and/or WBE participation for this Contract are set forth in Schedule B of the Contract (entitled the “M/WBE Utilization Plan”), and are detailed below. The Contractor must comply with all applicable MBE and WBE requirements for this Contract.

All provisions of Section 6-129 are hereby incorporated in the Contract by reference and all terms used herein that are not defined herein shall have the meanings given such terms in Section 6-129. Article I, Part A, below, sets forth provisions related to the participation goals for construction, standard and professional services contracts. Article I, Part B, below, sets forth miscellaneous provisions related to the M/WBE Program.

PART A

**PARTICIPATION GOALS FOR CONSTRUCTION, STANDARD
AND PROFESSIONAL SERVICES CONTRACTS OR TASK ORDERS**

1. The **MBE and/or WBE Participation Goals** established for this Contract or Task Orders issued pursuant to this Contract, (“**Participation Goals**”), as applicable, are set forth on Schedule B, Part I to this Contract (see Page 1, line 1 Total Participation Goals) or will be set forth on Schedule B, Part I to Task Orders issued pursuant to this Contract, as applicable.

The **Participation Goals** represent a percentage of the total dollar value of the Contract or Task Order, as applicable, that may be achieved by awarding subcontracts to firms certified with New York City Department of Small Business Services as MBEs and/or WBEs, and/or by crediting the participation of prime contractors and/or qualified joint ventures as provided in Section 3 below, unless the goals have been waived or modified by Agency in accordance with Section 6-129 and Part A, Sections 10 and 11 below, respectively.

2. If **Participation Goals** have been established for this Contract or Task Orders issued pursuant to this Contract, Contractor agrees or shall agree as a material term of the Contract that Contractor shall be subject to the **Participation Goals**, unless the goals are waived or modified by Agency in accordance with Section 6-129 and Part A, Sections 10 and 11 below, respectively.

3. If **Participation Goals** have been established for this Contract or Task Order issued pursuant to this Contract, a Contractor that is an MBE and/or WBE shall be permitted to count its own participation toward fulfillment of the relevant **Participation Goal**, provided that in accordance with Section 6-129 the value of Contractor's participation shall be determined by subtracting from the total value of the Contract or Task Order, as applicable, any amounts that the Contractor pays to direct subcontractors (as defined in Section 6-129(c)(13)), and provided further that a Contractor that is certified as both an MBE and a WBE may count its own participation either toward the goal for MBEs or the goal for WBEs, but not both.

A Contractor that is a qualified joint venture (as defined in Section 6-129(c)(30)) shall be permitted to count a percentage of its own participation toward fulfillment of the relevant **Participation Goal**. In accordance with Section 6-129, the value of Contractor's participation shall be determined by subtracting from the total value of the Contract or Task Order, as applicable, any amounts that Contractor pays to direct subcontractors, and then multiplying the remainder by the percentage to be applied to total profit to determine the amount to which an MBE or WBE is entitled pursuant to the joint venture agreement, provided that where a participant in a joint venture is certified as both an MBE and a WBE, such amount shall be counted either toward the goal for MBEs or the goal for WBEs, but not both.

4. A. If **Participation Goals** have been established for this Contract, a prospective contractor shall be required to submit with its bid or proposal, as applicable, a completed Schedule B, M/WBE Utilization Plan, Part II (see Pages 2-4) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; and (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end. In the event that this M/WBE Utilization Plan indicates that the bidder or proposer, as applicable, does not intend to meet the **Participation Goals**, the bid or proposal, as applicable, shall be deemed non-responsive, unless Agency has granted the bidder or proposer, as applicable, a pre- award waiver of the Participation Goals in accordance with Section 6-129 and Part A, Section 10 below.

B. (i) If this Contract is for a master services agreement or other requirements type contract that will result in the issuance of Task Orders that will be individually registered ("Master Services Agreement") and is subject to M/WBE **Participation Goals**, a prospective contractor shall be required to submit with its bid or proposal, as applicable, a completed Schedule B, M/WBE Participation Requirements for Master Services Agreements That Will Require Individually Registered Task Orders, Part II (page 2) indicating the prospective contractor's certification and required affirmations to make all reasonable good faith efforts to meet participation goals established on each individual Task Order issued pursuant to this Contract, or if a partial waiver is obtained or such goals are modified by the Agency, to meet the modified **Participation Goals** by soliciting and obtaining the participation of certified MBE and/or WBE firms. In the event that the Schedule B indicates that the bidder or proposer, as applicable, does not intend to meet the **Participation Goals** that may be established on Task Orders issued pursuant to this Contract, the bid or proposal, as applicable, shall be deemed nonresponsive.

(ii) **Participation Goals** on a Master Services Agreement will be established for individual Task Orders issued after the Master Services Agreement is awarded. If **Participation Goals** have been established on a Task Order, a contractor shall be required to submit a Schedule B – M/WBE Utilization Plan For Independently Registered Task Orders That Are Issued Pursuant to Master Services Agreements, Part II (see Pages 2-4) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; and (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end. The contractor must engage in good faith efforts to meet the **Participation Goals** as established for the Task Order unless Agency has granted the contractor a pre-award waiver of the Participation Goals in accordance with Section 6-129 and Part A, Section 10 below.

C. THE BIDDER/PROPOSER MUST COMPLETE THE SCHEDULE B INCLUDED HEREIN (SCHEDULE B, PART II). A SCHEDULE B SUBMITTED BY THE BIDDER/PROPOSER WHICH DOES NOT INCLUDE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS (SEE SECTION V OF PART II) WILL BE DEEMED TO BE NON-RESPONSIVE, UNLESS A FULL WAIVER OF THE PARTICIPATION GOALS IS GRANTED (SCHEDULE B, PART III). IN THE EVENT THAT THE CITY DETERMINES THAT THE BIDDER/PROPOSER HAS SUBMITTED A SCHEDULE B WHERE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS ARE COMPLETED BUT OTHER ASPECTS OF THE SCHEDULE B ARE NOT COMPLETE, OR CONTAIN A COPY OR COMPUTATION ERROR THAT IS AT ODDS WITH THE VENDOR CERTIFICATION AND AFFIRMATIONS, THE BIDDER/PROPOSER WILL BE NOTIFIED BY THE AGENCY AND WILL BE GIVEN FOUR (4) CALENDAR DAYS FROM RECEIPT OF NOTIFICATION TO CURE THE SPECIFIED DEFICIENCIES AND RETURN A COMPLETED SCHEDULE B TO THE AGENCY. FAILURE TO DO SO WILL RESULT IN A DETERMINATION THAT THE BID/PROPOSAL IS NON-RESPONSIVE. RECEIPT OF NOTIFICATION IS DEFINED AS THE DATE NOTICE IS E-MAILED OR FAXED (IF THE BIDDER/PROPOSER HAS PROVIDED AN E-MAIL ADDRESS OR FAX NUMBER), OR NO LATER THAN FIVE (5) CALENDAR DAYS FROM THE DATE OF MAILING OR UPON DELIVERY, IF DELIVERED.

5. Where an M/WBE Utilization Plan has been submitted, the Contractor shall, within 30 days of issuance by Agency of a notice to proceed, submit a list of proposed persons or entities to which it intends to award subcontracts within the subsequent 12 months. In the case of multiyear contracts, such list shall also be submitted every year thereafter. The Agency may also require the Contractor to report periodically about the contracts awarded by its direct subcontractors to indirect subcontractors (as defined in Section 6-129(c)(22)). **PLEASE NOTE: If this Contract is a public works project subject to GML §101(5) (i.e., a contract valued at or below \$3M for projects in New York City) or if the Contract is subject to a project labor agreement in accordance with Labor Law §222, and the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades (plumbing and gas fitting; steam heating, hot water heating, ventilating and air conditioning (HVAC); and electric wiring), the Contractor must identify all those to which it intends to award construction subcontracts for any portion of the Wicks trade work at the time of bid submission, regardless of what point in the life of the contract such subcontracts will occur. In identifying intended subcontractors in the bid submission, bidders may satisfy any Participation Goals established for this Contract by proposing one or more subcontractors that are MBEs and/or WBEs for any portion of the Wicks trade work. In the event that the Contractor's selection of a subcontractor is disapproved, the Contractor shall have a reasonable time to propose alternate subcontractors.**

6. MBE and WBE firms must be certified by DSBS in order for the Contractor to credit such firms' participation toward the attainment of the **Participation Goals**. Such certification must occur prior to the

firms' commencement of work. A list of MBE and WBE firms may be obtained from the DSBS website at www.nyc.gov/buycertified, by emailing DSBS at buyer@sbs.nyc.gov, by calling (212) 513-6356, or by visiting or writing DSBS at 110 William St., New York, New York, 10038, 7th floor. Eligible firms that have not yet been certified may contact DSBS in order to seek certification by visiting www.nyc.gov/getcertified, emailing MWBE@sbs.nyc.gov, or calling the DSBS certification helpline at (212) 513-6311. A firm that is certified as both an MBE and a WBE may be counted either toward the goal for MBEs or the goal for WBEs, but not both. No credit shall be given for participation by a graduate MBE or graduate WBE, as defined in Section 6-129(c)(20).

7. Where an **M/WBE** Utilization Plan has been submitted, the Contractor shall, with each voucher for payment, and/or periodically as Agency may require, submit statements, certified under penalty of perjury, which shall include, but not be limited to, the total amount the Contractor paid to its direct subcontractors, and, where applicable pursuant to Section 6-129(j), the total amount direct subcontractors paid to indirect subcontractors; the names, addresses and contact numbers of each MBE or WBE hired as a subcontractor by the Contractor, and, where applicable, hired by any of the Contractor's direct subcontractors; and the dates and amounts paid to each MBE or WBE. The Contractor shall also submit, along with its voucher for final payment: the total amount it paid to subcontractors, and, where applicable pursuant to Section 6-129(j), the total amount its direct subcontractors paid directly to their indirect subcontractors; and a final list, certified under penalty of perjury, which shall include the name, address and contact information of each subcontractor that is an MBE or WBE, the work performed by, and the dates and amounts paid to each.

8. If payments made to, or work performed by, MBEs or WBEs are less than the amount specified in the Contractor's **M/WBE** Utilization Plan, Agency shall take appropriate action, in accordance with Section 6-129 and Article II below, unless the Contractor has obtained a modification of its **M/WBE** Utilization Plan in accordance with Section 6-129 and Part A, Section 11 below.

9. Where an **M/WBE** Utilization Plan has been submitted, and the Contractor requests a change order the value of which exceeds the greater of 10 percent of the Contract or Task Order, as applicable, or \$500,000, Agency shall review the scope of work for the Contract or Task Order, as applicable, and the scale and types of work involved in the change order, and determine whether the **Participation Goals** should be modified.

10. Pre-award waiver of the **Participation Goals**. (a) A bidder or proposer, or contractor with respect to a Task Order, may seek a pre-award full or partial waiver of the **Participation Goals** in accordance with Section 6-129, which requests that Agency change one or more **Participation Goals** on the grounds that the **Participation Goals** are unreasonable in light of the availability of certified firms to perform the services required, or by demonstrating that it has legitimate business reasons for proposing a lower level of subcontracting in its M/WBE Utilization Plan.

(b) To apply for a full or partial waiver of the **Participation Goals**, a bidder, proposer, or contractor, as applicable, must complete Part III (Page 5) of Schedule B and submit such request no later than seven (7) calendar days prior to the date and time the bids, proposals, or Task Orders are due, in writing to the Agency by email at poped@ddc.nyc.gov or via facsimile at (718) 391-1886. Bidders, proposers, or contractors, as applicable, who have submitted requests will receive an Agency response by no later than two (2) calendar days prior to the due date for bids, proposals, or Task Orders; provided, however, that if that date would fall on a weekend or holiday, an Agency response will be provided by close-of-business on the business day before such weekend or holiday date.

(c) If the Agency determines that the **Participation Goals** are unreasonable in light of the availability of certified firms to perform the services required, it shall revise the solicitation and extend the deadline for bids and proposals, or revise the Task Order, as applicable.

(d) Agency may grant a full or partial waiver of the **Participation Goals** to a bidder, proposer or contractor, as applicable, who demonstrates—before submission of the bid, proposal or Task Order, as applicable—that it has legitimate business reasons for proposing the level of subcontracting in its **M/WBE Utilization Plan**. In making its determination, Agency shall consider factors that shall include, but not be limited to, whether the bidder, proposer or contractor, as applicable, has the capacity and the bona fide intention to perform the Contract without any subcontracting, or to perform the Contract without awarding the amount of subcontracts represented by the **Participation Goals**. In making such determination, Agency may consider whether the **M/WBE Utilization Plan** is consistent with past subcontracting practices of the bidder, proposer or contractor, as applicable, whether the bidder, proposer or contractor, as applicable, has made efforts to form a joint venture with a certified firm, and whether the bidder, proposer, or contractor, as applicable, has made good faith efforts to identify other portions of the Contract that it intends to subcontract.

11. Modification of **M/WBE Utilization Plan**. (a) A Contractor may request a modification of its **M/WBE Utilization Plan** after award of this Contract. **PLEASE NOTE: If this Contract is a public works project subject to GML §101(5) (i.e., a contract valued at or below \$3M for projects in New York City) or if the Contract is subject to a project labor agreement in accordance with Labor Law §222, and the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades (plumbing and gas fitting; steam heating, hot water heating, ventilating and air conditioning (HVAC); and electric wiring), the Contractor may request a Modification of its M/WBE Utilization Plan as part of its bid submission.** The Agency may grant a request for Modification of a Contractor's **M/WBE Utilization Plan** if it determines that the Contractor has established, with appropriate documentary and other evidence, that it made reasonable, good faith efforts to meet the **Participation Goals**. In making such determination, Agency shall consider evidence of the following efforts, as applicable, along with any other relevant factors:

- (i) The Contractor advertised opportunities to participate in the Contract, where appropriate, in general circulation media, trade and professional association publications and small business media, and publications of minority and women's business organizations;
- (ii) The Contractor provided notice of specific opportunities to participate in the Contract, in a timely manner, to minority and women's business organizations;
- (iii) The Contractor sent written notices, by certified mail or facsimile, in a timely manner, to advise MBEs or WBEs that their interest in the Contract was solicited;
- (iv) The Contractor made efforts to identify portions of the work that could be substituted for portions originally designated for participation by MBEs and/or WBEs in the **M/WBE Utilization Plan**, and for which the Contractor claims an inability to retain MBEs or WBEs;
- (v) The Contractor held meetings with MBEs and/or WBEs prior to the date their bids or proposals were due, for the purpose of explaining in detail the scope and requirements of the work for which their bids or proposals were solicited;
- (vi) The Contractor made efforts to negotiate with MBEs and/or WBEs as relevant to perform specific subcontracts, or act as suppliers or service providers;
- (vii) Timely written requests for assistance made by the Contractor to Agency's **M/WBE liaison officer** and to DSBS;
- (viii) Description of how recommendations made by DSBS and Agency were acted upon and an explanation of why action upon such recommendations did not lead to the desired level of participation of MBEs and/or WBEs.

Agency's **M/WBE officer** shall provide written notice to the Contractor of the determination.

(b) The Agency may modify the **Participation Goals** when the scope of the work has been changed by the Agency in a manner that affects the scale and types of work that the Contractor indicated in its **M/WBE Utilization Plan** would be awarded to subcontractors.

12. If this Contract is for an indefinite quantity of construction, standard or professional services or is a requirements type contract and the Contractor has submitted an **M/WBE** Utilization Plan and has committed to subcontract work to MBEs and/or WBEs in order to meet the **Participation Goals**, the Contractor will not be deemed in violation of the M/WBE Program requirements for this Contract with regard to any work which was intended to be subcontracted to an MBE and/or WBE to the extent that the Agency has determined that such work is not needed.

13. If **Participation Goals** have been established for this Contract or a Task Order issued pursuant to this Contract, at least once annually during the term of the Contract or Task Order, as applicable, Agency shall review the Contractor's progress toward attainment of its M/WBE Utilization Plan, including but not limited to, by reviewing the percentage of work the Contractor has actually awarded to MBE and/or WBE subcontractors and the payments the Contractor made to such subcontractors.

14. If **Participation Goals** have been established for this Contract or a Task Order issued pursuant to this Contract, Agency shall evaluate and assess the Contractor's performance in meeting those goals, and such evaluation and assessment shall become part of the Contractor's overall contract performance evaluation.

PART B: MISCELLANEOUS

1. The Contractor shall take notice that, if this solicitation requires the establishment of an **M/WBE** Utilization Plan, the resulting contract may be audited by DSBS to determine compliance with Section 6-129. See §6-129(e)(10). Furthermore, such resulting contract may also be examined by the City's Comptroller to assess compliance with the **M/WBE** Utilization Plan.

2. Pursuant to DSBS rules, construction contracts that include a requirement for an **M/WBE** Utilization Plan shall not be subject to the law governing Locally Based Enterprises set forth in Section 6-108.1 of the Administrative Code of the City of New York.

3. DSBS is available to assist contractors and potential contractors in determining the availability of MBEs and/or WBEs to participate as subcontractors, and in identifying opportunities that are appropriate for participation by MBEs and/or WBEs in contracts.

4. Prospective contractors are encouraged to enter into qualified joint venture agreements with MBEs and/or WBEs as defined by Section 6-129(c)(30).

5. By submitting a bid or proposal the Contractor hereby acknowledges its understanding of the M/WBE Program requirements set forth herein and the pertinent provisions of Section 6-129, and any rules promulgated thereunder, and if awarded this Contract, the Contractor hereby agrees to comply with the M/WBE Program requirements of this Contract and pertinent provisions of Section 6-129, and any rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract. The Contractor hereby agrees to make all reasonable, good faith efforts to solicit and obtain the participation of MBEs and/or WBEs to meet the required **Participation Goals**.

ARTICLE II. ENFORCEMENT

1. If Agency determines that a bidder or proposer, as applicable, has, in relation to this procurement, violated Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, Agency may disqualify such bidder or proposer, as applicable, from competing for this Contract and the Agency may revoke such bidder's or proposer's prequalification status, if applicable.

2. Whenever Agency believes that the Contractor or a subcontractor is not in compliance with Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to any **M/WBE** Utilization Plan, Agency shall send a written notice to the Contractor describing the alleged noncompliance and offering the Contractor an opportunity to be heard. Agency shall then conduct an investigation to determine whether such Contractor or subcontractor is in compliance.

3. In the event that the Contractor has been found to have violated Section 6-129, the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to, any **M/WBE** Utilization Plan, Agency may determine that one of the following actions should be taken:

- (a) entering into an agreement with the Contractor allowing the Contractor to cure the violation;
- (b) revoking the Contractor's pre-qualification to bid or make proposals for future contracts;
- (c) making a finding that the Contractor is in default of the Contract;
- (d) terminating the Contract;
- (e) declaring the Contractor to be in breach of Contract;
- (f) withholding payment or reimbursement;
- (g) determining not to renew the Contract;
- (h) assessing actual and consequential damages;
- (i) assessing liquidated damages or reducing fees, provided that liquidated damages may be based on amounts representing costs of delays in carrying out the purposes of the M/WBE Program, or in meeting the purposes of the Contract, the costs of meeting utilization goals through additional procurements, the administrative costs of investigation and enforcement, or other factors set forth in the Contract;
- (j) exercising rights under the Contract to procure goods, services or construction from another contractor and charge the cost of such contract to the Contractor that has been found to be in noncompliance; or
- (k) taking any other appropriate remedy.

4. If an **M/WBE** Utilization Plan has been submitted, and pursuant to this Article II, Section 3, the Contractor has been found to have failed to fulfill its **Participation Goals** contained in its **M/WBE** Utilization Plan or the **Participation Goals** as modified by Agency pursuant to Article I, Part A, Section 11, Agency may assess liquidated damages in the amount of ten percent (10%) of the difference between the dollar amount of work required to be awarded to MBE and/or WBE firms to meet the **Participation Goals** and the dollar amount the Contractor actually awarded and paid, and/or credited, to MBE and/or WBE firms. In view of the difficulty of accurately ascertaining the loss which the City will suffer by reason of Contractor's failure to meet the **Participation Goals**, the foregoing amount is hereby fixed and agreed as the liquidated damages that the City will suffer by reason of such failure, and not as a penalty. Agency may deduct and retain out of any monies which may become due under this Contract the amount of any such liquidated damages; and in case the amount which may become due under this Contract shall be less than the amount of liquidated damages suffered by the City, the Contractor shall be liable to pay the difference.

5. Whenever Agency has reason to believe that an MBE and/or WBE is not qualified for certification, or is participating in a contract in a manner that does not serve a commercially useful function (as defined in Section 6-129(c)(8)), or has violated any provision of Section 6-129, Agency shall notify the Commissioner of DSBS who shall determine whether the certification of such business enterprise should be revoked.

6. Statements made in any instrument submitted to Agency pursuant to Section 6-129 shall be submitted under penalty of perjury and any false or misleading statement or omission shall be grounds for the application of any applicable criminal and/or civil penalties for perjury. The making of a false or fraudulent statement by an MBE and/or WBE in any instrument submitted pursuant to Section 6-129 shall, in addition, be grounds for revocation of its certification.

7. The Contractor's record in implementing its **M/WBE** Utilization Plan shall be a factor in the evaluation of its performance. Whenever Agency determines that a Contractor's compliance with an **M/WBE** Utilization Plan has been unsatisfactory, Agency shall, after consultation with the City Chief Procurement Officer, file an advice of caution form for inclusion in VENDEX as caution data.

CONTRACT SIGNATURE PAGE

This Contract is entered by and between the City of New York ("City"), acting by and through the **DEPARTMENT OF DESIGN AND CONSTRUCTION**, and **SHARAN BUILDERS INC** ("Contractor").

This Contract consists of this contract signature page as well as the following documents ("Contract Documents") which are located in the Documents tab of the PASSPort record titled **85021B0179-PV467WFAC**.

1. budget detail - Jul 8 2022 3:11PM
2. MWBE- SCHEDULE B - Jul 8 2022 3:12PM
3. (Question answer) - 20210813095049832.pdf - Jul 7 2022 1:57PM
4. (Question answer) - 20210813095521425.pdf - Jul 7 2022 1:57PM
5. (Question answer) - Special Experience.pdf - Jul 7 2022 1:57PM
6. Broker's Certification - Jul 19 2022 4:36PM
7. Disability Insurance - Jul 19 2022 4:39PM
8. Insurance Certificate - Jul 19 2022 4:41PM
9. Notice to Bidders COVID-19 - Jul 7 2022 1:57PM
10. PLA LETTER OF ASCENT - Jul 8 2022 3:22PM
11. Proposal/Bid - Jul 8 2022 5:36PM
12. PV467WFAC Addendum 1 - Jul 7 2022 1:57PM
13. PV467WFAC Bid Drawings - Jul 7 2022 1:57PM
14. PV467WFAC Volume 2 - Jul 7 2022 1:57PM
15. PV467WFAC Volume 3 - Jul 7 2022 1:57PM
16. Security Bond - Jul 19 2022 4:37PM
17. Volume 1 - Jul 7 2022 1:57PM
18. Worker's Compensation - Jul 19 2022 4:40PM

The above order does not represent an order of precedence. The Contract shall be governed by the order of precedence, if any, in the Contract Documents or by ordinary contract principles if no such order of precedence exists.

Each party is signing this Contract electronically on the date stated in that party's electronic signature.

The City of New York

By: **DEPARTMENT OF DESIGN AND CONSTRUCTION**

Thomas Foley

EE0ABB939EE24B0

(Signature)

Name: Thomas Foley

Title: Commissioner

Date: 7/25/2022 | 06:56:53 PDT

Contractor

By: **SHARAN BUILDERS INC**

Manjit Singh

A27FB4EB06CA4AA...

(Signature)

Name: Manjit Singh

Title: President

Date: 7/21/2022 | 07:05:46 PDT

IN WITNESS WHEREOF, the Commissioner, on behalf of the City of New York, and the Contractor, have executed this agreement in quadruplicate, two parts of which are to remain with the Commissioner, another to be filed with the Comptroller of the City, and the fourth to be delivered to the Contractor.

THE CITY OF NEW YORK

By: _____
Commissioner

CONTRACTOR:

By: _____
(Member of Firm or Officer of Corporation)

Title: _____

(Where Contractor is a Corporation, add):
Attest:

Secretary

(Seal)

ACKNOWLEDGEMENT OF PRINCIPAL, IF A CORPORATION

State of _____ County of _____ ss:

On this _____ day of _____, _____, before me personally came _____ to me known who, being by me duly sworn did depose and say that he resides at _____ that he is the _____ of the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation, and that he signed his name thereto by like order.

Notary Public or Commissioner of Deeds

ACKNOWLEDGEMENT OF PRINCIPAL, IF A PARTNERSHIP

State of _____ County of _____ ss:

On this _____ day of _____, _____, before me personally appeared _____ to me known, and known to me to be one of the members of the firm of _____ described in and who executed the foregoing instrument; and he acknowledged to me that he executed the same as and for the act and deed of said firm.

Notary Public or Commissioner of Deeds

ACKNOWLEDGEMENT OF PRINCIPAL, IF AN INDIVIDUAL

State of _____ County of _____ ss:

On this _____ day of _____, _____, before me personally appeared _____ to me known, and known to me to be the person described in and who executed the foregoing instrument; and acknowledged that he executed the same.

Notary Public or Commissioner of Deeds

ACKNOWLEDGEMENT BY COMMISSIONER

State of _____ County of _____ ss:

On this _____ day of _____, _____, before me personally came _____ to me known, and known to be the Deputy Commissioner of the Department of Design and Construction of The City of New York, the person described as such in and who as such executed the foregoing instrument and acknowledged to me that he executed the same as Deputy Commissioner for the purposes therein mentioned.

Notary Public or Commissioner of Deeds

A U T H O R I T Y

MAYOR'S CERTIFICATE NO. CBX
BUDGET DIRECTOR'S CERTIFICATE NO.

DATED
DATED

APPROPRIATION
COMMISSIONER'S CERTIFICATE

In conformity with the provisions of Section 6-101 of the Administrative Code of the City of New York, it is hereby certified that the estimated cost of the work, materials and supplies required by the within Contract, amounting to

Dollars (\$ _____)

is chargeable to the fund of the Department of Design and Construction entitled Code

Department of Design and Construction

I hereby certify that the specifications contained herein comply with the terms and conditions of the BUDGET.

Commissioner

COMPTROLLER'S CERTIFICATE

The City of New York _____

Pursuant to the provisions of Section 6-101 of the Administrative Code of the City of New York, I hereby certify that there remains unapplied and unexpended a balance of the above mentioned fund applicable to this Contract sufficient to pay the estimated expense of executing the same viz:

\$ _____

Comptroller

MAYOR'S CERTIFICATE OR
CERTIFICATE OF THE DIRECTOR
OF THE BUDGET

Performance Bond #1 (Pages 100 to 103): Use if the total contract price is \$5 Million Or Less. Performance Bond #1 has been approved by the U.S. Small Business Administration ("SBA") for participation in its Bond Guarantee Program.

PERFORMANCE BOND #1 (Page 1)
BOND # HICNE-10-221-0002

PERFORMANCE BOND #1

KNOW ALL PERSONS BY THESE PRESENTS:

That we, _____

SHARAN BUILDERS, INC.

128-12 18TH AVENUE, COLLEGE POINT, NY 11356

hereinafter referred to as the "Principal,"
and, _____ HUDSON INSURANCE COMPANY

100 WILLIAM STREET

NEW YORK, NY 10038

hereinafter referred to as the "Surety" ("Sureties") are held and firmly bound to THE CITY OF NEW YORK, hereinafter referred to as the "City" or to its successors and assigns in the penal sum of _____
Four Million Eight Hundred Ninety-Six Thousand Fifty-Three and Twenty-Four Cents.

(\$ 4,896,053.24*****) Dollars, lawful money of the United States for the payment of which said sum of money well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal is about to enter, or has entered, into a Contract in writing with the City for

THE HECKSCHER BUILDING PARTIAL EXTERIOR ENVELOPE UPGRADE (REBID)
1230 5TH AVENUE, NEW YORK, NY 10031, CONTRACT 1 - GENERAL CONSTRUCTION
FMS ID #PV467WFAC, PIN #8502021PV0006C

a copy of which Contract is annexed to and hereby made a part of this bond as though herein set forth in full;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, his or its representatives or assigns, shall well and faithfully perform the said Contract and all modifications, amendments, additions and alterations thereto that may hereafter be made, according to its terms and its true intent and meaning, including repair and or replacement of defective work and guarantees of maintenance for the periods stated in the Contract, and shall fully indemnify and save harmless the City from all cost and damage which it may suffer by reason of the Principal's default of the Contract, and shall fully reimburse and repay the City for all outlay and expense which the City may incur in making

Performance Bond #1 (Pages 100 to 103): Use if the total contract price is \$5 Million Or Less. Performance Bond #1 has been approved by the U.S. Small Business Administration ("SBA") for participation in its Bond Guarantee Program.

PERFORMANCE BOND #1 (Page 2)

good any such default and shall protect the said City of New York against, and pay any and all amounts, damages, cost and judgments which may or shall be recovered against said City or its officers or agents or which the said City of New York may be called upon to pay any person or corporation by reason of any damages arising or growing out of the Principal's default of the Contract, then this obligation shall be null and void, otherwise to remain in full force and effect.

The Surety (Sureties), for value received, hereby stipulates and agrees, upon written notice from the City that the City has determined that the Principal is in default of the Contract, to (1) pay the City the cost to complete the contract as determined by the City in excess of the balance of the Contract held by the City, plus any damages or costs to which the City is entitled, up to the full amount of the above penal sum, (2) fully perform and complete the Work to be performed under the Contract, pursuant to the terms, conditions, and covenants thereof, or (3) tender a completion Contractor that is acceptable to the City. The Surety (Sureties) further agrees, at its option, either to notify the City that it elects to pay the city the cost of completion plus any applicable damages and costs under option (1) above, or to commence and diligently perform the Work specified in the Contract, including physical site work, within twenty-five (25) business days after written notice thereof from the City and, if the Surety elects to fully perform and complete the Work, then to complete all Work within the time set forth in the Contract or such other time as agreed to between the City and Surety in accordance with the Contract. If the Surety elects to tender payment pursuant to (1) above, then the Surety shall tender such amount within fifteen (15) business days notification from the City of the cost of completion. The Surety and the City reserve all rights and defenses each may have against the other; provided, however, that the Surety expressly agrees that its reservation of rights shall not provide a basis for non-performance of its obligation to pay the City the cost of completion, to commence and complete all Work as provided herein, or to tender a completion contractor.

The Surety (Sureties), for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of said Surety (Sureties) and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition, or change in or to the said Contract or the Work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or any moneys due or to become due thereunder; and said Surety (Sureties) does hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, and waivers, and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to subcontractors shall have the same effect as to said Surety (Sureties) as though done or omitted to be done by or in relation to said Principal. Notwithstanding the above, if the City makes payments to the Principal before the time required by the contract that in the aggregate exceed \$100,000 or 10% of the Contract price, whichever is less, and that have not become earned prior to the Principal being found to be in default, then all payments made to the Principal before the time required by the Contract shall be added to the remaining contract value available to be paid for the completion of the Contract as if such sums had not been paid to the Principal, but shall not provide a basis for non-performance of its obligation to pay the City the cost of completion, to commence and to complete all Work as provided herein, or to tender a completion contractor.

Performance Bond #1 (Pages 100 to 103): Use if the total contract price is \$5 Million Or Less. Performance Bond #1 has been approved by the U.S. Small Business Administration ("SBA") for participation in its Bond Guarantee Program.

PERFORMANCE BOND #1 (Page 3)

IN WITNESS WHEREOF, The Principal and the Surety (Sureties) have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereunto affixed and these presents to be signed by their proper officers, this

13th day of JULY, 20 22
(Seal)

SHARAN BUILDERS, INC. (L.S.)
Principal

(Seal)

By: Manjit Singh
MANJIT SINGH, PRESIDENT
Surety

(Seal)

By: HUDSON INSURANCE COMPANY
Kathy A. Lujsi
Kathy A. Lujsi, Surety
Attorney-In-Fact

(Seal)

By: _____
Surety

(Seal)

By: _____
Surety

(Seal)

By: _____
Surety

By: _____

Bond Premium Rate Sliding Scale

Bond Premium Cost \$52,221.05

If the Contractor (Principal) is a partnership, the bond should be signed by each of the individuals who are partners.

If the Contractor (Principal) is a corporation, the bond should be signed in its correct corporate name by a duly authorized officer, agent, or attorney-in-fact.

There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Contract.

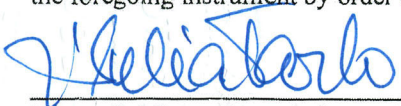
Performance Bond #1 (Pages 100 to 103): Use if the total contract price is \$5 Million Or Less. Performance Bond #1 has been approved by the U.S. Small Business Administration ("SBA") for participation in its Bond Guarantee Program.m.

PERFORMANCE BOND #1 (Page 4)

ACKNOWLEDGMENT OF PRINCIPAL IF A CORPORATION

State of NEW YORK County of QUEENS ss:

On this 12th day of JULY, 20 22 before me personally came MANJIT SINGH,
to me known, who, being by me duly sworn did depose and say that he/she resides
at 55 BREGMAN AVENUE,
NEW HYDE PARK, NY 11040; that he/she is the PRESIDENT
of the corporation described in and which executed the foregoing instrument; and that he/she signed his/her name to
the foregoing instrument by order of the directors of said corporation as the duly authorized and binding act thereof.


Notary Public or Commissioner of Deeds.

JULIA TARLO
Notary Public, State of New York
No. 01TA6041048
Qualified In Kings County
Commission Expires May 01, 2026

ACKNOWLEDGMENT OF PRINCIPAL IF A PARTNERSHIP

State of _____ County of _____ ss:

On this _____ day of _____, 20 _____ before me personally came _____,
to me known, who, being by me duly sworn did dispose and say that he/she resides
at _____;
_____ that he/she is _____ partner of
_____, a limited/general partnership existing under the laws of the State of _____,
the partnership described in and which executed the foregoing instrument;
and that he/she signed his/her name to the foregoing instrument as the duly authorized and binding act of
said partnership.

Notary Public or Commissioner of Deeds.

ACKNOWLEDGMENT OF PRINCIPAL IF AN INDIVIDUAL

State of _____ County of _____ ss:

On this _____ day of _____, 20 _____ before me personally came _____,
to me known, who, being by me duly sworn did depose and say that he/she resides
at _____,
and that he/she is the individual whose name is
subscribed to the within instrument and acknowledged to me that by his/her signature on the
instrument, said individual executed the instrument.

Notary Public or Commissioner of Deeds

Each executed bond should be accompanied by: (a) appropriate acknowledgments of the respective parties; (b) appropriate duly certified copy of Power of Attorney or other certificate of authority where bond is executed by agent, officer or other representative of Principal or Surety; (c) a duly certified extract from By-Laws or resolutions of Surety under which Power of Attorney or other certificate of authority of its agent, officer or representative was issued, and (d) certified copy of latest published financial statement of assets and liabilities of Surety.

Affix Acknowledgments and Justification of Sureties.

CITY OF NEW YORK
DDC

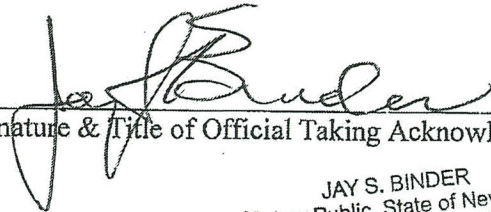
CORPORATE ACKNOWLEDGMENT

State of *New York*
County of *Nassau*^{SS:}

On this *13th* day of *July*, *2022*, before me personally comes

Kathy A. Luisi to me known; who, being by me duly sworn, deposes and says
that he/she resides in *Westbury, NY*, that he/she is the *Attorney-In-Fact* of the
Hudson Insurance Group

the Corporation described
in and which executed the foregoing instrument; that he/she knows the seal of the
said Corporation; that the seal affixed to the said instrument is such Corporate seal; that
it was so affixed by the order of the Board of Directors of the said Corporation, and that
he/she signed his/her name thereto by like order.


(Signature & Title of Official Taking Acknowledgment)

JAY S. BINDER
Notary Public, State of New York
Reg. No. 02B14664783
Qualified in Nassau County
Commission Expires 04/30/2026



HICNE-10-221-0002

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That HUDSON INSURANCE COMPANY, a corporation of the State of Delaware, with offices at 100 William Street, New York, New York, 10038, has made, constituted and appointed, and by these presents, does make, constitute and appoint

Kathy A. Luisi, Laurie Dardis
of the state of New York

its true and lawful Attorney(s)-in-Fact, at New York, New York, each of them alone to have full power to act without the other or others, to make, execute and deliver on its behalf, as Surety, bonds and undertakings given for any and all purposes, also to execute and deliver on its behalf as aforesaid renewals, extensions, agreements, waivers, consents or stipulations relating to such bonds or undertakings provided, however, that no single bond or undertaking shall obligate said Company for any portion of the penal sum thereof in excess of the sum of Ten Million Dollars (\$10,000,000.00).

Such bonds and undertakings when duly executed by said Attorney(s)-in-Fact, shall be binding upon said Company as fully and to the same extent as if signed by the President of said Company under its corporate seal attested by its Secretary.

In Witness Whereof, HUDSON INSURANCE COMPANY has caused these presents to be of its Senior Vice President thereunto duly on this 2nd day of June, 20 20 at New York, New York.



Attest.....
Dina Daskalakis
Corporate Secretary

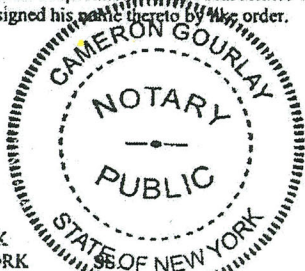
HUDSON INSURANCE COMPANY

By.....
Michael P. Cifone
Senior Vice President

STATE OF NEW YORK
COUNTY OF NEW YORK. SS.

On the 2nd day of June, 20 20 before me personally came Michael P. Cifone to me known, who being by me duly sworn did depose and say that he is a Senior Vice President of HUDSON INSURANCE COMPANY, the corporation described herein and which executed the above instrument, that he knows the seal of said Corporation, that the seal affixed to said instrument is such corporate seal, that it was so affixed by order of the Board of Directors of said Corporation, and that he signed his name thereto by his order.

(Notarial Seal)



.....
CAMERON GOURLAY
Notary Public, State of New York
No. 01GO6372305
Qualified in New York County
Commission Expires June 4, 2022

STATE OF NEW YORK
COUNTY OF NEW YORK

CERTIFICATION

The undersigned Dina Daskalakis hereby certifies:

That the original resolution, of which the following is a true and correct copy, was duly adopted by unanimous written consent of the Board of Directors of Hudson Insurance Company dated July 27th, 2007, and has not since been revoked, amended or modified:

"RESOLVED, that the President, the Executive Vice Presidents, the Senior Vice Presidents and the Vice Presidents shall have the authority and discretion, to appoint such agent or agents, or attorney or attorneys-in-fact, for the purpose of carrying on this Company's surety business, and to empower such agent or agents, or attorney or attorneys-in-fact, to execute and deliver, under this Company's seal or otherwise, bonds obligations, and recognizances, whether made by this Company as surety thereon or otherwise, indemnity contracts, contracts and certificates, and any and all other contracts and undertakings made in the course of this Company's surety business, and renewals, extensions, agreements, waivers, consents or stipulations regarding undertakings so made; and

FURTHER RESOLVED, that the signature of any such Officer of the Company and the Company's seal may be affixed by facsimile to any power of attorney or certification given for the execution of any bond, undertaking, recognizance, contract of indemnity or other written obligation in the nature thereof or related thereto, such signature and seal when so used whether heretofore or hereafter, being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed."

THAT the above and foregoing is a full, true and correct copy of Power of Attorney issued by said Company, and of the whole of the original and that the said Power of Attorney is still in full force and effect and has not been revoked, and furthermore that the Resolution of the Board of Directors, set forth in the said Power of Attorney is now in force.

In witness the hand of the undersigned and the seal of said Corporation this _____ day of _____, 20 ____.



By.....
Dina Daskalakis, Corporate Secretary

HUDSON INSURANCE COMPANY
SHORT FORM FINANCIAL STATEMENT
AS OF DECEMBER 31, 2021

ASSETS

Bonds	\$ 78,461,900
Real estate	0
Mortgage Loans on Real Estate	55,579,974
Cash on hand and on deposit	465,311,314
Reinsurance Receivable	205,268,796
FIT recoverable (including net deferred tax asset)	20,414,554
Aggregate write-ins for other than invested assets	549,757,377
Deferred premiums, agents' balances and installments booked but deferred and not yet due (including earned but unbilled premiums)	91,769,874
Stocks	306,833,546
Other Assets	70,533,194
Total Assets	\$ <u>1,843,930,529</u>

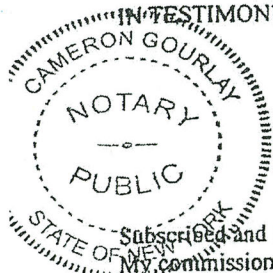
LIABILITIES & SURPLUS

Losses	\$ 309,717,054
Loss adjustment expense	34,090,901
Other expenses	30,721,829
Unearned Premiums	152,538,973
Ceded reinsurance premiums payable	587,327,016
Payable to parent, subsidiaries and affiliates	2,267,312
Commissions payable, contingent commissions and other similar charges	35,242,334
Other Liabilities	135,998,323
Total Liabilities	\$ <u>1,287,903,742</u>
Preferred and Common capital stock	\$ 7,500,238
Gross paid in and contributed surplus	293,480,097
Unassigned funds (surplus)	255,046,452
Surplus as regards policyholders	\$ <u>556,026,787</u>
Total Liabilities and Surplus	\$ <u>1,843,930,529</u>

STATE OF NEW YORK)
) ss:
 COUNTY OF NEW YORK)

I, the undersigned Controller of Hudson Insurance Company hereby certify the foregoing to be a short form financial statement in the form of a balance sheet, showing the Company's assets and liabilities on a provisional basis, at the close of business on December 31, 2021.

IN TESTIMONY WHEREOF, I have set my hand and affixed the seal of the Company, this 3rd day of March, 2022.



Keith M. Brennan
 Keith M. Brennan
 Controller

Subscribed and sworn to before me this 3rd day of March, 2022.
 My commission expires

CAMERON GOURLAY
 Notary Public, State of New York
 No. 01GO6372305
 Qualified in New York County

Payment Bond (Pages 108 to 111): Use for any contract for which a Payment Bond is required.

PAYMENT BOND (Page 1)
Bond # HICNE-10-221-0002

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS, That we, _____

SHARAN BUILDERS, INC.

128-12 18TH AVENUE, COLLEGE POINT, NY 11356

hereinafter referred to as the "Principal", and _____

HUDSON INSURANCE COMPANY

118 WILLIAM STREET

NEW YORK, NY 10038

hereinafter referred to as the "Surety" ("Sureties") are held and firmly bound to THE CITY OF NEW YORK, hereinafter referred to as the "City" or to its successors and assigns, in the penal sum of

Four Million Eight Hundred Ninety-Six Thousand Fifty-Three Dollars and Twenty-Four Cents

(\$4,896,053.24) Dollars, lawful money of the United States, for the payment of which said sum of money well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal is about to enter, or has entered, into a Contract in writing with the City for

THE HECKSCHER BUILDING PARTIAL EXTERIOR ENVELOPE UPGRADE (REBID)
1230 5TH AVENUE, NEW YORK, NY 10031, CONTRACT 1 - GENERAL CONSTRUCTION
FMS ID #PV467WFAC, PIN #8502021PV0006C

a copy of which Contract is annexed to and hereby made a part of this bond as though herein set forth in full;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, his or its representatives or assigns and other Subcontractors to whom Work under this Contract is sublet and his or their successors and assigns shall promptly pay or cause to be paid all lawful claims for

(a) Wages and compensation for labor performed and services rendered by all persons engaged in the prosecution of the Work under said Contract, and any amendment or extension thereof or addition thereto, whether such persons be agents servants or employees of the Principal or any such Subcontractor, including all persons so engaged who perform the work of laborers or mechanics at or in the vicinity of the site

Payment Bond (Pages 108 to 111): Use for any contract for which a Payment Bond is required.

PAYMENT BOND (Page 2)

of the Project regardless of any contractual relationship between the Principal or such Subcontractors, or his or their successors or assigns, on the one hand and such laborers or mechanics on the other, but not including office employees not regularly stationed at the site of the project; and

(b) Materials and supplies (whether incorporated in the permanent structure or not), as well as teams, fuels, oils, implements or machinery furnished, used or consumed by said Principal or any subcontractor at or in the vicinity of the site of the Project in the prosecution of the Work under said Contract and any amendment or extension thereof or addition thereto; then this obligation shall be void, otherwise to remain in full force and effect.

This bond is subject to the following additional conditions, limitations and agreements:

(a) The Principal and Surety (Sureties) agree that this bond shall be for the benefit of any materialmen or laborer having a just claim, as well as the City itself.

(b) All persons who have performed labor, rendered services or furnished materials and supplies, as aforesaid, shall have a direct right of action against the Principal and his, its or their successors and assigns, and the Surety (Sureties) herein, or against either or both or any of them and their successors and assigns. Such persons may sue in their own name, and may prosecute the suit to judgment and execution without the necessity of joining with any other persons as party plaintiff.

(c) The Principal and Surety (Sureties) agree that neither of them will hold the City liable for any judgment for costs of otherwise, obtained by either or both of them against a laborer or materialman in a suit brought by either a laborer or materialman under this bond for moneys allegedly due for performing work or furnishing material.

(d) The Surety (Sureties) or its successors and assigns shall not be liable for any compensation recoverable by an employee or laborer under the Workmen's Compensation Law.

(e) In no event shall the Surety (Sureties), or its successors or assigns, be liable for a greater sum than the penalty of this bond or be subject to any suit, action or proceeding hereon that is instituted by any person, firm, or corporation hereunder later than two years after the complete performance of said Contract and final settlement thereof.

The Principal, for himself and his successors and assigns, and the Surety (Sureties), for itself and its successors and assigns, do hereby expressly waive any objection that might be interposed as to the right of the City to require a bond containing the foregoing provisions, and they do hereby further expressly waive any defense which they or either of them might interpose to an action brought hereon by any person, firm or corporation, including subcontractors, materialmen and third persons, for work, labor, services, supplies or material performed rendered, or furnished as aforesaid upon the ground that there is no law authorizing the City to require the foregoing provisions to be place in this bond.

And the Surety (Sureties), for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of said Surety (Sureties), and its bonds shall be in no way impaired or affected by any extension of time, modification, omission, addition, or change in or of the said Contract or the work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any part thereof, or of any Work to be performed, or any moneys due to become due thereunder and said Surety (Sureties) does hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers, and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, Subcontractors, and other transferees shall have the same effect as to said Surety (Sureties) as though done or omitted to be done or in relation to said Principal.

Payment Bond (Pages 108 to 111): Use for any contract for which a Payment Bond is required.

PAYMENT BOND (Page 3)

IN WITNESS WHEREOF, the Principal and the Surety (Sureties) have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereunto affixed and these presents to be signed by their proper officers, this 13th day of JULY, 2022.

(Seal)

SHARAN BUILDERS, INC. (L.S.)

Principal

By: Manjit Singh

MANJIT SINGH, PRESIDENT

(Seal)

HUDSON INSURANCE COMPANY

Surety

By: Kathy A. Luisi

Kathy A. Luisi - Attorney -In-Fact

(Seal)

Surety

By: _____

(Seal)

Surety

By: _____

(Seal)

Surety

By: _____

If the Contractor (Principal) is a partnership, the bond should be signed by each of the individuals who are partners.

If the Contractor (Principal) is a corporation, the bond should be signed in its correct corporate name by a duly authorized officer, agent, or attorney-in-fact.

There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Contract.

Payment Bond (Pages 108 to 111): Use for any contract for which a Payment Bond is required.

PAYMENT BOND (Page 4)

ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION

State of NEW YORK County of QUEENS ss:

On this 12th day of JULY, 2022, before me personally came MANJIT SINGH to me known, who, being by me duly sworn did depose and say that he resides at 55 BREGMAN AVENUE, NEW HYDE PARK, NY 11040 that he is the PRESIDENT of the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation, and that he signed his name thereto by like order.



JULIA TARLO
Notary Public, State of New York
No. 01TA6041048

Notary Public or Commissioner of Deeds **Qualified in Kings County**
Commission Expires May 01, 2025

ACKNOWLEDGMENT OF PRINCIPAL, IF A PARTNERSHIP

State of _____ County of _____ ss:

On this _____ day of _____, _____, before me personally appeared _____ to me known, and known to me to be one of the members of the firm of _____ described in and who executed the foregoing instrument; and he acknowledged to me that he executed the same as and for the act and deed of said firm.

Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT OF PRINCIPAL, IF AN INDIVIDUAL

State of _____ County of _____ ss:

On this _____ day of _____, _____, before me personally appeared _____ to me known, and known to me to be the person described in and who executed the foregoing instrument; and acknowledged that he executed the same.

Notary Public or Commissioner of Deeds

Each executed bond should be accompanied by: (a) appropriate acknowledgments of the respective parties; (b) appropriate duly certified copy of Power of Attorney or other certificate of authority where bond is executed by agent, officer or other representative of Principal or Surety; (c) a duly certified extract from By-Laws or resolutions of Surety under which Power of Attorney or other certificate of authority of its agent, officer or representative was issued, and (d) certified copy of latest published financial statement of assets and liabilities of Surety.

Affix Acknowledgments and Justification of Sureties.

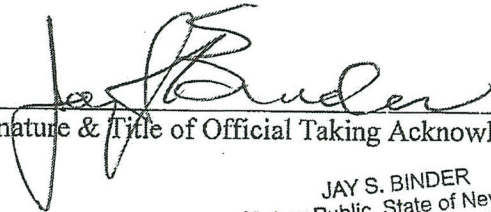
CORPORATE ACKNOWLEDGMENT

State of *New York*
County of *Nassau*^{SS:}

On this *13th* day of *July*, *2022*, before me personally comes

Kathy A. Luisi to me known; who, being by me duly sworn, deposes and says
that he/she resides in Westbury, NY, that he/she is the Attorney-In-Fact of the
Hudson Insurance Group

the Corporation described
in and which executed the foregoing instrument; that he/she knows the seal of the
said Corporation; that the seal affixed to the said instrument is such Corporate seal; that
it was so affixed by the order of the Board of Directors of the said Corporation, and that
he/she signed his/her name thereto by like order.


(Signature & Title of Official Taking Acknowledgment)

JAY S. BINDER
Notary Public, State of New York
Reg. No. 02B14664783
Qualified in Nassau County
Commission Expires 04/30/2026



HICNE-10-221-0002

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That HUDSON INSURANCE COMPANY, a corporation of the State of Delaware, with offices at 100 William Street, New York, New York, 10038, has made, constituted and appointed, and by these presents, does make, constitute and appoint

Kathy A. Luisi, Laurie Dardis
of the state of New York

its true and lawful Attorney(s)-in-Fact, at New York, New York, each of them alone to have full power to act without the other or others, to make, execute and deliver on its behalf, as Surety, bonds and undertakings given for any and all purposes, also to execute and deliver on its behalf as aforesaid renewals, extensions, agreements, waivers, consents or stipulations relating to such bonds or undertakings provided, however, that no single bond or undertaking shall obligate said Company for any portion of the penal sum thereof in excess of the sum of Ten Million Dollars (\$10,000,000.00).

Such bonds and undertakings when duly executed by said Attorney(s)-in-Fact, shall be binding upon said Company as fully and to the same extent as if signed by the President of said Company under its corporate seal attested by its Secretary.

In Witness Whereof, HUDSON INSURANCE COMPANY has caused these presents to be of its Senior Vice President thereunto duly attested on this 2nd day of June, 2020 at New York, New York.



Attest.....
Dina Daskalakis
Corporate Secretary

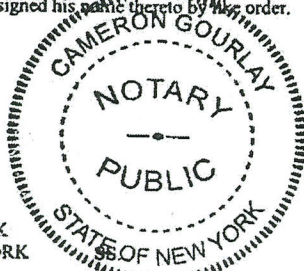
HUDSON INSURANCE COMPANY

By.....
Michael P. Cifone
Senior Vice President

STATE OF NEW YORK
COUNTY OF NEW YORK. SS.

On the 2nd day of June, 2020 before me personally came Michael P. Cifone to me known, who being by me duly sworn did depose and say that he is a Senior Vice President of HUDSON INSURANCE COMPANY, the corporation described herein and which executed the above instrument, that he knows the seal of said Corporation, that the seal affixed to said instrument is such corporate seal, that it was so affixed by order of the Board of Directors of said Corporation, and that he signed his name thereto by his order.

(Notarial Seal)



.....
CAMERON GOURLAY
Notary Public, State of New York
No. 01GO6372305
Qualified in New York County
Commission Expires June 4, 2022

STATE OF NEW YORK
COUNTY OF NEW YORK

CERTIFICATION

The undersigned Dina Daskalakis hereby certifies:

That the original resolution, of which the following is a true and correct copy, was duly adopted by unanimous written consent of the Board of Directors of Hudson Insurance Company dated July 27th, 2007, and has not since been revoked, amended or modified:

"RESOLVED, that the President, the Executive Vice Presidents, the Senior Vice Presidents and the Vice Presidents shall have the authority and discretion, to appoint such agent or agents, or attorney or attorneys-in-fact, for the purpose of carrying on this Company's surety business, and to empower such agent or agents, or attorney or attorneys-in-fact, to execute and deliver, under this Company's seal or otherwise, bonds obligations, and recognizances, whether made by this Company as surety thereon or otherwise, indemnity contracts, contracts and certificates, and any and all other contracts and undertakings made in the course of this Company's surety business, and renewals, extensions, agreements, waivers, consents or stipulations regarding undertakings so made; and

FURTHER RESOLVED, that the signature of any such Officer of the Company and the Company's seal may be affixed by facsimile to any power of attorney or certification given for the execution of any bond, undertaking, recognizance, contract of indemnity or other written obligation in the nature thereof or related thereto, such signature and seal when so used whether heretofore or hereafter, being hereby adopted by the Company as the original signature of such officer and the original seal of the Company, to be valid and binding upon the Company with the same force and effect as though manually affixed."

THAT the above and foregoing is a full, true and correct copy of Power of Attorney issued by said Company, and of the whole of the original and that the said Power of Attorney is still in full force and effect and has not been revoked, and furthermore that the Resolution of the Board of Directors, set forth in the said Power of Attorney is now in force.

In witness the hand of the undersigned and the seal of said Corporation this _____ day of _____, 20____



By.....
Dina Daskalakis, Corporate Secretary

HUDSON INSURANCE COMPANY
SHORT FORM FINANCIAL STATEMENT
AS OF DECEMBER 31, 2021

ASSETS

Bonds	\$	78,461,900
Real estate		0
Mortgage Loans on Real Estate		55,579,974
Cash on hand and on deposit		465,311,314
Reinsurance Receivable		205,268,796
FIT recoverable (including net deferred tax asset)		20,414,554
Aggregate write-ins for other than invested assets		549,757,377
Deferred premiums, agents' balances and installments booked but deferred and not yet due (including earned but unbilled premiums)		91,769,874
Stocks		306,833,546
Other Assets		70,533,194
Total Assets	\$	<u>1,843,930,529</u>

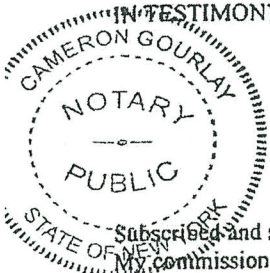
LIABILITIES & SURPLUS

Losses	\$	309,717,054
Loss adjustment expense		34,090,901
Other expenses		30,721,829
Unearned Premiums		152,538,973
Ceded reinsurance premiums payable		587,327,016
Payable to parent, subsidiaries and affiliates		2,267,312
Commissions payable, contingent commissions and other similar charges		35,242,334
Other Liabilities		135,998,323
Total Liabilities	\$	<u>1,287,903,742</u>
Preferred and Common capital stock	\$	7,500,238
Gross paid in and contributed surplus		293,480,097
Unassigned funds (surplus)		255,046,452
Surplus as regards policyholders	\$	<u>556,026,787</u>
Total Liabilities and Surplus	\$	<u>1,843,930,529</u>

STATE OF NEW YORK)
) ss:
COUNTY OF NEW YORK)

I, the undersigned Controller of Hudson Insurance Company hereby certify the foregoing to be a short form financial statement in the form of a balance sheet, showing the Company's assets and liabilities on a provisional basis, at the close of business on December 31, 2021.

IN TESTIMONY WHEREOF, I have set my hand and affixed the seal of the Company, this 3rd day of March, 2022.



Keith M. Brennan
Keith M. Brennan
Controller

Subscribed and sworn to before me this 3rd day of March, 2022.
My commission expires

[Signature]
CAMERON GOURLAY
Notary Public, State of New York
No. 01GQ6372305
Qualified in New York County



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

10/19/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Reliable Insurance Services, LLC 180-07 Jamaica Ave Jamaica NY 11432	CONTACT NAME: SYED MAJID PHONE (A/C, No. Ext): 718-441-2627 E-MAIL ADDRESS: reliable120@gmail.com FAX (A/C, No): 888-230-1961																					
INSURED SHARAN BUILDERS, INC. 128-12 18TH AVENUE COLLEGE POINT NY 11356	<table><tr><th colspan="2">INSURER(S) AFFORDING COVERAGE</th><th>NAIC #</th></tr><tr><td>INSURER A:</td><td>State Farm Fire and Casualty Company</td><td>25143</td></tr><tr><td>INSURER B:</td><td>Progressive Casualty Insurance Company</td><td>24260</td></tr><tr><td>INSURER C:</td><td>State Farm</td><td>25143</td></tr><tr><td>INSURER D:</td><td>ShelterPoint Life Insurance Co.</td><td>81434</td></tr><tr><td>INSURER E:</td><td>State Farm Fire and Casualty Company</td><td>25143</td></tr><tr><td>INSURER F:</td><td></td><td></td></tr></table>	INSURER(S) AFFORDING COVERAGE		NAIC #	INSURER A:	State Farm Fire and Casualty Company	25143	INSURER B:	Progressive Casualty Insurance Company	24260	INSURER C:	State Farm	25143	INSURER D:	ShelterPoint Life Insurance Co.	81434	INSURER E:	State Farm Fire and Casualty Company	25143	INSURER F:		
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INSURER F:																						

COVERAGES**CERTIFICATE NUMBER:****REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	92CZD3875 92-C3-C5611	10/26/2021 10/26/2022	10/26/2022 10/26/2023	EACH OCCURRENCE \$ 5,000,000
	<input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						MED EXP (Any one person) \$ 5,000
	<input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC		PERSONAL & ADV INJURY \$ 1,000,000				
	OTHER:						GENERAL AGGREGATE \$ 10,000,000
							PRODUCTS - COMP/OP AGG \$ 10,000,000
B	AUTOMOBILE LIABILITY	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	CNY 000-5949-732-2	03/10/2022	03/10/2023	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000
	<input checked="" type="checkbox"/> ANY AUTO						BODILY INJURY (Per person) \$
	<input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS NON-OWNED AUTOS ONLY						BODILY INJURY (Per accident) \$
	<input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/>						PROPERTY DAMAGE (Per accident) \$
E	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR	<input type="checkbox"/>	<input type="checkbox"/>	92-C0-K284-5	06/24/2022	06/24/2023	EACH OCCURRENCE \$ 2,000,000
	<input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE						AGGREGATE \$ 2,000,000
	<input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$						
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	92C5Z6804	05/06/2022	05/06/2023	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER \$ 1,000,000
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	Y/N <input checked="" type="checkbox"/> Y <input type="checkbox"/> N/A					E.L. EACH ACCIDENT \$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE \$ 1,000,000
							E.L. DISEASE - POLICY LIMIT \$
D	Disability	<input type="checkbox"/>	<input type="checkbox"/>	DBL245772	01/16/2022	01/17/2023	STATUTORY

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Policy Coverage is subject to provisions & exclusions.

Certificate Holder is listed as an Additional Insured. PROJECT: FMS ID #PV467WFAC, PIN #8502021PV0006C The Heckscher Building Partial Exterior Envelope Upgrade (Rebid) 1230 5th Avenue, New York, NY 10031. The City of New York, together with its officials and employees with coverage at least as broad as ISO forms CG 2010; CG 20 37, With coverage at least as broad as ISO form CG 20 26 are additional insured (with respect to General Liability, automobile liability and umbrella insurance. A Waiver of subrogation is included in favor of all additional insureds with respect to General Liability On a primary and non-contributory basis

CERTIFICATE HOLDER**CANCELLATION**

The City of New York, Department of Design and Construction
30-30 Thomson Avenue
Long Island City, NY 11101

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED – OWNERS, LESSEES OR
CONTRACTORS – SCHEDULED PERSON OR
ORGANIZATION**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s):	Location(s) Of Covered Operations
City of New York, including its officials and employees and The Heckscher Building Partial Exterior Envelope Upgrade (Rebid)	PROJECT: FMS ID #PV467WFAC, PIN #8502021PV0006C The Heckscher Building Partial Exterior Envelope Upgrade (Rebid) 1230 5th Avenue, New York, NY 10031.
Information required to complete this Schedule, if not shown above, will be shown in the Declarations.	

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:

1. Your acts or omissions; or
2. The acts or omissions of those acting on your behalf;

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above.

B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

**ADDITIONAL INSURED – DESIGNATED
PERSON OR ORGANIZATION**

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s):

City of New York, including its officials and employees and The Heckscher Building Partial Exterior
Envelope Upgrade (Rebid)

Information required to complete this Schedule, if not shown above, will be shown in the Declarations.

A. Section II – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by your acts or omissions or the acts or omissions of those acting on your behalf:

1. In the performance of your ongoing operations; or
2. In connection with your premises owned by or rented to you.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

B. With respect to the insurance afforded to these additional insureds, the following is added to Section III – Limits Of Insurance:

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
 2. Available under the applicable Limits of Insurance shown in the Declarations;
- whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.



**Workers'
Compensation
Board**

CERTIFICATE OF NYS WORKERS' COMPENSATION INSURANCE COVERAGE

1a. Legal Name & Address of Insured (use street address only) SHARAN BUILDERS INC 12812 18TH AVE COLLEGE POINT, NY 11356 Work Location of Insured (Only required if coverage is specifically limited to certain locations in New York State, i.e., a Wrap-Up Policy)	1b. Business Telephone Number of Insured 718-361-1700 1c. NYS Unemployment Insurance Employer Registration Number of Insured 1d. Federal Employer Identification Number of Insured or Social Security Number 20-3937029
2. Name and Address of Entity Requesting Proof of Coverage (Entity Being Listed as the Certificate Holder) The City of New York, Department of Design and Construction 30-30 Thomson Avenue Long Island City, NY 11101	3a. Name of Insurance Carrier STATE FARM 3b. Policy Number of Entity Listed in Box "1a" 98CRD5262 3c. Policy effective period 05/06/2022 to 05/06/2023 3d. The Proprietor, Partners or Executive Officers are <input type="checkbox"/> included. (Only check box if all partners/officers included) <input checked="" type="checkbox"/> all excluded or certain partners/officers excluded.

This certifies that the insurance carrier indicated above in box "3" insures the business referenced above in box "1a" for workers' compensation under the New York State Workers' Compensation Law. **(To use this form, New York (NY) must be listed under Item 3A on the INFORMATION PAGE of the workers' compensation insurance policy).** The Insurance Carrier or its licensed agent will send this Certificate of Insurance to the entity listed above as the certificate holder in box "2".

Will the carrier notify the certificate holder within 10 days of a policy being cancelled for non-payment of premium or within 30 days if cancelled for any other reason or if the insured is otherwise eliminated from the coverage indicated on this certificate prior to the end of the policy effective period? ☒ YES ☐ NO

This certificate is issued as a matter of information only and confers no rights upon the certificate holder. This certificate does not amend, extend or alter the coverage afforded by the policy listed, nor does it confer any rights or responsibilities beyond those contained in the referenced policy.

This certificate may be used as evidence of a Workers' Compensation contract of insurance only while the underlying policy is in effect.

Please Note: Upon cancellation of the workers' compensation policy indicated on this form, if the business continues to be named on a permit, license or contract issued by a certificate holder, the business must provide that certificate holder with a new Certificate of Workers' Compensation Coverage or other authorized proof that the business is complying with the mandatory coverage requirements of the New York State Workers' Compensation Law.

Under penalty of perjury, I certify that I am an authorized representative or licensed agent of the insurance carrier referenced above and that the named insured has the coverage as depicted on this form.

Approved by: JENNIFER NICHOLS
(Print name of authorized representative or licensed agent of insurance carrier)

Approved by:  07/07/2022
(Signature) (Date)

Title: LICESED TEAM MEMBER

Telephone Number of authorized representative or licensed agent of insurance carrier: 646-858-0755

Please Note: Only insurance carriers and their licensed agents are authorized to issue Form C-105.2. Insurance brokers are NOT authorized to issue it.

C-105.2 (9-15)

www.wcb.ny.gov



Workers'
Compensation
Board

CERTIFICATE OF INSURANCE COVERAGE NYS DISABILITY AND PAID FAMILY LEAVE BENEFITS LAW

PART 1. To be completed by NYS disability and Paid Family Leave benefits carrier or licensed insurance agent of that carrier

1a. Legal Name & Address of Insured (use street address only) SHARAN BUILDERS INC 128-12 18TH AVENUE COLLEGE POINT, NY 11356 <small>Work Location of Insured (Only required if coverage is specifically limited to certain locations in New York State, i.e., Wrap-Up Policy)</small>	1b. Business Telephone Number of Insured 718-361-1700 1c. Federal Employer Identification Number of Insured or Social Security Number 203937029
2. Name and Address of Entity Requesting Proof of Coverage (Entity Being Listed as the Certificate Holder) The City of New York Department of Design and Construction 30-30 Thomson Avenue Long Island City, NY 11101	3a. Name of Insurance Carrier ShelterPoint Life Insurance Company 3b. Policy Number of Entity Listed in Box "1a" DBL245772 3c. Policy effective period 01/17/2022 to 01/16/2023

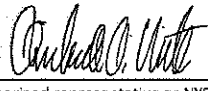
4. Policy provides the following benefits:

- ☒ A. Both disability and paid family leave benefits.
☐ B. Disability benefits only.
☐ C. Paid family leave benefits only.

5. Policy covers:

- ☒ A. All of the employer's employees eligible under the NYS Disability and Paid Family Leave Benefits Law.
☐ B. Only the following class or classes of employer's employees:

Under penalty of perjury, I certify that I am an authorized representative or licensed agent of the insurance carrier referenced above and that the named insured has NYS Disability and/or Paid Family Leave Benefits insurance coverage as described above.

Date Signed 7/7/2022 By 
(Signature of insurance carrier's authorized representative or NYS Licensed Insurance Agent of that insurance carrier)

Telephone Number 516-829-8100 Name and Title Richard White, Chief Executive Officer

IMPORTANT: If Boxes 4A and 5A are checked, and this form is signed by the insurance carrier's authorized representative or NYS Licensed Insurance Agent of that carrier, this certificate is COMPLETE. Mail it directly to the certificate holder.

If Box 4B, 4C or 5B is checked, this certificate is NOT COMPLETE for purposes of Section 220, Subd. 8 of the NYS Disability and Paid Family Leave Benefits Law. It must be emailed to PAU@wcb.ny.gov or it can be mailed for completion to the Workers' Compensation Board, Plans Acceptance Unit, PO Box 5200, Binghamton, NY 13902-5200.

PART 2. To be completed by the NYS Workers' Compensation Board (Only if Box 4B, 4C or 5B have been checked)

State of New York Workers' Compensation Board

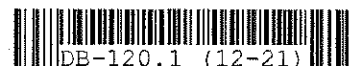
According to information maintained by the NYS Workers' Compensation Board, the above-named employer has complied with the NYS Disability and Paid Family Leave Benefits Law (Article 9 of the Workers' Compensation Law) with respect to all of their employees.

Date Signed _____ By _____
(Signature of Authorized NYS Workers' Compensation Board Employee)

Telephone Number _____ Name and Title _____

Please Note: Only insurance carriers licensed to write NYS disability and paid family leave benefits insurance policies and NYS licensed insurance agents of those insurance carriers are authorized to issue Form DB-120.1. Insurance brokers are NOT authorized to issue this form.

DB-120.1 (12-21)



The undersigned insurance broker or agent represents to the City of New York that the attached Certificate of Insurance is accurate in all material respects.

[Name of broker or agent (typewritten)]

[Address of broker or agent (typewritten)]

[Email address of broker or agent (typewritten)]

[Phone number/Fax number of broker or agent (typewritten)]

Miss

[Name and title of authorized official, broker, or agent (typewritten)]

NOTARY PUBLIC FOR THE STATE OF

My Commission Expires December 15, 2023

(NO TEXT ON THIS PAGE)

OFFICE OF THE COMPTROLLER

CITY OF NEW YORK

CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Pursuant to Labor Law § 220 (3-e), only apprentices who are individually registered in a bona fide program to which the employer contractor is a participant and registered with the New York State Department of Labor, may be paid at the apprentice rates in this schedule. Apprentices who are not so registered must be paid as journey persons in accordance with the trade classification of the work they actually performed.

Apprentice ratios are established to ensure the proper safety, training and supervision of apprentices. A ratio establishes the number of journey workers required for each apprentice in a program and on a job site. Ratios are interpreted as follows: in the case of a 1:1, 1:4 ratio, there must be one journey worker for the first apprentice, and four additional journey workers for each subsequent apprentice.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

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BOILERMAKER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Boilermaker (First Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 65% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$33.12

Boilermaker (Second Year: 1st Six Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 70% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$35.05

Boilermaker (Second Year: 2nd Six Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 75% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$37.01

Boilermaker (Third Year: 1st Six Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 80% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$38.92

Boilermaker (Third Year: 2nd Six Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 85% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$40.87

Boilermaker (Fourth Year: 1st Six Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 90% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$42.82

Boilermaker (Fourth Year: 2nd Six Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 95% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$44.74

(Local #5)

BRICKLAYER

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)

Bricklayer (First 750 Hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 50% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$22.95

Bricklayer (Second 750 Hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 60% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$22.95

Bricklayer (Third 750 Hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 70% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$22.95

Bricklayer (Fourth 750 Hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 80% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$22.95

Bricklayer (Fifth 750 Hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 90% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$22.95

Bricklayer (Sixth 750 Hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 95% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$22.95

(Bricklayer District Council)

CARPENTER

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)

Carpenter (First Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour For Building Apprentice: \$19.55

Supplemental Benefit Rate Per Hour For Building Apprentice: \$16.35

Wage Rate Per Hour For Heavy Apprentice: \$23.37

Supplemental Benefit Rate Per Hour For Heavy Apprentice: \$35.49

Carpenter (Second Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour For Building Apprentice: \$22.55

Supplemental Benefit Rate Per Hour For Building Apprentice: \$17.85

Wage Rate Per Hour For Heavy Apprentice: \$28.97

Supplemental Benefit Rate Per Hour For Heavy Apprentice: \$35.49

Carpenter (Third Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour For Building Apprentice: \$26.80

Supplemental Benefit Rate Per Hour For Building Apprentice: \$21.45

Wage Rate Per Hour For Heavy Apprentice: \$37.35

Supplemental Benefit Rate Per Hour For Heavy Apprentice: \$35.49

Carpenter (Fourth Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour For Building Apprentice: \$34.68

Supplemental Benefit Rate Per Hour For Building Apprentice: \$23.45

Wage Rate Per Hour For Heavy Apprentice: \$45.74

Supplemental Benefit Rate Per Hour For Heavy Apprentice: \$35.49

(Carpenters District Council)

CARPENTER - HIGH RISE CONCRETE FORMS

(Ratio of Apprentice to Journeyman: 1 to 1, 2 to 5)

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Carpenter - High Rise (First Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$18.27

Supplemental Benefit Rate per Hour: \$16.55

Carpenter - High Rise (Second Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$24.70

Supplemental Benefit Rate per Hour: \$16.73

Carpenter - High Rise (Third Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$31.28

Supplemental Benefit Rate per Hour: \$16.95

Carpenter - High Rise (Fourth Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$38.90

Supplemental Benefit Rate per Hour: \$17.20

(Carpenters District Council)

CEMENT MASON

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Cement Mason (First Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$19.57

Supplemental Benefit Rate per Hour: \$15.61

Cement Mason (Second Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$24.40

Supplemental Benefit Rate per Hour: \$15.91

Cement Mason (Third Year)

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$29.68**

Supplemental Benefit Rate per Hour: **\$16.02**

(Local #780)

CEMENT AND CONCRETE WORKER
(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

Cement & Concrete Worker (First 1333 hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 53% of Journeyman's rate

Supplemental Benefit Rate Per Hour: **\$14.79**

Cement & Concrete Worker (Second 1333 hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 69% of Journeyman's rate

Supplemental Benefit Rate Per Hour: **\$19.72**

Cement & Concrete Worker (Last 1334 hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 85% of Journeyman's rate

Supplemental Benefit Rate Per Hour: **\$21.30**

(Cement Concrete Workers District Council)

DERRICKPERSON & RIGGER (STONE)
(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)

Derrickperson & Rigger (stone) - First Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 50% of Journeyman's rate

Supplemental Benefit Rate Per Hour: 50% of Journeyman's rate

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Derrickperson & Rigger (stone) - Second Year: 1st Six Months

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 70% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

Derrickperson & Rigger (stone) - Second Year: 2nd Six Months

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 80% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

Derrickperson & Rigger (stone) - Third Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 90% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

(Local #197)

DOCKBUILDER/PILE DRIVER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Dockbuilder/Pile Driver (First Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: \$23.37

Supplemental Benefit Rate Per Hour: \$35.49

Dockbuilder/Pile Driver (Second Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: \$28.97

Supplemental Benefit Rate Per Hour: \$35.49

Dockbuilder/Pile Driver (Third Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: \$37.35

Supplemental Benefit Rate Per Hour: \$35.49

Dockbuilder/Pile Driver (Fourth Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: \$45.74

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Supplemental Benefit Rate Per Hour: \$35.49

(Carpenters District Council)

ELECTRICIAN

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Electrician (First Term: 0-6 Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$17.25

Supplemental Benefit Rate per Hour: \$14.93

Overtime Supplemental Rate Per Hour: \$16.07

Electrician (First Term: 7-12 Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$17.75

Supplemental Benefit Rate per Hour: \$15.19

Overtime Supplemental Rate Per Hour: \$16.36

Electrician (Second Term: 0-6 Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$18.75

Supplemental Benefit Rate per Hour: \$15.70

Overtime Supplemental Rate Per Hour: \$16.95

Electrician (Second Term: 7-12 Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$19.75

Supplemental Benefit Rate per Hour: \$16.22

Overtime Supplemental Rate Per Hour: \$17.53

Electrician (Third Term: 0-6 Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$20.75

Supplemental Benefit Rate per Hour: \$16.74

Overtime Supplemental Rate Per Hour: \$18.11

Electrician (Third Term: 7-12 Months)

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$21.75**

Supplemental Benefit Rate per Hour: **\$17.26**

Overtime Supplemental Rate Per Hour: **\$18.70**

Electrician (Fourth Term: 0-6 Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$22.75**

Supplemental Benefit Rate per Hour: **\$17.77**

Overtime Supplemental Rate Per Hour: **\$19.28**

Electrician (Fourth Term: 7-12 Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$24.75**

Supplemental Benefit Rate per Hour: **\$18.81**

Overtime Supplemental Rate Per Hour: **\$20.45**

Electrician (Fifth Term: 0-12 Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$26.00**

Supplemental Benefit Rate per Hour: **\$22.06**

Overtime Supplemental Rate Per Hour: **\$23.70**

Electrician (Fifth Term: 13-18 Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$30.50**

Supplemental Benefit Rate per Hour: **\$24.45**

Overtime Supplemental Rate Per Hour: **\$26.38**

Overtime Description

Overtime Wage paid at time and one half the regular rate

(Local #3)

ELEVATOR CONSTRUCTOR

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 2)

Elevator (Constructor) - First Year

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE**

Effective Period: 7/1/2021 - 3/16/2022
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: \$32.76

Effective Period: 3/17/2022 - 6/30/2022
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: \$33.38

Elevator (Constructor) - Second Year

Effective Period: 7/1/2021 - 3/16/2022
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$33.31

Effective Period: 3/17/2022 - 6/30/2022
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$33.96

Elevator (Constructor) - Third Year

Effective Period: 7/1/2021 - 3/16/2022
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: \$34.42

Effective Period: 3/17/2022 - 6/30/2022
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: \$35.10

Elevator (Constructor) - Fourth Year

Effective Period: 7/1/2021 - 3/16/2022
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$35.52

Effective Period: 3/17/2022 - 6/30/2022
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$36.24

(Local #1)

ELEVATOR REPAIR & MAINTENANCE
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)

Elevator Service/Modernization Mechanic (First Year)

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE**

Effective Period: 7/1/2021 - 3/16/2022
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Per Hour: \$32.71

Effective Period: 3/17/2022 - 6/30/2022
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Per Hour: \$33.33

Elevator Service/Modernization Mechanic (Second Year)

Effective Period: 7/1/2021 - 3/16/2022
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Benefit Per Hour: \$33.26

Effective Period: 3/17/2022 - 6/30/2022
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Benefit Per Hour: \$33.90

Elevator Service/Modernization Mechanic (Third Year)

Effective Period: 7/1/2021 - 3/16/2022
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Per Hour: \$34.35

Effective Period: 3/17/2022 - 6/30/2022
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Per Hour: \$35.03

Elevator Service/Modernization Mechanic (Fourth Year)

Effective Period: 7/1/2021 - 3/16/2022
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Benefit Per Hour: \$35.45

Effective Period: 3/17/2022 - 6/30/2022
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Benefit Per Hour: \$36.17

(Local #1)

ENGINEER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 5)

Engineer - First Year

Effective Period: 7/1/2021 - 6/30/2022

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Wage Rate per Hour: **\$25.38**

Supplemental Benefit Rate per Hour: **\$28.51**

Engineer - Second Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$31.72**

Supplemental Benefit Rate per Hour: **\$28.51**

Engineer - Third Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$34.89**

Supplemental Benefit Rate per Hour: **\$28.51**

Engineer - Fourth Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$38.06**

Supplemental Benefit Rate per Hour: **\$28.51**

(Local #15)

ENGINEER - OPERATING

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 5)

Operating Engineer - First Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 40% of Operating Engineer - Road & Heavy Construction V's Rate

Supplemental Benefit Per Hour: **\$24.05**

Operating Engineer - Second Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 50% of Operating Engineer - Road & Heavy Construction V's Rate

Supplemental Benefit Per Hour: **\$24.05**

Operating Engineer - Third Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 60% of Operating Engineer - Road & Heavy Construction V's Rate

Supplemental Benefit Per Hour: **\$24.05**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

(Local #14)

FLOOR COVERER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Floor Coverer (First Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$24.55**

Supplemental Benefit Rate per Hour: **\$16.35**

Floor Coverer (Second Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$27.55**

Supplemental Benefit Rate per Hour: **\$17.85**

Floor Coverer (Third Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$31.80**

Supplemental Benefit Rate per Hour: **\$21.45**

Floor Coverer (Fourth Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$39.68**

Supplemental Benefit Rate per Hour: **\$23.45**

(Carpenters District Council)

GLAZIER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Glazier (First Year)

Effective Period: 7/1/2021 - 6/30/2022

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

Glazier (Second Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

Glazier (Third Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Glazier (Fourth Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 80% of Journeyperson's rate

(Local #1281)

HAZARDOUS MATERIAL HANDLER
(Ratio of Apprentice Journeyperson: 1 to 1, 1 to 3)

Handler (First 1000 Hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 78% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$14.25

Handler (Second 1000 Hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 80% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$14.25

Handler (Third 1000 Hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 83% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$14.25

Handler (Fourth 1000 Hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 89% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$14.25

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

(Local #78)

HEAT & FROST INSULATOR
(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

Heat & Frost Insulator (First Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 40% of Journeyman's rate

Heat & Frost Insulator (Second Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 50% of Journeyman's rate

Heat & Frost Insulator (Third Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 60% of Journeyman's rate

Heat & Frost Insulator (Fourth Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 70% of Journeyman's rate

(Local #12)

HOUSE WRECKER
(TOTAL DEMOLITION)
(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

House Wrecker - First Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$20.20

Supplemental Benefit Rate per Hour: \$10.07

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

House Wrecker - Second Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$22.15**

Supplemental Benefit Rate per Hour: **\$10.07**

House Wrecker - Third Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$23.65**

Supplemental Benefit Rate per Hour: **\$10.07**

House Wrecker - Fourth Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$26.15**

Supplemental Benefit Rate per Hour: **\$10.07**

(Mason Tenders District Council)

IRON WORKER - ORNAMENTAL

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Iron Worker (Ornamental) - First Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$20.63**

Supplemental Benefit Rate per Hour: **\$17.61**

Iron Worker (Ornamental) - Second Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$24.22**

Supplemental Benefit Rate per Hour: **\$18.86**

Iron Worker (Ornamental) - Third Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$27.80**

Supplemental Benefit Rate per Hour: **\$20.12**

Iron Worker (Ornamental) - Fourth Year

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$31.38

Supplemental Benefit Rate per Hour: \$21.38

(Local #580)

IRON WORKER - STRUCTURAL

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 6)

Iron Worker (Structural) - 1st Six Months

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$28.21

Supplemental Benefit Rate per Hour: \$57.12

Iron Worker (Structural) - 7- 18 Months

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$28.81

Supplemental Benefit Rate per Hour: \$57.12

Iron Worker (Structural) - 19 - 36 months

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$29.42

Supplemental Benefit Rate per Hour: \$57.12

(Local #40 and #361)

LABORER (FOUNDATION, CONCRETE, EXCAVATING, STREET PIPE LAYER & COMMON)

(Ratio Apprentice to Journeyman: 1 to 1, 1 to 3)

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - First 1000 hours

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: \$48.63

**Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) -
Second 1000 hours**

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: \$48.63

**Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) -
Third 1000 hours**

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$48.63

**Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) -
Fourth 1000 hours**

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Rate Per Hour: \$48.63

(Local #731)

MARBLE MECHANICS
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Cutters & Setters - First 750 Hours

Effective Period: 7/1/2021 - 6/30/2022
Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

NO BENEFITS PAID DURING THE FIRST TWO MONTHS (PROBATIONARY PERIOD)

Cutters & Setters - Second 750 Hours

Effective Period: 7/1/2021 - 6/30/2022
Wage and Supplemental Rate Per Hour: 45% of Journeyperson's rate

Cutters & Setters - Third 750 Hours

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

Cutters & Setters - Fourth 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 55% of Journeyperson's rate

Cutters & Setters - Fifth 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Cutters & Setters - Sixth 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 65% of Journeyperson's rate

Cutters & Setters - Seventh 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 70% of Journeyperson's rate

Cutters & Setters - Eighth 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Cutters & Setters - Ninth 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 85% of Journeyperson's rate

Cutters & Setters - Tenth 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 95% of Journeyperson's rate

Polishers & Finishers - First 900 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 70% of Journeyperson's rate

NO BENEFITS PAID DURING THE FIRST TWO MONTHS (PROBATIONARY PERIOD)

Polishers & Finishers - Second 900 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 80% of Journeyperson's rate

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Polishers & Finishers - Third 900 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 90% of Journeyperson's rate

(Local #7)

MASON TENDER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Mason Tender - First Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$20.20**

Supplemental Benefit Rate per Hour: **\$10.07**

Mason Tender - Second Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$22.15**

Supplemental Benefit Rate per Hour: **\$10.07**

Mason Tender - Third Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$23.65**

Supplemental Benefit Rate per Hour: **\$10.07**

Mason Tender - Fourth Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$26.15**

Supplemental Benefit Rate per Hour: **\$10.07**

(Local #79)

METALLIC LATHER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Metallic Lather (First Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$21.00**

Supplemental Benefit Rate per Hour: **\$17.87**

Metallic Lather (Second Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$22.00**

Supplemental Benefit Rate per Hour: **\$16.87**

Metallic Lather (Third Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$33.10**

Supplemental Benefit Rate per Hour: **\$21.32**

Metallic Lather (Fourth Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$35.60**

Supplemental Benefit Rate per Hour: **\$21.82**

(Local #46)

MILLWRIGHT

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Millwright (First Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$30.74**

Supplemental Benefit Rate per Hour: **\$35.19**

Millwright (Second Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$36.19**

Supplemental Benefit Rate per Hour: **\$38.89**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Millwright (Third Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$41.64**

Supplemental Benefit Rate per Hour: **\$43.24**

Millwright (Fourth Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$52.54**

Supplemental Benefit Rate per Hour: **\$50.00**

(Local #740)

PAINTER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Painter - Brush & Roller - First Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$17.20**

Supplemental Benefit Rate per Hour: **\$16.67**

Painter - Brush & Roller - Second Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$21.50**

Supplemental Benefit Rate per Hour: **\$21.44**

Painter - Brush & Roller - Third Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$25.80**

Supplemental Benefit Rate per Hour: **\$25.27**

Painter - Brush & Roller - Fourth Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$34.40**

Supplemental Benefit Rate per Hour: **\$32.51**

(District Council of Painters)

PAINTER - METAL POLISHER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Metal Polisher (First Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$16.00**

Supplemental Benefit Rate per Hour: **\$7.36**

New Construction - Wage Rate Per Hour: **\$16.39**

Scaffold Over 34 Feet - Wage Rate Per Hour: **\$18.50**

Metal Polisher (Second Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$17.00**

Supplemental Benefit Rate per Hour: **\$7.36**

New Construction - Wage Rate Per Hour: **\$17.44**

Scaffold Over 34 Feet - Wage Rate Per Hour: **\$19.50**

Metal Polisher (Third Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$18.00**

Supplemental Benefit Rate per Hour: **\$7.36**

New Construction - Wage Rate Per Hour: **\$18.54**

Scaffold Over 34 Feet - Wage Rate Per Hour: **\$20.50**

(Local 8A-28)

PAINTER - STRUCTURAL STEEL

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Painters - Structural Steel (First Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

Painters - Structural Steel (Second Year)

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Painters - Structural Steel (Third Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 80% of Journeyperson's rate

(Local #806)

PAVER AND ROADBUILDER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Paver and Roadbuilder - First Year (Minimum 1000 hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$29.86

Supplemental Benefit Rate per Hour: \$23.55

Paver and Roadbuilder - Second Year (Minimum 1000 hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$31.50

Supplemental Benefit Rate per Hour: \$23.55

(Local #1010)

PLASTERER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

(Each Term is 800 Hours.)

Plasterer - First Term

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 55% of Journeyperson's rate

Supplemental Rate Per Hour: \$17.48

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Plasterer - Second Term

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: \$18.63

Plasterer - Third Term

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$20.93

Plasterer - Fourth Term

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$22.10

(Local #262)

PLASTERER - TENDER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Plasterer Tender - First Year

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate per Hour: \$20.20
Supplemental Benefit Rate per Hour: \$10.07

Plasterer Tender - Second Year

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate per Hour: \$22.15
Supplemental Benefit Rate per Hour: \$10.07

Plasterer Tender - Third Year

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate per Hour: \$23.65
Supplemental Benefit Rate per Hour: \$10.07

Plasterer Tender - Fourth Year

Effective Period: 7/1/2021 - 6/30/2022

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Wage Rate per Hour: **\$26.15**

Supplemental Benefit Rate per Hour: **\$10.07**

(Local #79)

PLUMBER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Plumber - First Year: 1st Six Months

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$16.78**

Supplemental Benefit Rate per Hour: **\$5.43**

Plumber - First Year: 2nd Six Months

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$19.78**

Supplemental Benefit Rate per Hour: **\$6.43**

Plumber - Second Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$28.36**

Supplemental Benefit Rate per Hour: **\$21.19**

Plumber - Third Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$30.46**

Supplemental Benefit Rate per Hour: **\$21.19**

Plumber - Fourth Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$33.31**

Supplemental Benefit Rate per Hour: **\$21.19**

Plumber - Fifth Year: 1st Six Months

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$34.71**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Supplemental Benefit Rate per Hour: \$21.19

Plumber - Fifth Year: 2nd Six Months

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$46.78

Supplemental Benefit Rate per Hour: \$21.19

(Plumbers Local #1)

**POINTER, WATERPROOFER, CAULKER, SANDBLASTER,
STEAMBLASTER**

(Exterior Building Renovation)

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - First Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$28.92

Supplemental Benefit Rate per Hour: \$14.81

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Second Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$32.58

Supplemental Benefit Rate per Hour: \$19.86

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Third Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$37.63

Supplemental Benefit Rate per Hour: \$23.61

Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Fourth Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$45.44

Supplemental Benefit Rate per Hour: \$24.61

(Bricklayer District Council)

ROOFER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)

Roofer - First Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 35% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$3.51

Roofer - Second Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 50% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$17.54

Roofer - Third Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 60% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$20.99

Roofer - Fourth Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 75% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$26.18

(Local #8)

SHEET METAL WORKER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Sheet Metal Worker (0-6 Months)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: 25% of Journeyperson's rate

Supplemental Rate Per Hour: \$6.76

Sheet Metal Worker (7-18 Months)

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 35% of Journeyperson's rate
Supplemental Rate Per Hour: \$19.55

Sheet Metal Worker (19-30 Months)

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 45% of Journeyperson's rate
Supplemental Rate Per Hour: \$26.65

Sheet Metal Worker (31-36 Months)

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$31.50

Sheet Metal Worker (37-42 Months)

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$31.50

Sheet Metal Worker (43-48 Months)

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$38.78

Sheet Metal Worker (49-54 Months)

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$38.78

Sheet Metal Worker (55-60 Months)

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: \$43.65

(Local #28)

SIGN ERECTOR

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

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CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Sign Erector - First Year: 1st Six Months

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 35% of Journeyperson's rate
Supplemental Rate Per Hour: \$16.51

Sign Erector - First Year: 2nd Six Months

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: \$18.74

Sign Erector - Second Year: 1st Six Months

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 45% of Journeyperson's rate
Supplemental Rate Per Hour: \$20.96

Sign Erector - Second Year: 2nd Six Months

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: \$23.21

Sign Erector - Third Year: 1st Six Months

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$31.44

Sign Erector - Third Year: 2nd Six Months

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: \$34.20

Sign Erector - Fourth Year: 1st Six Months

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: \$37.76

Sign Erector - Fourth Year: 2nd Six Months

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$40.62

Sign Erector - Fifth Year

Effective Period: 7/1/2021 - 6/30/2022

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CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$43.44

Sign Erector - Sixth Year

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: \$46.27

(Local #137)

STEAMFITTER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Steamfitter - First Year

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate and Supplemental Per Hour: 40% of Journeyperson's rate

Steamfitter - Second Year

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate and Supplemental Rate Per Hour: 50% of Journeyperson's rate.

Steamfitter - Third Year

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate and Supplemental Rate per Hour: 65% of Journeyperson's rate.

Steamfitter - Fourth Year

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate and Supplemental Rate Per Hour: 80% of Journeyperson's rate.

Steamfitter - Fifth Year

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate and Supplemental Rate Per Hour: 85% of Journeyperson's rate.

(Local #638)

STEAMFITTER - REFRIGERATION & AIR CONDITIONER (Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

Refrigeration & Air Conditioner (First Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$20.75**

Supplemental Benefit Rate per Hour: **\$12.99**

Refrigeration & Air Conditioner (Second Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$25.04**

Supplemental Benefit Rate per Hour: **\$14.23**

Refrigeration & Air Conditioner (Third Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$29.17**

Supplemental Benefit Rate per Hour: **\$15.53**

Refrigeration & Air Conditioner (Fourth Year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$35.22**

Supplemental Benefit Rate per Hour: **\$17.29**

(Local #638-B)

STONE MASON - SETTER (Ratio Apprentice of Journeyman: 1 to 1, 1 to 2)

Stone Mason - Setters - First 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 50% of Journeyman's rate

Stone Mason - Setters - Second 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

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CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Third 750 Hours

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Fourth 750 Hours

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Fifth 750 Hours

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

Stone Mason - Setters - Sixth 750 Hours

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate Per Hour: 100% of Journeyperson's rate
Supplemental Rate Per Hour: 50% of Journeyperson's rate

(Bricklayers District Council)

TAPER

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Drywall Taper - First Year

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate per Hour: \$20.97
Supplemental Benefit Rate per Hour: \$13.55

Drywall Taper - Second Year

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate per Hour: \$24.24
Supplemental Benefit Rate per Hour: \$20.31

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Drywall Taper - Third Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$29.08**

Supplemental Benefit Rate per Hour: **\$22.06**

Drywall Taper - Fourth Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$38.78**

Supplemental Benefit Rate per Hour: **\$25.56**

(Local #1974)

TILE LAYER - SETTER

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)

Tile Layer - Setter - First 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 35% of Journeyman's rate

Tile Layer - Setter - Second 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 40% of Journeyman's rate

Tile Layer - Setter - Third 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 50% of Journeyman's rate

Tile Layer - Setter - Fourth 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 55% of Journeyman's rate

Tile Layer - Setter - Fifth 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 60% of Journeyman's rate

Tile Layer - Setter - Sixth 750 Hours

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE**

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 65% of Journeyperson's rate

Tile Layer - Setter - Seventh 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 70% of Journeyperson's rate

Tile Layer - Setter - Eighth 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Tile Layer - Setter - Ninth 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 80% of Journeyperson's rate

Tile Layer - Setter - Tenth 750 Hours

Effective Period: 7/1/2021 - 6/30/2022

Wage and Supplemental Rate Per Hour: 90% of Journeyperson's rate

(Local #7)

TIMBERPERSON

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Timberperson - First Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: \$21.42

Supplemental Rate Per Hour: \$35.22

Timberperson - Second Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: \$26.53

Supplemental Rate Per Hour: \$35.22

Timberperson - Third Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: \$34.18

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CONSTRUCTION APPRENTICE PREVAILING WAGE SCHEDULE

Supplemental Rate Per Hour: \$35.22

Timberperson - Fourth Year

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate Per Hour: \$41.84

Supplemental Rate Per Hour: \$35.22

(Local #1536)

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE**

LABOR LAW ARTICLE 8 - NYC PUBLIC WORKS

Workers, Laborers and Mechanics employed on a public work project must receive not less than the prevailing rate of wage and benefits for the classification of work performed by each upon such public work. Pursuant to New York Labor Law Article 8 the Comptroller of the City of New York has promulgated this schedule solely for Workers, Laborers and Mechanics engaged by private contractors on New York City public work projects. Prevailing rates are required to be annexed to and form part of the public work contract pursuant to Labor Law section 220 (3).

This schedule is a compilation of separate determinations of the prevailing rate of wage and supplements made by the Comptroller for each trade classification listed herein pursuant to Labor Law section 220 (5). The source of the wage and supplement rates, whether a collective bargaining agreement, survey data or other, is listed at the end of each classification.

Agency Chief Contracting Officers should contact the Bureau of Labor Law's Classification Unit with any questions concerning trade classifications, prevailing rates or prevailing practices with respect to procurement on New York City public work contracts. Contractors are advised to review the Comptroller's Prevailing Wage Schedule before bidding on public work contracts. Contractors with questions concerning trade classifications, prevailing rates or prevailing practices with respect to public work contracts in the procurement stage must contact the contracting agency responsible for the procurement.

Any error as to compensation under the prevailing wage law or other information as to trade classification, made by the contracting agency in the contract documents or in any other communication, will not preclude a finding against the contractor of prevailing wage violation.

Any questions concerning trade classifications, prevailing rates or prevailing practices on New York City public work contracts that have already been awarded may be directed to the Bureau of Labor Law's Classification Unit by calling (212) 669-4443. All callers must have the agency name and contract registration number available when calling with questions on public work contracts. Please direct all other compliance issues to: Bureau of Labor Law, Attn: Wasyl Kinach, P.E., Office of the Comptroller, 1 Centre Street, Room 651, New York, N.Y. 10007; Fax (212) 669-4002.

Pursuant to Labor Law § 220 (3-a) (a), the appropriate schedule of prevailing wages and benefits must be posted in a prominent and accessible place at all public work sites along with the Construction Poster provided on our web site at comptroller.nyc.gov/wages. In addition, covered employees must be given the appropriate schedule of prevailing wages and benefits along with the Worker Notice provided on our web site at the time the public work project begins, and with the first paycheck to each such employee after July first of each year.

This schedule is applicable to work performed during the effective period, unless otherwise noted. Changes to this schedule are published on our web site comptroller.nyc.gov/wages. Contractors must pay the wages and supplements in effect when the worker, laborer, mechanic performs the work. Preliminary schedules for future one-year periods appear in the City Record on or about June 1 each succeeding year. Final schedules appear on or about July 1 in the City Record and on our web site comptroller.nyc.gov/wages.

Prevailing rates and ratios for apprentices are published in the Construction Apprentice Prevailing Wage Schedule. Pursuant to Labor Law § 220 (3-e), only apprentices who are individually registered in a bona fide program to which the employer contractor is a participant, registered with the

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CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

New York State Department of Labor, may be paid at the apprentice rates. Apprentices who are not so registered must be paid as journey persons.

New York City public work projects awarded pursuant to a Project Labor Agreement (“PLA”) in accordance with Labor Law section 222 may have different labor standards for shift, premium and overtime work. Please refer to the PLA’s pre-negotiated labor agreements for wage and benefit rates applicable to work performed outside of the regular workday. More information is available at the Mayor’s Office of Contract Services (MOCS) web page at:

<https://www1.nyc.gov/site/mocs/legal-forms/project-labor-agreements.page>

All the provisions of Labor Law Article 8 remain applicable to PLA work including, but not limited to, the enforcement of prevailing wage requirements by the Comptroller in accordance with the trade classifications in this schedule; however, we will enforce shift, premium, overtime and other non-standard rates as they appear in a project’s pre-negotiated labor agreement.

In order to meet their obligation to provide prevailing supplemental benefits to each covered employee, employers must either:

- 1) Provide bona fide fringe benefits which cost the employer no less than the prevailing supplemental benefits rate; or
- 2) Supplement the employee’s hourly wage by an amount no less than the prevailing supplemental benefits rate; or
- 3) Provide a combination of bona fide fringe benefits and wage supplements which cost the employer no less than the prevailing supplemental benefits rate in total.

Although prevailing wage laws do not require employers to provide bona fide fringe benefits (as opposed to wage supplements) to their employees, other laws may. For example, the Employee Retirement Income Security Act, 29 U.S.C. § 1001 et seq., the Patient Protection and Affordable Care Act, 42 U.S.C. § 18001 et seq., and the New York City Paid Sick Leave Law, N.Y.C. Admin. Code § 20-911 et seq., require certain employers to provide certain benefits to their employees. Labor agreements to which employers are a party may also require certain benefits. The Comptroller’s Office does not enforce these laws or agreements.

Employers must provide prevailing supplemental benefits at the straight time rate for each hour worked unless otherwise noted in the classification.

Paid Holidays, Vacation and Sick Leave when listed must be paid or provided in addition to the prevailing hourly supplemental benefit rate.

For more information, please refer to the Comptroller’s Prevailing Wage Law Regulations in Title 44 of the Rules of the City of New York, Chapter 2, available at comptroller.nyc.gov/wages.

Wasył Kinach, P.E.
Director of Classifications
Bureau of Labor Law

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

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ASBESTOS HANDLER SEE HAZARDOUS MATERIAL HANDLER

BLASTER

Blaster

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$56.71**

Supplemental Benefit Rate per Hour: **\$48.63**

Blaster - Hydraulic Trac Drill

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$50.85**

Supplemental Benefit Rate per Hour: **\$48.63**

Blaster - Wagon: Air Trac: Quarry Bar: Drillrunners

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$50.02**

Supplemental Benefit Rate per Hour: **\$48.63**

Blaster - Journeyperson

(Laborer, Chipper/Jackhammer including Walk Behind Self Propelled Hydraulic Asphalt and Concrete Breakers and Hydro (Water) Demolition, Powder Carrier, Hydraulic Chuck Tender, Chuck Tender and Nipper)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$43.50**

Supplemental Benefit Rate per Hour: **\$48.63**

Blaster - Magazine Keepers: (Watch Person)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$21.75**

Supplemental Benefit Rate per Hour: **\$48.63**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays

Labor Day
Thanksgiving Day

Shift Rates

When two shifts are employed, single time rate shall be paid for each shift. When three shifts are found necessary, each shift shall work seven and one half hours (7 ½), but shall be paid for eight (8) hours of labor, and be permitted one half hour for lunch.

(Local #731)

BOILERMAKER

Boilermaker

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$63.38

Supplemental Benefit Rate per Hour: \$46.67

Supplemental Note: For time and one half overtime - \$69.56 For double overtime - \$92.44

Overtime Description

For Repair and Maintenance work:

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

For New Construction work:

Double time the regular rate after an 8 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day

Quadruple time the regular rate for work on the following holiday(s).
Labor Day

Paid Holidays

Good Friday
Day after Thanksgiving
Day before Christmas
Day before New Year's Day

Shift Rates

On jobs requiring two (2) or three (3) shifts, the first shift shall work eight (8) hours at the regular straight-time hourly rate. The second shift shall work eight (8) hours and receive eight hours at the regular straight time hourly rate plus two dollars (\$2.00) per hour. The third shift shall work eight (8) hours and receive eight hours at the regular straight time hourly rate plus two dollars and twenty-five cents (\$2.25) per hour.

(Local #5)

BRICKLAYER

Bricklayer

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$57.64**

Supplemental Benefit Rate per Hour: **\$35.95**

Overtime Description

Time and one half the regular rate after a 7 hour day. If working on a job that is predominately Pointer, Cleaner, Caulker work, then Time and one half the regular rate after an 8 hour day.

Overtime

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates

The second shift wage rate shall be a 15% wage premium with no premium for supplemental benefits. There must be a first shift in order to work a second shift. When it is not possible to conduct alteration or repair work during regular working hours in a building occupied by tenants, eight hours will be paid at straight time rate for seven hours of work.

(Bricklayer District Council)

CARPENTER - BUILDING COMMERCIAL

Building Commercial

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$54.75**

Supplemental Benefit Rate per Hour: **\$47.13**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays
None

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Shift Rates

The second shift will receive one hour at the double time rate of pay for the last hour of the shift; eight hours pay for seven hours of work, nine hours pay for eight hours of work. There must be a first shift in order to work a second shift. When it is not possible to conduct alteration or repair work during regular working hours in a building occupied by tenants, the rule for the second shift will apply.

(Carpenters District Council)

CARPENTER - HEAVY CONSTRUCTION WORK

(Construction of Engineered Structures and Building Foundations including all form work)

Heavy Construction Work

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$56.93**

Supplemental Benefit Rate per Hour: **\$53.49**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

Off shift work commencing between 5:00 P.M. and 11:00 P.M. shall work eight and one half hours allowing for one half hour for lunch. The wage rate shall be 113% of the straight time hourly wage rate. When two (2) or more shifts of Carpenters are employed, single time will be paid for each shift.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

(Carpenters District Council)

CARPENTER - HIGH RISE CONCRETE FORMS **(Excludes Engineered Structures and Building Foundations)**

Carpenter High Rise A

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$50.78**

Supplemental Benefit Rate per Hour: **\$44.44**

Carpenter High Rise B

Carpenter High Rise B worker is excluded from high risk operations such as erection decking, perimeter debris netting, leading edge work, self-climbing form systems, and the installation of cocoon systems unless directly supervised by a Carpenter High Rise A worker.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$40.19**

Supplemental Benefit Rate per Hour: **\$17.75**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE**

The second shift wage rate shall be 113% of the straight time hourly wage rate. However, any shift beginning after 5:00 P.M. shall be paid at time and one half the regular hourly rate. There must be a first shift in order to work a second shift. When it is not possible to conduct alteration or repair work during regular working hours in a building occupied by tenants, the rule for the second shift will apply.

(Carpenters District Council)

CARPENTER - SIDEWALK SHED, SCAFFOLD AND HOIST

Carpenter - Hod Hoist

(Assisted by Mason Tender)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$52.00**

Supplemental Benefit Rate per Hour: **\$47.40**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

Shift Rates

The second shift will receive 112% of the straight time hourly rate. Benefit fund contributions shall be paid at the straight time rate. There must be a first shift in order to work a second shift. When it is not possible to conduct alteration or repair work during regular working hours in a building occupied by tenants, the rule for the second shift will apply.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

(Carpenters District Council)

CARPENTER - WOOD WATER STORAGE TANK

Tank Mechanic

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$35.69**

Supplemental Benefit Rate per Hour: **\$22.24**

Tank Helper

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$28.23**

Supplemental Benefit Rate per Hour: **\$22.24**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Time and one half the regular rate for work on a holiday plus the day's pay.

Paid Holidays

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Thanksgiving Day

Day after Thanksgiving

1/2 day on Christmas Eve if work is performed in the A.M.

Christmas Day

1/2 day on New Year's Eve if work is performed in the A.M.

Vacation

Employed for one (1) year.....one (1) week vacation (40 hours)

Employed for three (3) years.....two (2) weeks vacation (80 hours)

Employed for more than twenty (20) years.....three (3) weeks vacation (120 hours)

SICK LEAVE:

Two (2) sick days after being employed for twenty (20) years.

(Carpenters District Council)

CEMENT & CONCRETE WORKER

Cement & Concrete Worker

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$45.28**

Supplemental Benefit Rate per Hour: **\$30.20**

Supplemental Note: \$34.20 on Saturdays; \$38.20 on Sundays & Holidays

Cement & Concrete Worker - (Hired after 2/6/2016)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$34.80**

Supplemental Benefit Rate per Hour: **\$22.20**

Supplemental Note: \$24.20 on Saturdays; \$26.20 on Sundays & Holidays

Overtime Description

Time and one half the regular rate after 7 hour day (time and one half the regular rate after an 8 hour day when working with Dockbuilders on pile cap forms and for work below street level to the top of the foundation wall, not to exceed 2 feet or 3 feet above the sidewalk-brick shelf, when working on the foundation and structure.)

Overtime

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

1/2 day before Christmas Day

1/2 day before New Year's Day

Shift Rates

On shift work extending over a twenty-four hour period, all shifts are paid at straight time.

(Cement & Concrete Workers District Council 16)

CEMENT MASON

Cement Mason

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$45.77**

Supplemental Benefit Rate per Hour: **\$41.01**

Supplemental Note: Supplemental benefit time and one half rate: \$71.97; Double time rate: double the base supplemental benefit rate.

Overtime Description

Time and one-half the regular rate after an 8 hour day, double time the regular rate after 10 hours. Time and one-half the regular rate on Saturday, double time the regular rate after 10 hours. Double time the regular rate on Sunday. Four Days a week at Ten (10) hours straight time is allowed.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

Any worker who reports to work on Christmas Eve or New Year's Eve pursuant to his employer's instruction shall be entitled to three (3) hours afternoon pay without working.

Shift Rates

For off shift work, (at times other than the regular 7:00 A.M. to 3:30 P.M. work day) a cement mason shall be paid at the regular hourly rate plus a 25% per hour differential.

(Local #780) (BCA)

CORE DRILLER

Core Driller

Effective Period: 7/1/2021 - 10/17/2021

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Wage Rate per Hour: **\$41.74**
Supplemental Benefit Rate per Hour: **\$29.40**

Effective Period: 10/18/2021 - 6/30/2022
Wage Rate per Hour: **\$42.27**
Supplemental Benefit Rate per Hour: **\$30.60**

Core Driller Helper

Effective Period: 7/1/2021 - 10/17/2021
Wage Rate per Hour: **\$32.92**
Supplemental Benefit Rate per Hour: **\$29.40**

Effective Period: 10/18/2021 - 6/30/2022
Wage Rate per Hour: **\$33.47**
Supplemental Benefit Rate per Hour: **\$30.60**

Core Driller Helper(Third year in the industry)

Effective Period: 7/1/2021 - 10/17/2021
Wage Rate per Hour: **\$29.63**
Supplemental Benefit Rate per Hour: **\$29.40**

Effective Period: 10/18/2021 - 6/30/2022
Wage Rate per Hour: **\$30.12**
Supplemental Benefit Rate per Hour: **\$30.60**

Core Driller Helper (Second year in the industry)

Effective Period: 7/1/2021 - 10/17/2021
Wage Rate per Hour: **\$26.34**
Supplemental Benefit Rate per Hour: **\$29.40**

Effective Period: 10/18/2021 - 6/30/2022
Wage Rate per Hour: **\$26.78**
Supplemental Benefit Rate per Hour: **\$30.60**

Core Driller Helper (First year in the industry)

Effective Period: 7/1/2021 - 10/17/2021
Wage Rate per Hour: **\$23.04**
Supplemental Benefit Rate per Hour: **\$29.40**

Effective Period: 10/18/2021 - 6/30/2022
Wage Rate per Hour: **\$23.43**
Supplemental Benefit Rate per Hour: **\$30.60**

Overtime Description

Time and one half the regular rate for work on a holiday plus Holiday pay when worked.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Time and one half the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Shift Rates

When two (2) or more shifts are employed, single time shall be paid for each shift, but those employees employed on a shift other than from 8:00 A.M. to 5:00 P.M. shall, in addition, receive two dollars (\$2.00) per hour differential for each hour worked. When three (3) shifts are needed, each shift shall work seven and one-half (7 ½) hours paid for eight (8) hours of labor and be permitted one-half (½) hour for mealtime.

(Carpenters District Council)

DERRICKPERSON AND RIGGER

Derrick Person & Rigger

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$53.99**

Supplemental Benefit Rate per Hour: **\$55.10**

Supplemental Note: The above supplemental rate applies for work performed in Manhattan, Bronx, Brooklyn and Queens. \$56.52 - For work performed in Staten Island.

Derrick Person & Rigger - Site Work

Assists the Stone Mason-Setter in the setting of stone and paving stone.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$44.86**

Supplemental Benefit Rate per Hour: **\$43.37**

Overtime Description

The first two hours of overtime on weekdays and the first seven hours of work on Saturdays are paid at time and one half for wages and supplemental benefits. All additional overtimes is paid at double time for wages and supplemental benefits. Deduct \$1.42 from the Staten Island hourly benefits rate before computing overtime.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Overtime

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
Washington's Birthday
Good Friday
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.

(Local #197)

DIVER

Diver (Marine)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$71.80

Supplemental Benefit Rate per Hour: \$53.49

Diver Tender (Marine)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$51.34

Supplemental Benefit Rate per Hour: \$53.49

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates

When three shifts are utilized each shift shall work seven and one half-hours (7 1/2 hours) and paid for 8 hours, allowing for one half hour for lunch.

(Carpenters District Council)

DOCKBUILDER - PILE DRIVER

Dockbuilder - Pile Driver

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$56.93**

Supplemental Benefit Rate per Hour: **\$53.49**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays
None

Shift Rates

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Off shift work commencing between 5:00 P.M. and 11:00 P.M. shall work eight and one half hours allowing for one half hour for lunch. The wage rate shall be 113% of the straight time hourly wage rate.

(Carpenters District Council)

DRIVER: TRUCK (TEAMSTER)

Driver - Dump Truck

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$43.83**

Supplemental Benefit Rate per Hour: **\$51.55**

Supplemental Note: Over 40 hours worked: at time and one half rate - \$22.50; at double time rate - \$30.00

Driver - Tractor Trailer

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$46.12**

Supplemental Benefit Rate per Hour: **\$51.50**

Supplemental Note: Over 40 hours worked: at time and one half rate - \$22.50; at double time rate - \$30.00

Driver - Euclid & Turnapull Operator

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$46.68**

Supplemental Benefit Rate per Hour: **\$51.50**

Supplemental Note: Over 40 hours worked: at time and one half rate - \$22.50; at double time rate - \$30.00

Overtime Description

For Paid Holidays: Holiday pay for all holidays shall be prorated based two hours per day for each day worked in the holiday week, not to exceed 8 hours of holiday pay. For Thanksgiving week, the prorated share shall be 5 1/3 hours of holiday pay for each day worked in Thanksgiving week.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates

Off shift work commencing between 6:00 P.M. and 4:30 A.M. shall work eight and one half (8 1/2) hours allowing for one half hour for lunch and receive 9 hours pay for 8 hours of work.

Driver Redi-Mix (Sand & Gravel)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$40.89**

Supplemental Benefit Rate per Hour: **\$47.01**

Supplemental Note: Over 40 hours worked: time and one half rate \$18.01; double time rate \$24.01

Overtime Description

For Paid Holidays: Employees who do not work on a contractual holiday shall be compensated two (2) hours extra pay in straight time wages and benefits for every day on which the Employee does not pass up a day's work during the calendar week (Sunday through Saturday) of the holiday, up to a maximum of ten (10) hours in wages and eight (8) hours in benefit contributions for the holiday

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

President's Day
Columbus Day
Veteran's Day

Triple time the regular rate for work on the following holiday(s).

New Year's Day
Memorial Day
Independence Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Thanksgiving Day
Christmas Day

(Local #282)

ELECTRICIAN

(Including installation of low voltage cabling carrying data, video and/or voice on building construction/alteration/renovation projects.)

Electrician "A" (Regular Day / Day Shift)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$58.00**

Supplemental Benefit Rate per Hour: **\$54.86**

* Supplemental Note: See Supplemental Benefit Rate per Hour Note below

Electrician "A" (Regular Day Overtime after 7 hrs / Day Shift Overtime after 8 hrs)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$87.00**

Supplemental Benefit Rate per Hour: **\$56.73**

* Supplemental Note: See Supplemental Benefit Rate per Hour Note below

Electrician "A" (Swing Shift)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$68.05**

Supplemental Benefit Rate per Hour: **\$62.39**

* Supplemental Note: See Supplemental Benefit Rate per Hour Note below

Electrician "A" (Swing Shift Overtime after 7.5 hours)

Effective Period: 7/1/2021 - 6/30/2022

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Wage Rate per Hour: **\$102.08**

Supplemental Benefit Rate per Hour: **\$64.58**

* Supplemental Note: See Supplemental Benefit Rate per Hour Note below

Electrician "A" (Graveyard Shift)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$76.23**

Supplemental Benefit Rate per Hour: **\$68.74**

* Supplemental Note: See Supplemental Benefit Rate per Hour Note below

Electrician "A" (Graveyard Shift Overtime after 7 hours)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$114.35**

Supplemental Benefit Rate per Hour: **\$71.19**

* Supplemental Note: See Supplemental Benefit Rate per Hour Note below

*** Supplemental Benefit Rate per Hour Note**

In addition to the Supplemental Benefit Rates per Hour listed above, the employer must provide an additional 6.2% of taxable gross pay earned on covered work only. This additional Supplemental Benefit Rate will terminate when the employee has contributed the maximum annual Social Security tax required by law, on all work performed.

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on a holiday.

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

Shift Rates

For multiple shifts of temporary light and/or power, the temporary light and/or power employee shall be paid for 8 hours at the straight time rate. For three or less workers performing 8 hours temporary light and/or power the supplemental benefit rate is \$21.86 - See * Supplemental Benefit Rate per Hour Note above.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Electrician "M" (First 8 hours)

"M" rated work shall be defined as jobbing: electrical work of limited duration and scope, also consisting of repairs and/or replacement of electrical and tele-data equipment. Includes all work necessary to retrofit, service, maintain and repair all kinds of lighting fixtures and local lighting controls and washing and cleaning of foregoing fixtures.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$30.50**

Supplemental Benefit Rate per Hour: **\$24.45**

First and Second Year "M" Wage Rate Per Hour: **\$26.00**

First and Second Year "M" Supplemental Rate: **\$22.06**

Electrician "M" (Overtime After First 8 hours)

"M" rated work shall be defined as jobbing: electrical work of limited duration and scope, also consisting of repairs and/or replacement of electrical and tele-data equipment. Includes all work necessary to retrofit, service, maintain and repair all kinds of lighting fixtures and local lighting controls and washing and cleaning of foregoing fixtures.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$45.75**

Supplemental Benefit Rate per Hour: **\$26.38**

First and Second Year "M" Wage Rate Per Hour: **\$39.00**

First and Second Year "M" Supplemental Rate: **\$23.70**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

(Local #3)

ELECTRICIAN - ALARM TECHNICIAN

(Scope of Work - Inspect, test, repair, and replace defective, malfunctioning, or broken devices, components and controls of Fire, Burglar and Security Systems)

Alarm Technician

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$33.90**

Supplemental Benefit Rate per Hour: **\$18.43**

Supplemental Note: \$16.80 only after 8 hours worked in a day

Overtime Description

Time and one half the regular rate for work on the following holidays: Columbus Day, Veterans Day, Day after Thanksgiving.

Double time the regular rate for work on the following holidays: New Year's day, Martin Luther King Jr. Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas Day.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Paid Holidays

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Shift Rates

Night Differential is based upon a ten percent (10%) differential between the hours of 4:00 P.M. and 12:30 A.M. and a fifteen percent (15%) differential for the hours 12:00 A.M. to 8:30 A.M.

Vacation

At least 1 year of employment.....ten (10) days

5 years or more of employment.....fifteen (15) days

10 years of employment.....twenty (20) days

Plus one Personal Day per year

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Sick Days:

One day per Year. Up to 4 vacation days may be used as sick days.

(Local #3)

ELECTRICIAN-STREET LIGHTING WORKER

Electrician - Electro Pole Electrician

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$58.00**

Supplemental Benefit Rate per Hour: **\$56.83**

* Supplemental Note: See Supplemental Benefit Rate per Hour Note below

Electrician - Electro Pole Foundation Installer

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$43.16**

Supplemental Benefit Rate per Hour: **\$42.15**

* Supplemental Note: See Supplemental Benefit Rate per Hour Note below

Electrician - Electro Pole Maintainer

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$37.11**

Supplemental Benefit Rate per Hour: **\$38.04**

* Supplemental Note: See Supplemental Benefit Rate per Hour Note below

*** Supplemental Benefit Rate per Hour Note**

In addition to the Supplemental Benefit Rates per Hour listed above, the employer must provide an additional 6.2% of taxable gross pay earned on covered work only. This additional Supplemental Benefit Rate will terminate when the employee has contributed the maximum annual Social Security tax required by law, on all work performed.

Overtime Description

Electrician - Electro Pole Electrician: Time and one half the regular rate after a 7 hour day and after 5 consecutive days worked per week.

Electrician - Electro Pole Foundation Installer: Time and one half the regular rate after 8 hours within a 24 hour period and Saturday and Sunday.

Electrician - Electro Pole Maintainer: Time and one half the regular rate after a 7 hour day and after 5 consecutive days worked per week. Saturdays and Sundays may be used as a make-up day at straight time when a day is lost during the week to inclement weather.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

Martin Luther King Jr. Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

(Local #3)

ELEVATOR CONSTRUCTOR

Elevator Constructor

Effective Period: 7/1/2021 - 3/16/2022

Wage Rate per Hour: **\$72.29**

Supplemental Benefit Rate per Hour: **\$38.29**

Effective Period: 3/17/2022 - 6/30/2022

Wage Rate per Hour: **\$75.14**

Supplemental Benefit Rate per Hour: **\$39.10**

Overtime Description

For New Construction: work performed after an 8 hour day, Saturday, Sunday or between 4:30pm and 7:00am shall be paid at double time rate.

Existing buildings: work performed after an 8 hour day, Saturday, Sunday or between 5:30pm and 7:00 am shall be paid time and one half.

Overtime

Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Day after Thanksgiving
Christmas Day

Vacation

Employer contributes 8% of regular basic hourly rate as vacation pay for employees with more than 15 years of service, and 6% for employees with 5 to 15 years of service, and 4% for employees with less than 5 years of service.

(Local #1)

ELEVATOR REPAIR & MAINTENANCE

Elevator Service/Modernization Mechanic

Effective Period: 7/1/2021 - 3/16/2022

Wage Rate per Hour: **\$56.77**

Supplemental Benefit Rate per Hour: **\$38.19**

Effective Period: 3/17/2022 - 6/30/2022

Wage Rate per Hour: **\$59.09**

Supplemental Benefit Rate per Hour: **\$39.00**

Overtime Description

For Scheduled Service Work: Double time - work scheduled in advance by two or more workers performed on Sundays, Holidays, and between midnight and 7:00am.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Time and one half the regular rate for work on a holiday plus the day's pay.

Paid Holidays

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Shift Rates

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE**

Afternoon shift - regularly hourly rate plus a (15%) fifteen percent differential. Graveyard shift - time and one half the regular rate.

Vacation

Employer contributes 8% of regular basic hourly rate as vacation pay for employees with more than 15 years of service, and 6% for employees with 5 to 15 years of service, and 4% for employees with less than 5 years of service.

(Local #1)

ENGINEER

Engineer - Heavy Construction Operating Engineer I

Cherry pickers 20 tons and over and Loaders (rubber tired and/or tractor type with a manufacturer's minimum rated capacity of six cubic yards and over).

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$74.65**

Supplemental Benefit Rate per Hour: **\$42.06**

Supplemental Note: \$76.72 on overtime

Shift Wage Rate: **\$119.44**

Engineer - Heavy Construction Operating Engineer II

Backhoes, Basin Machines, Groover, Mechanical Sweepers, Bobcat, Boom Truck, Barrier Transport (Barrier Mover) & machines of similar nature. Operation of Churn Drills and machines of a similar nature, Stetco Silent Hoist and machines of similar nature, Vac-Alls, Meyers Machines, John Beam and machines of a similar nature, Ross Carriers and Travel Lifts and machines of a similar nature, Bulldozers, Scrapers and Turn-a-Pulls: Tugger Hoists (Used exclusively for handling excavated material); Tractors with attachments, Hyster and Roustabout Cranes, Cherry pickers. Austin Western, Grove and machines of a similar nature, Scoopmobiles, Monorails, Conveyors, Trenchers: Loaders-Rubber Tired and Tractor: Barber Greene and Eimco Loaders and Eimco Backhoes; Mighty Midget and similar breakers and Tampers, Curb and Gutter Pavers and Motor Patrol, Motor Graders and all machines of a similar nature. Locomotives 10 Tons or under. Mini-Max, Break-Tech and machines of a similar nature; Milling machines, robotic and demolition machines and machines of a similar nature, shot blaster, skid steer machines and machines of a similar nature including bobcat, pile rig rubber-tired excavator (37,000 lbs. and under), 2 man auger.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$72.40**

Supplemental Benefit Rate per Hour: **\$42.06**

Supplemental Note: \$76.72 on overtime

Shift Wage Rate: **\$115.84**

Engineer - Heavy Construction Operating Engineer III

Minor Equipment such as Tractors, Post Hole Diggers, Ditch Witch (Walk Behind), Road Finishing Machines, Rollers five tons and under, Tugger Hoists, Dual Purpose Trucks, Fork Lifts, and Dempsey Dumpers, Fireperson.

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE**

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$68.62

Supplemental Benefit Rate per Hour: \$42.06

Supplemental Note: \$76.72 on overtime

Shift Wage Rate: \$109.79

Engineer - Heavy Construction Maintenance Engineer I

Installing, Repairing, Maintaining, Dismantling and Manning of all equipment including Steel Cutting, Bending and Heat Sealing Machines, Mechanical Heaters, Grout Pumps, Bentonite Pumps & Plants, Screening Machines, Fusion Coupling Machines, Tunnel Boring Machines Moles and Machines of a similar nature, Power Packs, Mechanical Hydraulic Jacks; all drill rigs including but not limited to Churn, Rotary Caisson, Raised Bore & Drills of a similar nature; Personnel, Inspection & Safety Boats or any boats used to perform functions of same, Mine Hoists, Whirlies, all Climbing Cranes, all Tower Cranes, including but not limited to Truck Mounted and Crawler Type and machines of similar nature; Maintaining Hydraulic Drills and machines of a similar nature; Well Point System-Installation and dismantling; Burning, Welding, all Pumps regardless of size and/or motor power, except River Cofferdam Pumps and Wells Point Pumps; Motorized Buggies (three or more); equipment used in the cleaning and televising of sewers, but not limited to jet-rodder/vacuum truck, vacall/vactor, closed circuit television inspection equipment; high powered water pumps, jet pumps; screed machines and concrete finishing machines of a similar nature; vermeers.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$72.05

Supplemental Benefit Rate per Hour: \$42.06

Supplemental Note: \$76.72 on overtime

Shift Wage Rate: \$115.28

Engineer - Heavy Construction Maintenance Engineer II

On Base Mounted Tower Cranes

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$95.02

Supplemental Benefit Rate per Hour: \$42.06

Supplemental Note: \$76.72 on overtime

Shift Wage Rate: \$152.03

Engineer - Heavy Construction Maintenance Engineer III

On Generators, Light Towers

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$47.10

Supplemental Benefit Rate per Hour: \$42.06

Supplemental Note: \$76.72 on overtime

Shift Wage Rate: \$75.36

Engineer - Heavy Construction Maintenance Engineer IV

On Pumps and Mixers including mud sucking

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE**

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$48.35

Supplemental Benefit Rate per Hour: \$42.06

Supplemental Note: \$76.72 on overtime

Shift Wage Rate: \$77.36

Engineer - Heavy Construction Service Engineer

Gradalls: Concrete Pumps: Power Houses: Driving Truck Cranes: Driving and Operating Fuel and Grease Trucks.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$64.82

Supplemental Benefit Rate per Hour: \$42.06

Supplemental Note: \$76.72 on overtime

Shift Wage Rate: \$103.71

Engineer - Heavy Construction Service Mechanic

Shovels: Cranes: Draglines: Backhoes: Keystones: Pavers: Trenching Machines: Guniting Machines: Compressors (three (3) or more in Battery): Crawler Cranes- having a straight lattice boom with no attachment or luffing boom, no jib and no auxiliary attachment.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$44.45

Supplemental Benefit Rate per Hour: \$42.06

Supplemental Note: \$76.72 on overtime

Shift Wage Rate: \$71.12

Engineer - Steel Erection Maintenance Engineers

Derrick, Travelers, Tower, Crawler Tower and Climbing Cranes

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$68.93

Supplemental Benefit Rate per Hour: \$42.06

Supplemental Note: \$76.72 on overtime

Shift Wage Rate: \$110.29

Engineer - Steel Erection Oiler I

On a Truck Crane

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$64.43

Supplemental Benefit Rate per Hour: \$42.06

Supplemental Note: \$76.72 on overtime

Shift Wage Rate: \$103.09

Engineer - Steel Erection Oiler II

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE**

On a Crawler Crane

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$48.72

Supplemental Benefit Rate per Hour: \$42.06

Supplemental Note: \$76.72 on overtime

Shift Wage Rate: \$77.95

Overtime Description

On jobs of more than one shift, if the next shift employee fails to report for work through any cause over which the employer has no control, the employee on duty who works the next shift continues to work at the single time rate.

Overtime

Double time the regular rate after an 8 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day

Lincoln's Birthday

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

Engineer - Building Work Maintenance Engineers I

Installing, repairing, maintaining, dismantling (of all equipment including: Steel Cutting and Bending Machines, Mechanical Heaters, Mine Hoists, Climbing Cranes, Tower Cranes, Linden Peine, Lorain, Liebherr, Mannes, or machines of a similar nature, Well Point Systems, Deep Well Pumps, Concrete Mixers with loading Device, Concrete Plants, Motor Generators when used for temporary power and lights), skid steer machines of a similar nature including bobcat.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$64.11

Supplemental Benefit Rate per Hour: \$41.15

Supplemental Note: \$74.90 on overtime

Engineer - Building Work Maintenance Engineers II

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE**

On Pumps, Generators, Mixers and Heaters

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$49.49

Supplemental Benefit Rate per Hour: \$41.15

Supplemental Note: \$74.90 on overtime

Engineer - Building Work Oilers I

All gasoline, electric, diesel or air operated Gradealls: Concrete Pumps, Overhead Cranes in Power Houses: Their duties shall be to assist the Engineer in oiling, greasing and repairing of all machines; Driving Truck Cranes: Driving and Operating Fuel and Grease Trucks, Cherrypickers (hydraulic cranes) over 70,000 GVW, and machines of a similar nature.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$60.89

Supplemental Benefit Rate per Hour: \$41.15

Supplemental Note: \$74.90 on overtime

Engineer - Building Work Oilers II

Oilers on Crawler Cranes, Backhoes, Trenching Machines, Guniting Machines, Compressors (three or more in Battery).

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$44.88

Supplemental Benefit Rate per Hour: \$41.15

Supplemental Note: \$74.90 on overtime

Overtime Description

On jobs of more than one shift, if an Employee fails to report for work through any cause over which the Employer has no control, the Employee on duty will continue to work at the rate of single time.

Overtime

Double time the regular rate after an 8 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day

Lincoln's Birthday

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Christmas Day

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Shift Rates

When two (2) or more shifts are employed, single time will be paid for each shift.

(Local #15)

ENGINEER - CITY SURVEYOR AND CONSULTANT

Party Chief

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$41.98**

Supplemental Benefit Rate per Hour: **\$24.40**

Supplemental Note: Overtime Benefit Rate - \$29.35 per hour (time & one half) \$34.30 per hour (double time).

Instrument Person

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$34.32**

Supplemental Benefit Rate per Hour: **\$24.40**

Supplemental Note: Overtime Benefit Rate - \$29.35 per hour (time & one half) \$34.30 per hour (double time).

Rodperson

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$29.49**

Supplemental Benefit Rate per Hour: **\$24.40**

Supplemental Note: Overtime Benefit Rate - \$29.35 per hour (time & one half) \$34.30 per hour (double time).

Overtime Description

Time and one half the regular rate after an 8 hour day, Time and one half the regular rate for Saturday for the first eight hours worked, Double time the regular time rate for Saturday for work performed in excess of eight hours, Double time the regular rate for Sunday and Double time the regular rate for work on a holiday.

Paid Holidays

New Year's Day

Lincoln's Birthday

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

(Operating Engineer Local #15-D)

ENGINEER - FIELD (BUILDING CONSTRUCTION) (Construction of Building Projects, Concrete Superstructures, etc.)

Field Engineer - BC Party Chief

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$66.42**

Supplemental Benefit Rate per Hour: **\$37.16**

Supplemental Note: Overtime Benefit Rate - \$52.27 per hour (time & one half) \$67.37 per hour (double time).

Field Engineer - BC Instrument Person

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$51.37**

Supplemental Benefit Rate per Hour: **\$37.16**

Supplemental Note: Overtime Benefit Rate - \$52.27 per hour (time & one half) \$67.37 per hour (double time).

Field Engineer - BC Rodperson

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$32.84**

Supplemental Benefit Rate per Hour: **\$37.16**

Supplemental Note: Overtime Benefit Rate - \$52.27 per hour (time & one half) \$67.37 per hour (double time).

Overtime Description

Time and one half the regular rate after a 7 hour work and time and one half the regular rate for Saturday for the first seven hours worked, Double time the regular time rate for Saturday for work performed in excess of seven hours, Double time the regular rate for Sunday and Double time the regular rate for work on a holiday.

Paid Holidays

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Christmas Day

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

(Operating Engineer Local #15-D)

ENGINEER - FIELD (HEAVY CONSTRUCTION)
(Construction of Roads, Tunnels, Bridges, Sewers, Building Foundations,
Engineering Structures etc.)

Field Engineer - HC Party Chief

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$77.31

Supplemental Benefit Rate per Hour: \$39.64

Supplemental Note: Overtime benefit rate - \$55.86 per hour (time & one half), \$72.08 per hour (double time).

Field Engineer - HC Instrument Person

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$56.50

Supplemental Benefit Rate per Hour: \$39.64

Supplemental Note: Overtime benefit rate - \$55.86 per hour (time & one half), \$72.08 per hour (double time).

Field Engineer - HC Rodperson

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$47.23

Supplemental Benefit Rate per Hour: \$39.64

Supplemental Note: Overtime benefit rate - \$55.86 per hour (time & one half), \$72.08 per hour (double time).

Overtime Description

Time and one half the regular rate after an 8 hour day, Time and one half the regular rate for Saturday for the first eight hours worked, Double time the regular time rate for Saturday for work performed in excess of eight hours, Double time the regular rate for Sunday and Double time the regular rate for work on a holiday.

Paid Holidays

New Year's Day

Lincoln's Birthday

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Christmas Day

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

(Operating Engineer Local #15-D)

ENGINEER - FIELD (STEEL ERECTION)

Field Engineer - Steel Erection Party Chief

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$71.98**

Supplemental Benefit Rate per Hour: **\$39.14**

Supplemental Note: Overtime benefit rate - \$55.11 per hour (time & one half), \$71.08 per hour (double time).

Field Engineer - Steel Erection Instrument Person

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$55.85**

Supplemental Benefit Rate per Hour: **\$39.14**

Supplemental Note: Overtime benefit rate - \$55.11 per hour (time & one half), \$71.08 per hour (double time).

Field Engineer - Steel Erection Rodperson

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$36.99**

Supplemental Benefit Rate per Hour: **\$39.14**

Supplemental Note: Overtime benefit rate - \$55.11 per hour (time & one half), \$71.08 per hour (double time).

Overtime Description

Time and one half the regular rate for Saturday for the first eight hours worked.

Double time the regular rate for Saturday for work performed in excess of eight hours.

Overtime

Time and one half the regular rate after an 8 hour day.

Double time the regular rate for Sunday.

Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day

Lincoln's Birthday

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Christmas Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Operating Engineer Local #15-D)

ENGINEER - OPERATING

Operating Engineer - Road & Heavy Construction I

Back Filling Machines, Cranes, Mucking Machines and Dual Drum Paver.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$86.05**

Supplemental Benefit Rate per Hour: **\$34.55**

Supplemental Note: \$63.15 overtime hours

Shift Wage Rate: **\$137.68**

Operating Engineer - Road & Heavy Construction II

Backhoes, Power Shovels, Hydraulic Clam Shells, Steel Erection, Moles and machines of a similar nature.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$89.05**

Supplemental Benefit Rate per Hour: **\$34.55**

Supplemental Note: \$63.15 overtime hours

Shift Wage Rate: **\$142.48**

Operating Engineer - Road & Heavy Construction III

Mine Hoists (Cranes, etc. when used as Mine Hoists)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$91.89**

Supplemental Benefit Rate per Hour: **\$34.55**

Supplemental Note: \$63.15 overtime hours

Shift Wage Rate: **\$147.02**

Operating Engineer - Road & Heavy Construction IV

Gradealls, Keystones, Cranes on land or water (with digging buckets), Bridge Cranes, Vermeer Cutter and machines of a similar nature, Trenching Machines.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$89.70**

Supplemental Benefit Rate per Hour: **\$34.55**

Supplemental Note: \$63.15 overtime hours

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CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Shift Wage Rate: **\$143.52**

Operating Engineer - Road & Heavy Construction V

Pile Drivers & Rigs (working alongside Dock Builder foreperson): Derrick Boats, Tunnel Shovels.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$87.94**

Supplemental Benefit Rate per Hour: **\$34.55**

Supplemental Note: \$63.15 overtime hours

Shift Wage Rate: **\$140.70**

Operating Engineer - Road & Heavy Construction VI

Mixers (Concrete with loading attachment), Concrete Pavers, Cableways, Land Derricks, Power Houses (Low Air Pressure Units).

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$83.59**

Supplemental Benefit Rate per Hour: **\$34.55**

Supplemental Note: \$63.15 overtime hours

Shift Wage Rate: **\$133.74**

Operating Engineer - Road & Heavy Construction VII

Barrier Movers, Barrier Transport and Machines of a Similar Nature.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$67.71**

Supplemental Benefit Rate per Hour: **\$34.55**

Supplemental Note: \$63.15 overtime hours

Shift Wage Rate: **\$108.34**

Operating Engineer - Road & Heavy Construction VIII

Utility Compressors

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$52.77**

Supplemental Benefit Rate per Hour: **\$34.55**

Supplemental Note: \$63.15 overtime hours

Shift Wage Rate: **\$66.26**

Operating Engineer - Road & Heavy Construction IX

Horizontal Boring Rig

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$79.56**

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Supplemental Benefit Rate per Hour: \$34.55
Supplemental Note: \$63.15 overtime hours
Shift Wage Rate: \$127.30

Operating Engineer - Road & Heavy Construction X

Elevators (manually operated as personnel hoist).

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate per Hour: \$73.21
Supplemental Benefit Rate per Hour: \$34.55
Supplemental Note: \$63.15 overtime hours
Shift Wage Rate: \$117.14

Operating Engineer - Road & Heavy Construction XI

Compressors (Portable 3 or more in battery), Driving of Truck Mounted Compressors, Well-point Pumps, Tugger Machines Well Point Pumps, Churn Drill.

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate per Hour: \$57.06
Supplemental Benefit Rate per Hour: \$34.55
Supplemental Note: \$63.15 overtime hours
Shift Wage Rate: \$91.30

Operating Engineer - Road & Heavy Construction XII

All Drills and Machines of a similar nature.

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate per Hour: \$84.48
Supplemental Benefit Rate per Hour: \$34.55
Supplemental Note: \$63.15 overtime hours
Shift Wage Rate: \$135.17

Operating Engineer - Road & Heavy Construction XIII

Concrete Pumps, Concrete Plant, Stone Crushers, Double Drum Hoist, Power Houses (other than above).

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate per Hour: \$81.85
Supplemental Benefit Rate per Hour: \$34.55
Supplemental Note: \$63.15 overtime hours
Shift Wage Rate: \$130.96

Operating Engineer - Road & Heavy Construction XIV

Concrete Mixer

Effective Period: 7/1/2021 - 6/30/2022

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Wage Rate per Hour: \$78.28
Supplemental Benefit Rate per Hour: \$34.55
Supplemental Note: \$63.15 overtime hours
Shift Wage Rate: \$125.25

Operating Engineer - Road & Heavy Construction XV

Compressors (Portable Single or two in Battery, not over 100 feet apart), Pumps (River Cofferdam) and Welding Machines, Push Button Machines, All Engines Irrespective of Power (Power-Pac) used to drive auxiliary equipment, Air, Hydraulic, etc.

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate per Hour: \$53.11
Supplemental Benefit Rate per Hour: \$34.55
Supplemental Note: \$63.15 overtime hours
Shift Wage Rate: \$84.98

Operating Engineer - Road & Heavy Construction XVI

Concrete Breaking Machines, Hoists (Single Drum), Load Masters, Locomotives (over ten tons) and Dinkies over ten tons, Hydraulic Crane-Second Engineer.

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate per Hour: \$74.81
Supplemental Benefit Rate per Hour: \$34.55
Supplemental Note: \$63.15 overtime hours
Shift Wage Rate: \$119.70

Operating Engineer - Road & Heavy Construction XVII

On-Site concrete plant engineer, On-site Asphalt Plant Engineer, and Vibratory console.

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate per Hour: \$75.36
Supplemental Benefit Rate per Hour: \$34.55
Supplemental Note: \$63.15 overtime hours
Shift Wage Rate: \$120.58

Operating Engineer - Road & Heavy Construction XVIII

Tower Crane

Effective Period: 7/1/2021 - 6/30/2022
Wage Rate per Hour: \$107.75
Supplemental Benefit Rate per Hour: \$34.55
Supplemental Note: \$63.15 overtime hours
Shift Wage Rate: \$172.40

Operating Engineer - Paving I

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Asphalt Spreaders, Autogrades (C.M.I.), Roto/Mil

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$83.59

Supplemental Benefit Rate per Hour: \$34.55

Supplemental Note: \$63.15 overtime hours

Shift Wage Rate: \$133.74

Operating Engineer - Paving II

Asphalt Roller

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$81.47

Supplemental Benefit Rate per Hour: \$34.55

Supplemental Note: \$63.15 overtime hours

Shift Wage Rate: \$130.35

Operating Engineer - Paving III

Asphalt Plants

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$69.04

Supplemental Benefit Rate per Hour: \$34.55

Supplemental Note: \$63.15 overtime hours

Shift Wage Rate: \$110.46

Operating Engineer - Concrete I

Cranes

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$89.31

Supplemental Benefit Rate per Hour: \$34.55

Supplemental Note: \$63.15 overtime hours

Operating Engineer - Concrete II

Compressors

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$53.51

Supplemental Benefit Rate per Hour: \$34.55

Supplemental Note: \$63.15 overtime hours

Operating Engineer - Concrete III

Micro-traps (Negative Air Machines), Vac-All Remediation System.

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Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$71.55

Supplemental Benefit Rate per Hour: \$34.55

Supplemental Note: \$63.15 overtime hours

Operating Engineer - Steel Erection I

Three Drum Derricks

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$92.36

Supplemental Benefit Rate per Hour: \$34.55

Supplemental Note: \$63.15 overtime hours

Shift Wage Rate: \$147.78

Operating Engineer - Steel Erection II

Cranes, 2 Drum Derricks, Hydraulic Cranes, Fork Lifts and Boom Trucks.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$88.77

Supplemental Benefit Rate per Hour: \$34.55

Supplemental Note: \$63.15 overtime hours

Shift Wage Rate: \$142.03

Operating Engineer - Steel Erection III

Compressors, Welding Machines.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$53.07

Supplemental Benefit Rate per Hour: \$34.55

Supplemental Note: \$63.15 overtime hours

Shift Wage Rate: \$84.91

Operating Engineer - Steel Erection IV

Compressors - Not Combined with Welding Machine. (Public Works Only)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$50.56

Supplemental Benefit Rate per Hour: \$34.55

Supplemental Note: \$63.15 overtime hours

Shift Wage Rate: \$80.90

Operating Engineer - Building Work I

Forklifts, Plaster (Platform machine), Plaster Bucket, Concrete Pump and all other equipment used for hoisting material.

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Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$70.94

Supplemental Benefit Rate per Hour: \$34.55

Supplemental Note: \$63.15 overtime hours

Operating Engineer - Building Work II

Compressors, Welding Machines (Cutting Concrete-Tank Work), Paint Spraying, Sandblasting, Pumps (with the exclusion of Concrete Pumps), All Engines irrespective of Power (Power-Pac) used to drive Auxiliary Equipment, Air, Hydraulic, Jacking System, etc.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$53.12

Supplemental Benefit Rate per Hour: \$34.55

Supplemental Note: \$63.15 overtime hours

Operating Engineer - Building Work III

Double Drum

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$84.16

Supplemental Benefit Rate per Hour: \$34.55

Supplemental Note: \$63.15 overtime hours

Operating Engineer - Building Work IV

Stone Derrick, Cranes, Hydraulic Cranes Boom Trucks.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$89.10

Supplemental Benefit Rate per Hour: \$34.55

Supplemental Note: \$63.15 overtime hours

Operating Engineer - Building Work V

Dismantling and Erection of Cranes, Relief Engineer.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$78.81

Supplemental Benefit Rate per Hour: \$34.55

Supplemental Note: \$63.15 overtime hours

Operating Engineer - Building Work VI

4 Pole Hoist, Single Drum Hoists.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$77.98

Supplemental Benefit Rate per Hour: \$34.55

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Supplemental Note: \$63.15 overtime hours

Operating Engineer - Building Work VII

Rack & Pinion and House Cars

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$62.01**

Supplemental Benefit Rate per Hour: **\$34.55**

Supplemental Note: \$63.15 overtime hours

For New House Car projects Wage Rate per Hour **\$49.50**

For New House Car projects: Supplemental Benefit overtime hours: **\$48.85**

Overtime Description

On jobs of more than one shift, if an Employee fails to report for work through any cause over which the Employer has no control, the Employee on duty will continue to work at the rate of single time.

For House Cars and Rack & Pinion only: Overtime paid at time and one-half for all hours in excess of eight hours in a day, Saturday, Sunday and Holidays worked.

Overtime

Double time the regular rate after an 8 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

Shift Rates

When two (2) or more shifts are employed, single time will be paid for each shift.

For Steel Erection Only: Shifts may be worked at the single time rate at other than the regular working hours (8:00 A.M. to 4:30 P.M.) on the following work ONLY: Heavy construction jobs on work below the street level, over railroad tracks and on building jobs.

(Operating Engineer Local #14)

FLOOR COVERER

(Interior vinyl composition tile, sheath vinyl linoleum and wood parquet tile including site preparation and synthetic turf not including site preparation)

Floor Coverer

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$54.75**

Supplemental Benefit Rate per Hour: **\$47.13**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Day after Thanksgiving

Day before Christmas

Christmas Day

Day before New Year's Day

Shift Rates

Two shifts may be utilized with the first shift working 8 a.m. to the end of the shift at straight time rate of pay. The wage rate for the second shift consisting of 7 hours shall be paid at 114.29% of straight time wage rate. The wage rate for the second shift consisting of 8 hours shall be paid 112.5% of the straight time wage rate. When it is not possible to conduct alteration or repair work during regular working hours in a building occupied by tenants, the rule for the second shift will apply.

(Carpenters District Council)

GLAZIER

(New Construction, Remodeling, and Alteration)

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Glazier

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$46.55**

Supplemental Benefit Rate per Hour: **\$47.74**

Supplemental Note: Supplemental Benefit Overtime Rate: \$71.62

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

Shift Rates

Shifts shall be any 8 consecutive hours after the normal working day for which the Glazier shall receive 9 hours pay for 8 hours worked.

(Local #1281)

GLAZIER - REPAIR & MAINTENANCE

(For the Installation of Glass - All repair and maintenance work on a particular building.)

Craft Jurisdiction for repair, maintenance and fabrication

Plate glass replacement, Residential glass replacement, Residential mirrors and shower doors, Storm windows and storm doors, Residential replacement windows, Herculite door repairs, Door closer repairs, Retrofit apartment house (non-commercial buildings), Glass tinting.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$26.40**

Supplemental Benefit Rate per Hour: **\$24.09**

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Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Sunday.

Time and one half the regular rate for work on the following holiday(s).

Time and one half the regular hourly rate after 40 straight time hours in any work week.

Paid Holidays

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

(Local #1281)

HAZARDOUS MATERIAL HANDLER

(Removal, abatement, encapsulation or decontamination of asbestos, lead, mold, or other toxic or hazardous waste/materials)

Handler

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$38.05**

Supplemental Benefit Rate per Hour: **\$17.75**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Sunday.

Time and one half the regular hourly rate after 40 straight time hours in any work week.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Easter

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Paid Holidays

None

(Local #78 and Local #12A)

HEAT AND FROST INSULATOR

Heat & Frost Insulator

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$62.21

Supplemental Benefit Rate per Hour: \$41.91

Overtime Description

Double time shall be paid for supplemental benefits during overtime work.
8th hour paid at time and one half.

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Triple time the regular rate for work on the following holiday(s).

Labor Day

Paid Holidays

None

Shift Rates

The first shift shall work seven hours at the regular straight time rate. The second and third shift shall work seven hours the regular straight time hourly rate plus a fourteen percent wage and benefit premium. There must be a first shift to work the second shift, and a second shift to work the third shift. Off-hour jobs in occupied

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buildings may be worked on weekdays with an increment of one-dollar (\$1.00) per hour and eight (8) hours pay for seven (7) hours worked.

(Local #12) (BCA)

HOUSE WRECKER (TOTAL DEMOLITION)

House Wrecker - Tier A

On all work sites the first, second, eleventh and every third House Wrecker thereafter will be Tier A House Wreckers (i.e. 1st, 2nd, 11th, 14th etc). Other House Wreckers may be Tier B House Wreckers.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$37.63**

Supplemental Benefit Rate per Hour: **\$30.37**

House Wrecker - Tier B

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$26.86**

Supplemental Benefit Rate per Hour: **\$22.78**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

(Mason Tenders District Council)

IRON WORKER - ORNAMENTAL

Iron Worker - Ornamental

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$46.15

Supplemental Benefit Rate per Hour: \$59.62

Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

Overtime Description

Time and one half the regular rate after a 7 hour day for a maximum of two hours on any regular work day (the 8th and 9th hour) and double time shall be paid for all work on a regular work day thereafter, time and one half the regular rate for Saturday for the first seven hours of work and double time shall be paid for all work on a Saturday thereafter.

Overtime

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

When two or three shifts are employed on a job, Monday through Friday, the second and third shift are paid eight and one half (8 ½) hours at the straight time rate for seven (7) hours of work, and ten (10) hours at the straight time rate for eight (8) hours of work. When it is not possible to conduct alteration or repair work during regular working hours in a building occupied by tenants, eight hours will be paid at straight time rate for seven hours of work, and all overtime shall be paid at time and one-half the regular straight time rates but on Sundays and Holidays, time and one-half the regular straight time rate shall be paid for all work up to seven (7) hours and double time shall be paid for all work thereafter.

(Local #580)

IRON WORKER - STRUCTURAL

Iron Worker - Structural

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$54.20

Supplemental Benefit Rate per Hour: \$82.81

Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

Overtime Description

Monday through Friday- the first eight hours are paid at straight time, the 9th and 10th hours are paid at time and one-half the regular rate, all additional weekday overtime is paid at double the regular rate. Saturdays- the first eight hours are paid at time and one-half the regular rate, double time thereafter. Sunday-all shifts are paid at double time. Four Days a week at Ten (10) hours straight time is allowed.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.

1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates

Monday through Friday - First Shift: First eight hours are paid at straight time, the 9th & 10th hours are paid at time and a half, double time paid thereafter. Second and third Shifts: First eight hours are paid at time and one-half, double time thereafter. Saturdays: All shifts, first eight hours paid at time and one-half, double time thereafter: Sunday all shifts are paid at double time.

Four (4), ten (10) hour days may be worked at straight time during a week, Monday thru Thursday.

(Local #40 & #361)

LABORER

(Foundation, Concrete, Excavating, Street Pipe Layer and Common)

Laborer

Excavation and foundation work for buildings, heavy construction, engineering work, and hazardous waste removal in connection with the above work. Landscaping tasks in connection with heavy construction work, engineering work and building projects. Projects include, but are not limited to pollution plants, sewers, parks, subways, bridges, highways, etc.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$43.50**

Supplemental Benefit Rate per Hour: **\$48.63**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Thanksgiving Day

Christmas Day

Paid Holidays

Labor Day

Thanksgiving Day

Shift Rates

When two shifts are employed, single time rate shall be paid for each shift. When three shifts are found necessary, each shift shall work seven and one half hours (7 ½), but shall be paid for eight (8) hours of labor, and be permitted one half hour for lunch.

(Local #731)

LANDSCAPING

(Landscaping tasks, such as tree pruning, tree removing and spraying in connection with Green Infrastructure maintenance and the planting of street

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trees and trees in City parks, but not when such activities are performed as part of construction or reconstruction projects.)

Landscaper (Year 6 and above)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$33.90**

Supplemental Benefit Rate per Hour: **\$17.05**

Landscaper (Year 3 - 5)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$32.81**

Supplemental Benefit Rate per Hour: **\$17.05**

Landscaper (up to 3 years)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$30.06**

Supplemental Benefit Rate per Hour: **\$17.05**

Groundperson

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$30.06**

Supplemental Benefit Rate per Hour: **\$17.05**

Tree Remover / Pruner

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$39.42**

Supplemental Benefit Rate per Hour: **\$17.05**

Landscaper Sprayer (Pesticide Applicator)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$28.41**

Supplemental Benefit Rate per Hour: **\$17.05**

Watering - Plant Maintainer

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$22.88**

Supplemental Benefit Rate per Hour: **\$17.05**

Overtime Description

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For all overtime work performed, supplemental benefits shall include an additional seventy-five (\$0.75) cents per hour.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Time and one half the regular rate for work on a holiday plus the day's pay.

Paid Holidays

New Year's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Shift Rates

Work performed on a 4pm to 12am shift has a 15% differential. Work performed on a 12am to 8am shift has a 20% differential.

(Local #175)

MARBLE MECHANIC

Marble Setter

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$56.73**

Supplemental Benefit Rate per Hour: **\$41.76**

Marble Finisher

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$44.32**

Supplemental Benefit Rate per Hour: **\$38.96**

Marble Polisher

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$42.91**

Supplemental Benefit Rate per Hour: **\$31.61**

Marble Maintenance Finisher

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Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$26.73**

Supplemental Benefit Rate per Hour: **\$13.59**

Overtime Description

Supplemental Benefit contributions are to be made at the applicable overtime rates.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

(Local #7)

MASON TENDER

Mason Tender

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$39.20**

Supplemental Benefit Rate per Hour: **\$31.24**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

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Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

None

Shift Rates

The employer may work two (2) shifts with the first shift at the straight time wage rate and the second shift receiving eight (8) hours paid for seven (7) hours work at the straight time wage rate. When it is not possible to conduct alteration work during regular working hours in a building occupied by tenants, the rule for the second shift will apply.

(Local #79)

MASON TENDER (INTERIOR DEMOLITION WORKER)

Mason Tender Tier A

Tier A Interior Demolition Worker performs all burning, chopping, and other technically skilled tasks related to interior demolition work.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$37.29**

Supplemental Benefit Rate per Hour: **\$25.75**

Mason Tender Tier B

Tier B Interior Demolition Worker performs manual work and work incidental to demolition work, such as loading and carting of debris from the work site to an area where it can be loaded in to bins/trucks for removal. Also performs clean-up of the site when demolition is completed.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$26.48**

Supplemental Benefit Rate per Hour: **\$20.07**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Sunday.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

None

(Local #79)

METALLIC LATHER

Metallic Lather

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$46.40**

Supplemental Benefit Rate per Hour: **\$49.80**

Supplemental Note: For time and one half overtime - \$61.55 For double overtime - \$77.10

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.

1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Off-shift work outside of normal working hours shall receive straight time rate plus \$12 per hour for the first eight (8) hours.

(Local #46)

MILLWRIGHT

Millwright

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$57.00**

Supplemental Benefit Rate per Hour: **\$54.76**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Veteran's Day

Thanksgiving Day

Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.

1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates

Second and third shifts receives the straight time rate of pay plus fifteen (15%) percent allowing for one half hour for a meal. There must be a first shift to work a second and third shift. All additional hours worked shall be paid at the time and one-half rate of pay plus fifteen (15%) percent for weekday hours.

(Local #740)

MOSAIC MECHANIC

Mosaic Mechanic - Mosaic & Terrazzo Mechanic

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$51.66

Supplemental Benefit Rate per Hour: \$43.67

Mosaic Mechanic - Mosaic & Terrazzo Finisher

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$50.06

Supplemental Benefit Rate per Hour: \$43.67

Mosaic Mechanic - Machine Operator Grinder

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$50.06

Supplemental Benefit Rate per Hour: \$43.67

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Washington's Birthday

Good Friday

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

(Local #7)

PAINTER

Painter - Brush & Roller

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$43.00**

Supplemental Benefit Rate per Hour: **\$36.70**

Supplemental Note: \$43.79 on overtime

Spray & Scaffold / Decorative / Sandblast

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$46.00**

Supplemental Benefit Rate per Hour: **\$36.70**

Supplemental Note: \$43.79 on overtime

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

(District Council of Painters #9)

PAINTER - LINE STRIPING (ROADWAY)

Striping - Machine Operator

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$37.00**

Supplemental Benefit Rate per Hour: **\$14.37**

Supplemental Note: Overtime Supplemental Benefit rate - \$16.25

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Lineperson (Thermoplastic)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$41.00**

Supplemental Benefit Rate per Hour: **\$14.37**

Supplemental Note: Overtime Supplemental Benefit rate - \$16.25

Striping Assistant & Traffic Safety

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$36.75**

Supplemental Benefit Rate per Hour: **\$14.37**

Supplemental Note: Overtime Supplemental Benefit rate - \$16.25

Overtime Description

Time and one half the regular rate for all work in excess of ten (10) straight time hours per day and in excess of forty (40) straight time hours per week.

For Paid Holidays: Employees will only receive Holiday Pay for holidays not worked if said employee worked both the regularly scheduled workday before and after the holiday.

Overtime

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Time and one half the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Vacation

Employees with one to two years service shall accrue vacation based on hours worked: 250 hours worked - 1 day vacation; 500 hours worked - 2 days vacation; 750 hours worked - 3 days vacation; 900 hours worked - 4 days vacation; 1,000 hours worked - 5 days vacation. Employees with two to five years service receive two weeks vacation. Employees with five to twenty years service receive three weeks vacation. Employees with twenty to twenty-five years service receive four weeks vacation. Employees with 25 or more years service receive five weeks vacation.

(Local #1010)

PAINTER - METAL POLISHER

METAL POLISHER

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$31.88**

Supplemental Benefit Rate per Hour: **\$10.29**

METAL POLISHER - NEW CONSTRUCTION

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$32.83**

Supplemental Benefit Rate per Hour: **\$10.29**

METAL POLISHER - SCAFFOLD OVER 34 FEET

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$35.38**

Supplemental Benefit Rate per Hour: **\$10.29**

ASSISTANT METAL POLISHER

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$24.66**

Supplemental Benefit Rate per Hour: **\$9.81**

ASSISTANT METAL POLISHER - NEW CONSTRUCTION

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$25.41**

Supplemental Benefit Rate per Hour: **\$9.81**

ASSISTANT METAL POLISHER - SCAFFOLD OVER 34 FEET

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$27.16**

Supplemental Benefit Rate per Hour: **\$9.81**

Overtime Description

All work performed on Saturdays shall be paid at time-in-a half. The exception being; for suspended scaffold work and work deemed as a construction project; an eight (8) hour shift lost during the week due to circumstances beyond the control of the employer, up to a maximum of eight (8) hours per week, may be worked on Saturday at the straight time rate.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE**

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Triple time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Election Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Shift Rates

Four Days a week at Ten (10) hours straight a day.

Local 8A-28A

PAINTER - SIGN

Sign Painter

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$44.32**

Supplemental Benefit Rate per Hour: **\$21.70**

Assistant Sign Painter

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$37.66**

Supplemental Benefit Rate per Hour: **\$19.93**

Overtime Description

If any employee is required to work on any of the paid holidays then the employee shall receive double time rate of wages as well as the holiday pay for that day.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Paid Holidays

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Vacation

At least 1 year of employment.....1 week
2 years or more of employment.....2 weeks
8 years or more of employment.....3 weeks

(Local #8A-28A)

PAINTER - STRUCTURAL STEEL

Painters on Structural Steel

Effective Period: 7/1/2021 - 9/30/2021

Wage Rate per Hour: **\$51.50**

Supplemental Benefit Rate per Hour: **\$48.28**

Effective Period: 10/1/2021 - 6/30/2022

Wage Rate per Hour: **\$53.00**

Supplemental Benefit Rate per Hour: **\$49.83**

Painter - Power Tool

Effective Period: 7/1/2021 - 9/30/2021

Wage Rate per Hour: **\$57.50**

Supplemental Benefit Rate per Hour: **\$48.28**

Overtime Wage Rate: \$6.00 above the "Painters on Structural Steel" overtime rate.

Effective Period: 10/1/2021 - 6/30/2022

Wage Rate per Hour: **\$59.50**

Supplemental Benefit Rate per Hour: **\$49.83**

Overtime Wage Rate: \$6.50 above the "Painters on Structural Steel" overtime rate.

Overtime Description

Supplemental Benefits shall be paid for each hour worked, up to forty (40) hours per week for the period of May 1st to November 15th or up to fifty (50) hours per week for the period of November 16th to April 30th.

Overtime

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

None

Shift Rates

Second shift is paid at regular hourly wage rates plus a ten percent (10%) differential. There must be a first shift in order to work a second shift.

(Local #806)

PAPERHANGER

Paperhanger

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$46.87

Supplemental Benefit Rate per Hour: \$37.49

Supplemental Note: Supplemental benefits are to be paid at the appropriate straight time and overtime rate.

Overtime

Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Paid Holidays

None

Shift Rates

Evening shift - 4:30 P.M. to 12:00 Midnight (regular rate of pay); any work performed before 7:00 A.M. shall be at time and one half the regular base rate of pay.

(District Council of Painters #9)

PAVER AND ROADBUILDER

Paver & Roadbuilder - Formsetter

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$47.85**

Supplemental Benefit Rate per Hour: **\$48.51**

Supplemental Note: For time and one half overtime - \$52.64 For double overtime - \$56.76

Paver & Roadbuilder - Laborer

Paving and road construction work, regardless of material used, including but not limited to preparation of job sites, removal of old surfaces, asphalt and/or concrete, by whatever method, including but not limited to milling; laying of concrete; laying of asphalt for temporary, patchwork, and utility paving (but not production paving); site preparation and incidental work for installation of rubberized materials and similar surfaces; installation and repair of temporary construction fencing; slurry/seal coating, paving stones, maintenance of safety surfaces; play equipment installation, and other related work.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$43.98**

Supplemental Benefit Rate per Hour: **\$48.51**

Supplemental Note: For time and one half overtime - \$52.64 For double overtime - \$56.76

Production Paver & Roadbuilder - Screed Person

(Production paving is asphalt paving when using a paving machine or on a project where a paving machine is traditionally used)

Adjustment of paving machinery on production paving jobs.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$48.45**

Supplemental Benefit Rate per Hour: **\$48.51**

Supplemental Note: For time and one half overtime - \$52.64 For double overtime - \$56.76

Production Paver & Roadbuilder - Raker

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE**

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$47.85

Supplemental Benefit Rate per Hour: \$48.51

Supplemental Note: For time and one half overtime - \$52.64 For double overtime - \$56.76

Production Paver & Roadbuilder - Shoveler

General laborer (except removal of surfaces - see Paver and Roadbuilder-Laborer) including but not limited to tamper, AC paint and liquid tar work.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$43.98

Supplemental Benefit Rate per Hour: \$48.51

Supplemental Note: For time and one half overtime - \$52.64 For double overtime - \$56.76

Overtime Description

If an employee works New Year's Day or Christmas Day, they receive the single time rate plus 25%.

For Paid Holidays: Holiday pay for all holidays shall be prorated based two hours per day for each day worked in the holiday week, not to exceed 8 hours of holiday pay.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

Memorial Day

Independence Day

Labor Day

Columbus Day

Thanksgiving Day

Paid Holidays

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Shift Rates

When two shifts are employed, the work period for each shift shall be a continuous eight (8) hours. When three shifts are employed, each shift will work seven and one half (7 ½) hours but will be paid for eight (8) hours at the straight time rate since only one half (1/2) hour is allowed for meal time.

When two or more shifts are employed, single time will be paid for each shift.

Night Work - On night work, the first eight (8) hours of work will be paid for at the single time rate, except that production paving work shall be paid at 10% over the single time rate for the screed person, rakers and shovelers directly involved only. This differential is to be paid when there is only one shift and the shift works at night. All other workers will be exempt. Hours worked over eight (8) hours during said shift shall be paid for at the time and one-half rate.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

(Local #1010)

PLASTERER

Plasterer

Effective Period: 7/1/2021 - 7/31/2021

Wage Rate per Hour: **\$45.73**

Supplemental Benefit Rate per Hour: **\$30.37**

Effective Period: 8/1/2021 - 6/30/2022

Wage Rate per Hour: **\$46.00**

Supplemental Benefit Rate per Hour: **\$28.20**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

When it is not possible to conduct work during regular working hours (between 6:30am and 4:30pm), a shift differential shall be paid at the regular hourly rate plus a twelve percent (12%) per hour differential. Workers on shift work shall be allowed a paid one-half hour meal break.

(Local #262)

PLASTERER - TENDER

Plasterer - Tender

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$39.20

Supplemental Benefit Rate per Hour: \$31.24

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Washington's Birthday

Memorial Day

Independence Day

Labor Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

When work commences outside regular work hours, workers receive an hour additional (differential) wage and supplement payment. Eight hours pay for seven hours work or nine hours pay for eight hours work.

(Mason Tenders District Council)

PLUMBER

Plumber

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$71.25

Supplemental Benefit Rate per Hour: \$39.95

Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Plumber - Temporary Services

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE**

Temporary Services - When there are no Plumbers on the job site, there may be three shifts designed to cover the entire twenty-four hour period, including weekends if necessary, at the following rate straight time.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$57.08**

Supplemental Benefit Rate per Hour: **\$31.88**

Overtime

Double time the regular rate after an 8 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Shift Rates

30% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shifts Monday to Friday.

50% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shift work performed on weekends. For shift work on holidays, double time wages and fringe benefits shall be paid.

(Plumbers Local #1)

PLUMBER (MECHANICAL EQUIPMENT AND SERVICE)

(Mechanical Equipment and Service work shall include any repair and/or replacement of the present plumbing system.)

Plumber

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$44.37**

Supplemental Benefit Rate per Hour: **\$18.31**

Overtime

Time and one half the regular rate after an 8 hour day.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

(Plumbers Local # 1)

PLUMBER (RESIDENTIAL RATES FOR 1, 2 AND 3 FAMILY HOME CONSTRUCTION)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$49.47

Supplemental Benefit Rate per Hour: \$28.68

Overtime

Double time the regular rate after an 8 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Shift Rates

30% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shifts Monday to Friday.
50% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shift work performed on weekends. For shift work on holidays, double time wages and fringe benefits shall be paid.

(Plumbers Local #1)

PLUMBER: PUMP & TANK Oil Trades (Installation and Maintenance)

Plumber - Pump & Tank

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$69.33

Supplemental Benefit Rate per Hour: \$27.98

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

Shift Rates

All work outside the regular workday (8:00 A.M. to 3:30 P.M.) is to be paid at time and one half the regular hourly rate

(Plumbers Local #1)

POINTER, WATERPROOFER, CAULKER, SANDBLASTER, STEAMBLASTER

(Exterior Building Renovation)

Journey person

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$56.77**

Supplemental Benefit Rate per Hour: **\$29.91**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

All work outside the regular work day (an eight hour workday between the hours of 6:00 A.M. and 4:00 P.M.) is to be paid at time and one half the regular rate. However, the employer may establish one (1) or two (2) shifts starting at or after 4:00 P.M. to be paid at the regular hourly rate plus a 10% differential.

(Bricklayer District Council)

ROOFER

Roofer

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE**

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$44.25**

Supplemental Benefit Rate per Hour: **\$34.81**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

Second shift - Regular hourly rate plus a 10% differential. Third shift - Regular hourly rate plus a 15% differential.

There must be a first shift to work the second shift, and a second shift to work the third shift. All other work outside the regular work day (an eight hour workday between the hours of 5:00 A.M. and 4:00 P.M.) is to be paid at time and one half the regular rate.

(Local #8)

SHEET METAL WORKER

Sheet Metal Worker

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$51.36**

Supplemental Benefit Rate per Hour: **\$53.34**

Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Sheet Metal Worker - Fan Maintenance

(The temporary operation of fans or blowers in new or existing buildings for heating and/or ventilation, and/or air conditioning prior to the completion of the project.)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$41.09**

Supplemental Benefit Rate per Hour: **\$53.34**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Sheet Metal Worker - Duct Cleaner

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$18.49**

Supplemental Benefit Rate per Hour: **\$11.94**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

Shift Rates

Work that can only be performed outside regular working hours (eight hours of work between 7:30 A.M. and 3:30 P.M.) - First shift (work between 3:30 P.M. and 11:30 P.M.) - 10% differential above the established hourly rate.

Second shift (work between 11:30 P.M. and 7:30 A.M.) - 15% differential above the established hourly rate.

For Fan Maintenance: On all full shifts of fan maintenance work the straight time hourly rate of pay will be paid for each shift, including nights, Saturdays, Sundays, and holidays.

(Local #28)

**SHEET METAL WORKER - SPECIALTY
(Decking & Siding)**

Sheet Metal Specialty Worker

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE**

The first worker to perform this work must be paid at the rate of the Sheet Metal Worker. The second and third workers shall be paid the Specialty Worker Rate. The ratio of One Sheet Metal Worker, then Two Specialty Workers shall be utilized thereafter.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$48.18**

Supplemental Benefit Rate per Hour: **\$26.87**

Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

(Local #28)

SHIPYARD WORKER

Shipyard Mechanic - First Class

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$28.50**

Supplemental Benefit Rate per Hour: **\$3.95**

Shipyard Mechanic - Second Class

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$19.07**

Supplemental Benefit Rate per Hour: **\$3.59**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Shipyard Laborer - First Class

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$23.40**

Supplemental Benefit Rate per Hour: **\$3.75**

Shipyard Laborer - Second Class

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$17.38**

Supplemental Benefit Rate per Hour: **\$3.52**

Shipyard Dockhand - First Class

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$21.57**

Supplemental Benefit Rate per Hour: **\$3.68**

Shipyard Dockhand - Second Class

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$17.28**

Supplemental Benefit Rate per Hour: **\$3.52**

Overtime Description

Work performed on holiday is paid double time the regular hourly wage rate plus holiday pay.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Time and one half the regular hourly rate after 40 straight time hours in any work week.

Paid Holidays

New Year's Day

Martin Luther King Jr. Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Based on Survey Data

SIGN ERECTOR

(Sheet Metal, Plastic, Electric, and Neon)

Sign Erector

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$52.29**

Supplemental Benefit Rate per Hour: **\$57.49**

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Time and one half the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Election Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Shift Rates

Time and one half the regular hourly rate is to be paid for all hours worked outside the regular workday either (7:00 A.M. through 2:30 P.M.) or (8:00 A.M. through 3:30 P.M.)

(Local #137)

STEAMFITTER

Steamfitter

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$59.05**

Supplemental Benefit Rate per Hour: **\$58.14**

Supplemental Note: Overtime supplemental benefit rate: \$115.54

Steamfitter -Temporary Services

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$44.88**

Supplemental Benefit Rate per Hour: **\$47.31**

Overtime Description

Double time after a 7 hour day except for Temporary Services.

Overtime

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

Shift Rates

May be performed outside of the regular workday except Saturday, Sunday and Holidays. When shift work is performed the wage rate for regular time worked is a 15% percent premium on wage and 15% percent premium on supplemental benefits.

Local 638

STEAMFITTER - REFRIGERATION AND AIR CONDITIONER (Maintenance and Installation Service Person)

Refrigeration and Air Conditioner Mechanic

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$42.85**

Supplemental Benefit Rate per Hour: **\$19.46**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Independence Day

Labor Day

Veteran's Day

Thanksgiving Day

Christmas Day

Double time and one half the regular rate for work on the following holiday(s).

Martin Luther King Jr. Day

President's Day

Memorial Day

Columbus Day

Paid Holidays

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Christmas Day

(Local #638-B)

STONE MASON - SETTER

Stone Mason - Setter

(Assisted by Derrickperson and Rigger)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$56.43**

Supplemental Benefit Rate per Hour: **\$48.52**

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
Washington's Birthday
Good Friday
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.

Shift Rates

For all work outside the regular workday (8:00 A.M. to 3:30 P.M. Monday through Friday), the pay shall be straight time plus a ten percent (10%) differential.

(Bricklayers District Council)

TAPER

Drywall Taper

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$48.47**

Supplemental Benefit Rate per Hour: **\$29.06**

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day
Martin Luther King Jr. Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Paid Holidays

Any worker who reports to work on Christmas Eve or New Year's Eve pursuant to his employer's instruction shall be entitled to three (3) hours afternoon pay without working.

(Local #1974)

TELECOMMUNICATION WORKER

(Install/maintain/repair telecommunications cables carrying data, video, and/or voice except for installation on building construction/alteration/renovation projects.)

Telecommunication Worker

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$47.03**

Supplemental Benefit Rate per Hour: **\$23.15**

Supplemental Note: The above rate applies for Manhattan, Bronx, Brooklyn, Queens. \$22.84 for Staten Island only.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

Lincoln's Birthday

Washington's Birthday

Memorial Day

Independence Day

Labor Day

Columbus Day

Election Day

Veteran's Day

Thanksgiving Day

Christmas Day

Paid Holidays

New Year's Day

Lincoln's Birthday

Washington's Birthday

Memorial Day

Independence Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Labor Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day

Employees have the option of observing either Martin Luther King's Birthday or the day after Thanksgiving instead of Lincoln's Birthday

Shift Rates

For any workday that starts before 8A.M. or ends after 6P.M. there is a 10% differential for the applicable worker's hourly rate.

Vacation

After 6 months.....one week.
After 12 months but less than 7 years.....two weeks.
After 7 or more but less than 15 years.....three weeks.
After 15 years or more but less than 25 years.....four weeks.

(C.W.A.)

TILE FINISHER

Tile Finisher

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$43.71

Supplemental Benefit Rate per Hour: \$35.10

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Paid Holidays

None

Shift Rates

Off shift work day (work performed outside the regular 8:00 A.M. to 3:30 P.M. workday): shift differential of one and one quarter ($1\frac{1}{4}$) times the regular straight time rate of pay for the seven hours of actual off-shift work.

(Local #7)

TILE LAYER - SETTER

Tile Layer - Setter

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$56.42**

Supplemental Benefit Rate per Hour: **\$39.75**

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Shift Rates

Off shift work day (work performed outside the regular 8:00 A.M. to 3:30 P.M. workday): shift differential of one and one quarter ($1\frac{1}{4}$) times the regular straight time rate of pay for the seven hours of actual off-shift work.

(Local #7)

TIMBERPERSON

Timberperson

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$52.50**

Supplemental Benefit Rate per Hour: **\$52.94**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

Off shift work commencing between 5:00 P.M. and 11:00 P.M. shall work eight and one half hours allowing for one half hour for lunch. The wage rate shall be 113% of the straight time hourly wage rate. Benefits for off-shift work shall be paid at the straight time rate.

(Local #1536)

TUNNEL WORKER

Blasters, Mucking Machine Operators (Compressed Air Rates)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$68.58**

Supplemental Benefit Rate per Hour: **\$60.19**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Tunnel Workers (Compressed Air Rates)

Includes shield driven liner plate portions or solidification portions work (8 hour shift) during excavation phase.

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$66.14

Supplemental Benefit Rate per Hour: \$58.29

Top Nipper (Compressed Air Rates)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$65.04

Supplemental Benefit Rate per Hour: \$57.14

Outside Lock Tender, Outside Gauge Tender, Muck Lock Tender (Compressed Air Rates)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$63.74

Supplemental Benefit Rate per Hour: \$56.20

Bottom Bell & Top Bell Signal Person: Shaft Person (Compressed Air Rates)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$63.74

Supplemental Benefit Rate per Hour: \$56.20

Changehouse Attendant: Powder Watchperson (Compressed Air Rates)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$56.04

Supplemental Benefit Rate per Hour: \$52.83

Blasters (Free Air Rates)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$65.41

Supplemental Benefit Rate per Hour: \$57.80

Tunnel Workers (Free Air Rates)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: \$62.58

Supplemental Benefit Rate per Hour: \$55.38

All Others (Free Air Rates)

Effective Period: 7/1/2021 - 6/30/2022

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Wage Rate per Hour: **\$57.84**

Supplemental Benefit Rate per Hour: **\$51.26**

Microtunneling (Free Air Rates)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$50.06**

Supplemental Benefit Rate per Hour: **\$44.30**

Overtime Description

For work performed during excavation and primary concrete tunnel lining phases - Double time the regular rate after an 8 hour day and Saturday, Sunday and on the following holiday(s) listed below.

For Repair-Maintenance Work on Existing Equipment and Facilities - Time and one half the regular rate after a 7 hour day, Saturday, Sunday and double time the regular rate for work on the following holiday(s) listed below.

For Small-Bore Micro Tunneling Machines - Time and one-half the regular rate shall be paid for all overtime.

For work not listed above - Time and one half the regular rate after an 8 hour day and Saturday and double time the regular rate on Sunday and on the following holiday(s) listed below.

Paid Holidays

New Year's Day

Lincoln's Birthday

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Election Day

Veteran's Day

Thanksgiving Day

Christmas Day

(Local #147)

UTILITY LOCATOR

(Locate & mark underground utilities for street excavation.)

Utility Locator (Year 7 and above)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$31.56**

Supplemental Benefit Rate per Hour: **\$1.43**

Utility Locator (Year 5 - 6)

Effective Period: 7/1/2021 - 6/30/2022

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE

Wage Rate per Hour: **\$22.85**

Supplemental Benefit Rate per Hour: **\$1.43**

Utility Locator (Year 4)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$21.54**

Supplemental Benefit Rate per Hour: **\$1.43**

Utility Locator (Year 3)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$20.30**

Supplemental Benefit Rate per Hour: **\$1.43**

Utility Locator (Year 2)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$19.13**

Supplemental Benefit Rate per Hour: **\$1.43**

Utility Locator (Year 1)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$18.04**

Supplemental Benefit Rate per Hour: **\$1.43**

Utility Locator (Up to 1 year)

Effective Period: 7/1/2021 - 6/30/2022

Wage Rate per Hour: **\$17.00**

Supplemental Benefit Rate per Hour: **\$1.43**

Supplemental Note: No benefits for the first 90 days of employment.

Overtime

Time and one half the regular rate for work on the following holiday(s).

Time and one half the regular hourly rate after 40 straight time hours in any work week.

Paid Holidays

New Year's Day

Memorial Day

Independence Day

Thanksgiving Day

Christmas Day

Shift Rates

10% shift differential to employees working any shift starting between noon and 5 AM.

Vacation

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
CONSTRUCTION WORKER PREVAILING WAGE SCHEDULE**

For up to 1 year 0 hours
For year 1 - 2 48 hours per year
For year 3 - 9 96 hours per year
For year 10 or more 144 hours per year

Sick Days:

For up to 1 year employee receives 40 hours paid sick leave.
For year 1 employee earns 2 hours of paid sick leave for every 100 overtime hours worked.
For year 2 - 9 years employee earns 4 hours of paid sick leave for every 100 overtime hours worked.
For year 10 or more employee earns 6 hours of paid sick leave for every 100 overtime hours worked.

(C.W.A.)

WELDER

**TO BE PAID AT THE RATE OF THE JOURNEYPERSON IN THE TRADE
PERFORMING THE WORK.**



**Department of
Design and
Construction**

Issue Date: March 15, 2020

**DDC STANDARD GENERAL CONDITIONS
FOR SINGLE CONTRACT PROJECTS**



**Department of
Design and
Construction**

Issue Date: March 15, 2020

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**DIVISION 01 – DDC STANDARD GENERAL CONDITIONS
SINGLE CONTRACT PROJECTS
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**Department of
Design and
Construction**

Division 01 – DDC STANDARD GENERAL CONDITIONS
SINGLE CONTRACT PROJECTS
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**SECTION 01 10 00
SUMMARY**

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].
- B. Addendum to the General Conditions: These General Conditions include and are supplemented by the Addendum to the General Conditions (the "Addendum"). The Addendum includes the following: (1) schedules referred to in these General Conditions, (2) information regarding the applicability of various articles, and (3) amended articles, if any.

1.2 SUMMARY:

- A. This section includes the following:
 - 1. Scope and Intent
 - 2. Provisions Referenced in the Contract
 - 3. Performance of Work During Non-Regular Work Hours (Pursuant to a Change Order)
 - 4. Interruption of Services at Existing Facilities

1.3 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.
- B. Design Consultant: "Design Consultant" means the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.4 SCOPE AND INTENT:

- A. Description of Project: Refer to the Addendum for a description of the Project.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 1.4 B

- B. LEED: The City of New York will seek U.S. Green Building Council (USGBC) LEED (Leadership in Energy and Environmental Design) certification for this Project as specified in Section 01 81 13.03 "SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v3 BUILDINGS"; or Section 01 81 13.04 "SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v4 BUILDINGS", and the Addendum to the General Conditions.



REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 1.4 C

- C. COMMISSIONING: The Project will be commissioned by an independent third party under separate contract with the City of New York. Commissioning must be in accordance with ASHRAE and USGBC LEED-NC procedures, as described in Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS, and/ or Section 01 91 15 GENERAL COMMISSIONING REQUIREMENTS FOR BUILDING ENCLOSURE and the Addendum to the General Conditions. The Contractor must cooperate with the commissioning agent and provide whatever assistance is required.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 1.4 D

- D. PROGRESS SCHEDULE: Refer to Section 01 32 16.1 PROGRESS SCHEDULES (METHOD A) or 01 32 16.2 PROGRESS SCHEDULES (METHOD B) or 01 32 16.3 PROGRESS SCHEDULES (METHOD C) and the Addendum to the General Conditions for requirements of the Project.
- E. COMPLETION OF WORK: Work to be done under the Contract is comprised of the furnishing of all labor, materials, equipment and other appurtenances, and obtaining all regulatory agency approvals necessary and required to complete the construction work in accordance with the Contract.
- F. OMISSION OF DETAILS: All work called for in the Specifications applicable to the Contract but not shown on the Contract Drawings in their present form, or vice versa, is required, and must be performed by the Contractor as though it were originally delineated or described. The cost of such work will be deemed included in the total Contract Price.
- G. WORK NOT IN SPECIFICATIONS OR CONTRACT DRAWINGS: Work not particularly specified in the Specifications nor detailed on the Contract Drawings but involved in carrying out their intent or in the complete and proper execution of the Work, is required, and must be performed by the Contractor. The cost of such work will be deemed included in the total Contract Price.
- H. SILENCE OF THE SPECIFICATIONS: The apparent silence of the Specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, will be regarded as meaning that only the best practice is to prevail and that only the best material and workmanship is to be used and interpretation of the Specifications will be made upon that basis.
- I. CONFLICT BETWEEN CONTRACT DRAWINGS AND SPECIFICATIONS: Should any conflict occur in or between the Drawings and Specifications, the Contractor will be deemed to have estimated the most expensive way of doing the Work unless the Contractor asked for and obtained a decision in writing from the Commissioner before the submission of the bid as to what must govern.

1.5 CONTRACT DRAWINGS AND SPECIFICATIONS:

- A. SCHEDULE C - The Contract Drawings are listed in Schedule C, which is set forth in the Addendum. Such drawings referred to in the Contract, and in the applicable Specifications for the Contract, bear the general title:
- City of New York
Department of Design and Construction
Division of Public Buildings
- B. DOCUMENTS FURNISHED TO THE CONTRACTOR - After the award of the Contract, the Contractor will be furnished with five (5) complete sets of paper prints of all Contract Drawings mentioned in Paragraph A above, as well as a copy of the Specifications.
- C. ADDITIONAL COPIES of Drawings and Specifications, when requested, will be furnished to the Contractor if available.



- D. **SUPPLEMENTARY DRAWINGS** - When, in the opinion of the Commissioner, it becomes necessary to more fully explain the work to be done, or to illustrate the work further, or to show any changes which may be required, drawings known as Supplementary Drawings will be prepared by the Commissioner.
- E. **COMPENSATION** - Where Supplementary Drawings entail extra work, compensation therefore to the Contractor will be subject to the terms of the Contract. The Supplementary Drawings will be binding upon the Contractor with the same force as the Contract Drawings.
- F. **SUPPLEMENTARY DRAWING PRINTS** - Three (3) copies of prints of these Supplementary Drawings will be furnished to the Contractor.
- G. **COPIES TO SUBCONTRACTORS** - The Contractor must furnish each of its subcontractors and material suppliers such copies of Contract Drawings, Supplementary Drawings, or copies of the Specifications as may be required for its work.

1.6 COORDINATION:

- A. **COORDINATION AND COOPERATION** - The Contractor must consult and study the requirements of the Contract Drawings and Specifications for all required work, including all work to be performed by trade subcontractors, so that the Contractor may become acquainted with the work of the Project as a whole in order to achieve the proper coordination and cooperation necessary for the efficient and timely performance of the work.
- B. **CONTRACTOR TO CHECK DRAWINGS:** - The Contractor must verify all dimensions, quantities and details shown on the Contract Drawings, Schedules, or other data received from the Commissioner, and must notify the Commissioner of all errors, omissions, conflicts and discrepancies found therein. Notice of such errors will be given before the Contractor proceeds with any work. Figures must be used in preference to scale dimensions and large-scale drawings in preference to small-scale drawings.

1.7 SHOP DRAWINGS AND RECORD DRAWINGS:

- A. Refer to Section 01 33 00 SUBMITTAL PROCEDURES and Section 01 78 39 PROJECT RECORD DRAWINGS for requirements applicable to shop drawings and record drawings.

1.8 TEMPORARY FACILITIES, SERVICES AND CONTROLS:

- A. Refer to Section 01 50 00 TEMPORARY FACILITIES SERVICES AND CONTROLS for the responsibilities of the Contractor.

1.9 DUST CONTROL:

- A. The Contractor must prepare, execute and manage a "Dust Control Plan" for the prevention of the emission of dust from construction related activities in compliance with 15 RCNY 13-01 et. seq.

1.10 PROVISIONS REFERENCED IN THE CONTRACT:

- A. **SCHEDULE A** - Various Articles of the Contract refer to requirements set forth in Schedule A of the General Conditions. Schedule A, which is included in the Addendum, sets forth (1) the referenced Articles of the Contract, and (2) the specific requirements applicable to the Contract.
- B. **EXTENSION OF TIME** - Applications for Extensions of Time, as indicated in Article 13 of the Contract, must be made in accordance with the Rules of the Procurement Policy Board.



- C. PARTIAL PAYMENTS FOR MATERIALS IN ADVANCE OF THEIR INCORPORATION IN THE WORK PURSUANT TO ARTICLE 42 OF THE CONTRACT – In order to better ensure the availability of materials, fixtures and equipment when needed for the work, the Commissioner may authorize partial payment for certain materials, fixtures and equipment, prior to their incorporation in the work, but only in strict accordance with, and subject to, all the terms and conditions set forth in the Specifications, unless an alternate method of payment is elsewhere provided in the Specifications for specified materials, fixtures or equipment.
1. The Contractor must submit to the Commissioner a written request, in quadruplicate, for payment for materials purchased or to be purchased for which the Contractor needs to be paid prior to their actual incorporation in the work. The request must be accompanied by a schedule of the types and quantities of materials, and must state whether such materials are to be stored on or off the site.
 2. Where the materials are to be stored off the site, they must be stored at a place other than the Contractor's premises (except with the written consent of the Commissioner) and under the conditions prescribed or approved by the Commissioner. The Contractor must set apart and separately store at the place or places of storage all materials and must clearly mark same "PROPERTY OF THE CITY OF NEW YORK", and further, must not at any time move any of said materials to another off-site place of storage without the prior written consent of the Commissioner. Materials may be removed from their place of storage off the site for incorporation in the work upon approval of the Resident Engineer.
 3. Where the materials are to be stored at the site, they must be stored at such locations as will be designated by the Resident Engineer and only in such quantities as, in the opinion of the Resident Engineer, will not interfere with the proper performance of the Work by the Contractor or by other Contractors then engaged in performing work on the site. Such materials must not be removed from their place of storage on the site except for incorporation in the Work, without the approval of the Resident Engineer.
 4. INSURANCE
 - a. STORAGE OFF-SITE – Where the materials are stored off the site and until such time as they are incorporated in the Work, the Contractor must fully insure such materials against any and all risks of destruction, damage or loss including but not limited to fire, theft, and any other casualty or happening. The policy of insurance must be payable to the City of New York. It must be in such terms and amounts as must be approved by the Commissioner and must be placed with a company duly licensed to do business in the State of New York. The Contractor must deliver the original and one (1) copy of such policy or policies marked "Fully Paid" to the Commissioner.
 - b. STORAGE ON THE SITE – Where the materials are stored at the site, the Contractor must furnish satisfactory evidence to the Commissioner that they are properly insured against loss, by endorsements or otherwise, under the policy or policies of insurance obtained by the Contractor to cover losses to materials owned or installed by the Contractor. The policy of insurance must cover fire and extended coverage against windstorm, hail, explosion and riot attending a strike, civil commotion, aircraft, vehicles and smoke.
 5. All costs, charges and expenses arising out of the storage of such materials, must be paid by the Contractor and the City hereby reserves the right to retain out of any partial or final payment made under the Contract an amount sufficient to cover such costs, charges and expenses with the understanding that the City will have and may exercise any and all other remedies at law for the recovery of such cost, charges and expenses. There will be no increase in the Contract price for such costs, charges and expenses and the Contractor must not make any claim or demand for compensation therefore.



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6. The Contractor must pay any and all costs of handling and delivery of materials, to the place of storage and from the place of storage to the site of the Work; and the City will have the right to retain from any partial or final payment an amount sufficient to cover the cost of such handling and delivery.
7. In the event that the whole or any part of these materials are lost, damaged, or destroyed in advance of their satisfactory incorporation in the work, the Contractor, at the Contractor's own cost, must replace such lost, damaged or destroyed materials of the same character and quality. The City will reimburse the Contractor for the cost of the replaced materials to the extent, and only to the extent, of the funds actually received by the City under the policies of insurance hereinbefore referred to. Until such time as the materials are replaced, the City will deduct from the value of the stored materials or from any other money due under the Contract, the amount paid to the Contractor for such lost, damaged or destroyed materials.
8. Should any of the materials paid for the City hereunder be subsequently rejected or incorporated in the work in a manner or by a method not in accordance with the Contract Documents, the Contractor must remove and replace, at Contractor's own cost, such defective or improperly incorporated material with materials complying with the Contract Documents. Until such materials are replaced, the City will deduct from the value of the stored materials or from any other money due the Contractor, the amount paid by the City for such rejected or improperly incorporated materials.
9. Payments for the cost of materials made hereunder will not be deemed to be an acceptance of such materials as being in accordance with the Contract Documents, and the Contractor always retains and must comply with the Contractor's duty to deliver to the site and properly incorporate in the work only materials which comply with the Contract Documents.
10. The Contractor must retain any and all risks in connection with the damage, destruction, or loss of the materials paid for hereunder to the time of delivery of the same to the site of the Work and their proper incorporation in the work in accordance with the Contract Documents.
11. The Contractor must comply with all laws and the regulations of any governmental body or agency pertaining to the priority purchase, allocation, and use of the materials.
12. When requesting payment for such materials, the Contractor must submit with the partial estimate duly authenticated documents of title, such as bills of sale, invoices or warehouse receipts, all in quadruplicate. The executed bills of sale must transfer title to the materials from the Contractor to the City. (In the event that the invoices state that the material has been purchased by a subcontractor, bills of sale in quadruplicate will also be required transferring title to the materials from subcontractor to the Contractor).
13. Where the Contractor, with the approval of the Commissioner, has purchased unusually large quantities of materials in order to assure their availability for the work, the Commissioner, at the Commissioner's option, may waive the requirements of Paragraph 12 provided the Contractor furnishes evidence in the form of an affidavit from the Contractor in quadruplicate, and such other proof as the Commissioner may require, that the Contractor is the sole owner of such materials and has purchased them free and clear of all liens and other encumbrances. In such event, the Contractor will pay for such materials and submit proof thereof, in the same manner as provided in Paragraph 12 hereof, within seven (7) days after receipt of payment therefore from the Comptroller. Failure on the part of the Contractor to submit satisfactory evidence that all such materials have been paid for in full, will preclude the Contractor from payments under the Contract.
14. The Contractor must include in each succeeding partial estimate requisition a summary of materials stored which must set forth the quantity and value of materials in storage, on or off the site, at the end of each preceding estimate period; the amount removed for incorporation in the



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Work; the quantity and value of materials delivered during the current period and the total value of materials on hand for which payment thereof will be included in the current payment estimate.

15. Upon proof to the satisfaction of the Commissioner of the actual cost of such materials and upon submission of proper proof of title as required under Paragraph 12 or Paragraph 13 hereof, payment will be made therefore to the extent of 85%, provided however, that the cost so verified, established and approved must not exceed the estimated cost of such materials included in the approved detailed breakdown estimate submitted in accordance with Article 41 of the Contract; if it does, the City will pay only 85% approved estimated cost.
16. Upon the incorporation in the Work of any such materials, which have been paid for in advance of such incorporation in accordance with the foregoing provisions, payment will be made for such materials incorporated in the Work pursuant to Article 42 of the Contract, less any sums paid pursuant to Paragraph 15 herein.

- D. **MOBILIZATION PAYMENT** – A line item for mobilization must be allowed on the Contractor's Detailed Bid Breakdown submitted in accordance with Article 41 of the Contract. The Mobilization Payment is intended to include the cost of required bonds, insurance coverage, and/or any other expenses required for the initiation of the Contract Work. All costs for mobilization will be deemed included in the total Contract Price. The Detailed Bid Breakdown must reflect, and the Mobilization Payment will be made, in accordance with the following schedule:

Contract Amount	Mobilization Amount
Less than \$50,000	\$0 (No Mobilization Payment)
\$50,001 to \$100,000	Fixed Amount = \$6,000
\$100,001 to \$500,000	6% of Contract Amount
\$500,001 to \$ 2,500,000	5% of Contract Amount
Over \$2,500,000	Lesser of 4% of Contract Amount or \$300,000

The Contractor may requisition for the Mobilization Payment upon satisfactory completion of the following:

1. Installation of any required field office(s);
2. Submission of all required insurance certificates and bond;
3. Approval of the Site Safety Plan per the Safety Requirements Section of the Information for Bidders;
4. Approval of the Progress Schedule;
5. Approval of the Schedule Submittal; and,
6. Submission of the Pre-Construction Photographs.

- E. **ULTRA LOW SULFUR DIESEL FUEL AND BEST AVAILABLE TECHNOLOGY REPORTING:** The Contractor must submit reports to the Commissioner regarding the use of Ultra Low Sulfur Diesel Fuel in Non-Road Vehicles, and the implementation of Best Available Technology (BAT), as set forth in Article 5.4 of the Contract. Such reports must be submitted in accordance with the schedule, format, directions, and procedures established by the Commissioner.



1.11 PERFORMANCE OF WORK DURING NON-REGULAR WORK HOURS:

- A. **NON-REGULAR WORK HOURS:** The Commissioner may issue a change order in accordance with Article 25 of the Contract which, (1) directs the Contractor to perform the Work, or specific components thereof, during other than regular work hours (i.e., evenings, weekends and holidays), and (2) provides compensation to the Contractor for costs in connection with the performance of Work during other than regular work hours. The Commissioner may issue a change order if a delay has occurred and such delay is not the fault of the Contractor, or if the Work is of such an important nature that delay in completing such work would result in serious disadvantage to the public.
- B. **PROCEDURE:** The Contractor must: (1) obtain whatever permits may be required for performance of the Work during other than regular business hours, and (2) pay all necessary fees in connection with such permits. In addition, if directed by the Commissioner, the Contractor must make immediate application to the Commissioner of the Department of Labor, State of New York, for dispensation in accordance with Subdivision 2 of Section 220 of the Labor Law.

1.12 INTERRUPTION OF SERVICES AT EXISTING FACILITIES:

- A. **EVENING AND WEEKEND WORK** - Where performance of the Work requires the temporary shutdown(s) of services, such shutdown(s) must be made at night or on weekends or at such times that will cause no interference with the established routines and operations of the facility in question.
 - 1 Where weekend or evening work is required due to unavoidable service shutdowns, such work will be performed at no extra cost to the City. Components of the Work that must be performed during other than regular work hours are indicated in the Drawings and/or the Specifications.
- B. **INTERRUPTION OF EXISTING FACILITIES:**
 - 1 The Contractor must not interrupt any of the services of the facility nor interfere with such services in any way without the permission of the Commissioner. Such interruption or interferences must be made as brief as possible, and only at such time stated.
 - 2 Under no circumstances will the Contractor, its subcontractors, or its workers, be permitted to use any part of the project as a shop, without the permission of the Commissioner.
 - 3 Unnecessary noise must be avoided at all times and necessary noise must be reduced to a minimum.
 - 4 Toilet facilities, water, and electricity must be operational at all times (i.e. 24/7). No services of the facility can be interrupted in any way without the permission of the Commissioner. Careful coordination of all Work with the Resident Engineer must be done to maintain the operational level of the Project personnel at the facility.
 - 5 The Contractor must schedule the Work to avoid noise interference that will affect the normal functions of the facility. In particular, construction operations producing noises that are objectionable to the functions of the facility must be scheduled at times of day or night, day of the week, or weekend, which will not interfere with personnel at the facility. Any additional cost resulting from this scheduling will be borne by the Contractor.
 - 6 The Contractor must arrange to work continuously, including evening and weekend hours, if required, to assure that services will be shut down only during the time actually required to make the necessary connections to the existing facility.
 - 7 The Contractor must give ample written notice in advance to the Commissioner and personnel at the facility of any required shutdown.



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PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 10 00



**SECTION 01 31 00
PROJECT MANAGEMENT AND COORDINATION**

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].
- B. LEED: Refer to the Addendum to identify whether this Project is designed to comply with a Certification Level according to the U.S. Green Building Council's Leadership in Energy & Environmental Design (LEED) Rating System, as specified in Section 01 81 13.03 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v3 BUILDINGS or Section 01 81 13.04 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v4 BUILDINGS.
- C. COMMISSIONING: Refer to the Addendum to identify whether this Project will be commissioned by an independent third party under separate contract with the City of New York (City). Commissioning will be in accordance with ASHRAE and USGBC LEED-NC procedures, as described in Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS, and/ or Section 01 91 15 GENERAL COMMISSIONING REQUIREMENTS FOR BUILDING ENCLOSURE COMMISSIONING. The Contractor must cooperate with the commissioning agent and provide whatever assistance is required.

1.2 SUMMARY:

- A. This Section includes administrative provisions for coordinating construction operations on the Project, including:
 - 1. Coordination Drawings
 - 2. Administrative and supervisory personnel
 - 3. Project meetings
 - 4. Requests for Interpretation (RFIs)
- B. This Section includes the following:
 - 1. Definitions
 - 2. Coordination
 - 3. Submittals
 - 4. Administrative and Supervisory Personnel
 - 5. Project Meetings
 - 6. Requests for Interpretation (RFI's)
 - 7. Correspondence
 - 8. Contractor's Daily Reports
 - 9. Alternate and Substitute Equipment
- C. RELATED SECTIONS:
 - 1. Section 01 10 00 SUMMARY
 - 2. Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION
 - 3. Section 01 33 00 SUBMITTALS
 - 4. Section 01 35 26 SAFETY REQUIREMENTS
 - 5. Section 01 73 00 EXECUTION REQUIREMENTS
 - 6. Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL



7. Section 01 77 00 CLOSEOUT PROCEDURES

1.3 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.
- B. Design Consultant: "Design Consultant" must mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.4 COORDINATION:

- A. Coordination: The Contractor must coordinate its construction operations, including those of its subcontractors, with other entities to ensure the efficient and orderly installation of each part of the Work. The Contractor must coordinate the various operations required by different Sections of the Specifications that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence in order to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components to ensure maximum access for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
 - 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and access for required maintenance, service, and repair of all components, including mechanical and electrical.
- B. The Contractor must prepare memoranda for distribution to its subcontractors and other involved entities, outlining special procedures required for coordination. Such memoranda must include required notices, reports, and meeting minutes as applicable.
- C. Administrative Procedures: The Contractor must coordinate scheduling and timing of required administrative procedures with other construction activities and activities of its subcontractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include without limitation the following:
 - 1. Preparation of Contractor's Construction Schedule.
 - 2. Installation and removal of temporary facilities and controls.
 - 3. Delivery and processing of submittals.
 - 4. Progress meetings.
 - 5. Pre-installation conferences.
 - 6. Startup and adjustment of systems.
 - 7. Project closeout activities.
- D. Conservation: The Contractor must coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
- E. Salvaged Items, Material and/or Equipment: The Specifications may identify certain items, materials or equipment which must be salvaged by the Contractor and handled or disposed of as directed. The



Contractor must comply with all directions in the Specifications regarding the salvaging and handling of identified items, material or equipment.

1.5 SUBMITTALS:

- A. Submit shop drawings, product data, samples etc., in compliance with Section 01 33 00 SUBMITTAL PROCEDURES.
- B. Coordination Drawings: The Contractor must prepare applicable Coordination Drawings in compliance with the requirements for Coordination Drawings in Section 01 33 00 SUBMITTAL PROCEDURES.
- C. Safety Plan in compliance with Section 01 35 26 SAFETY REQUIREMENTS PROCEDURES.
- D. Waste Management Plan in compliance with Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
- E. Key Personnel Names: Within fifteen (15) Days after the Notice to Proceed (NTP), the Contractor must submit a list of key personnel assignments of the Contractor and its subcontractors, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in case of the absence of individuals assigned to Project.
 - 1. Post copies of the list in Project meeting room, in temporary field office, and by each temporary telephone. Keep the list current at all times.
 - 2. In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work. Include special personnel required for coordinating all operations by its subcontractors.

1.6 PROJECT MEETINGS:

- A. General: The Resident Engineer will hold regularly scheduled construction progress meetings at the site, at which time the Contractor and appropriate subcontractors must have their representatives present to discuss all details relative to the execution of the work. The Resident Engineer will preside over these meetings.
 - 1. Agenda: Prior to each meeting, the Resident Engineer will consult with the Contractor and will prepare an agenda of items to be discussed. In general, after informal discussion of any item on the agenda, the Resident Engineer will summarize the discussion in a brief written statement, and the Contractor will then dictate a brief statement for the record.
 - 2. Coordination: In addition to construction progress meetings called by the Resident Engineer, the Contractor must hold regularly scheduled meetings for the purpose of coordinating, expediting and scheduling the work in accordance with the master coordinated Job Progress Chart. The Contractor and its subcontractors, material suppliers or vendors whose presence is necessary, are required to attend. These meetings may, at the discretion of the Contractor, be held at the same place and immediately following the Project meetings held by the Resident Engineer. Minutes of these meetings must be recorded, typed and printed by the Contractor and distributed to all parties concerned.
- B. PRECONSTRUCTION KICK-OFF MEETING:
 - 1. The Resident Engineer will schedule a preconstruction kick-off meeting either at DDC's main office or at the Project site to review responsibilities and personnel assignments and clarify the role of each participant. Unless otherwise directed, the Design Consultant will record and distribute meeting minutes.



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2. Attendees: Authorized representative of the Sponsor Agency; Design Consultant; the Contractor and its superintendents, subcontractor(s) and their superintendent(s); LEED sub-consultant and Commissioning Authority /Agent (CxA) as applicable and other concerned parties. All participants at the meeting must be familiar with the Project and authorized to conclude matters relating to the Contract Work.
 3. Agenda: Includes without limitation the following as applicable:
 - a. Establishing construction schedule;
 - b. Schedule for regular construction meetings;
 - c. Phasing;
 - d. Critical Work sequencing and long-lead items;
 - e. Designation of key personnel and their duties;
 - f. Reviewing application for payment and change order procedures;
 - g. Procedures for RFIs;
 - h. Review permits and approval requirements;
 - i. Review all recent administrative code reporting requirements relating to the Project, (i.e. LL 77, LL86 etc.);
 - j. Procedures for testing and inspecting;
 - k. Reviewing special conditions at the Project site;
 - l. Distribution of the Contract Documents;
 - m. Submittal procedures;
 - n. Safety procedures;
 - o. LEED requirements;
 - p. Commissioning requirements;
 - q. Preparation of record documents;
 - r. Historic Treatment requirements;
 - s. Use of the premises;
 - t. Work restrictions;
 - u. Sponsor Agency occupancy requirements;
 - v. Responsibility for temporary facilities, services, and controls;
 - w. Construction Waste Management and Disposal;
 - x. Indoor Air Quality Management Plan;
 - y. Dust Mitigation Plan;
 - z. Office, work, and storage areas;
 - aa. Equipment deliveries and priorities;
 - bb. Security;
 - cc. Progress cleaning; and,
 - dd. Working hours;
- C. CONSTRUCTION PROGRESS MEETINGS:
1. The Resident Engineer will schedule and conduct construction progress meetings at bi-weekly intervals or as otherwise determined. All participants at the meeting must be familiar with the Project and authorized to conclude matters relating to the Work. Unless otherwise directed, the Design Consultant will record and distribute meeting minutes.



2. Attendees:
 - a. Design Consultant and applicable sub-consultants;
 - b. Sponsor Agency Representative;
 - c. Representatives from the Contractor, sub-contractor(s), suppliers or other entities involved in the current progress, planning, coordination or future activities of the Work; and,
 - d. Other appropriate DDC personnel, DDC consultants and concerned parties.
3. Agenda: Includes without limitation the following:
 - a. Review the Construction Schedule and progress of the Work. Determine if the Work is on time, ahead of schedule or behind schedule. Determine actions to be taken to maintain or accelerate the schedule;
 - b. Review and approve prior meeting minutes and follow up open issues;
 - c. Coordinate work between each subcontractor;
 - d. Sequence of Operations;
 - e. Status of submittals, deliveries, and off-site fabrication;
 - f. Status of inspections and approvals by governing agencies;
 - g. Temporary facilities and controls;
 - h. Review Site Safety;
 - i. Quality and work standards;
 - j. Field observations;
 - k. Status of correction of deficient items;
 - l. RFI's;
 - m. Pending changes;
 - n. Status of outstanding payments and change orders;
 - o. LEED requirements including Construction Waste Management, Indoor Air Quality Plan, Dust Mitigation and Commissioning; and,
 - p. Status of Administrative Code reporting requirements related to the Project.

1.7 REQUESTS FOR INFORMATION (RFI):

- A. Procedure: Immediately on discovery of the need for information or interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, the Contractor must prepare and submit an RFI in the form specified by the Resident Engineer.
 1. RFI must originate with the Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
 2. Coordinate and submit RFI in a prompt manner to the Resident Engineer so as to avoid delays in Contractor's Work or Work of its subcontractors.
 3. RFI Log: The Contractor must prepare, maintain, and submit a tabular log of RFIs organized by the RFI number monthly to the Resident Engineer, or more frequently if directed by the Resident Engineer.
 4. On receipt of responses and action to the RFI, the Contractor must update the RFI log and immediately distribute the RFI response to affected parties. Review response(s) and notify the Resident Engineer immediately if the Contractor disagrees with response(s).



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1.8 CORRESPONDENCE:

- A. Copies of all correspondence to DDC must be sent directly to the Resident Engineer at the job site.

1.9 CONTRACTOR'S DAILY REPORTS:

- A. The Contractor must prepare and submit Daily Construction Progress Reports as outlined in Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 31 00



**SECTION 01 32 00
CONSTRUCTION PROGRESS DOCUMENTATION**

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required Work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for establishing an effective base line schedule for the Project and documenting the progress of construction during performance of the Work by developing and revising as necessary, various documents including but not limited to the following:
1. Submittals schedule
 2. Daily construction reports
 3. Material location reports
 4. Field condition reports
 5. Special reports
- B. RELATED SECTIONS: :
- | | |
|------------------------|------------------------------|
| 1. Section 01 10 00 | SUMMARY |
| 2. Section 01 32 22 | PHOTOGRAPHIC DOCUMENTATION |
| 3. Section 01 32 16.10 | PROJECT SCHEDULES (METHOD A) |
| 4. Section 01 32 16.20 | PROJECT SCHEDULES (METHOD B) |
| 5. Section 01 32 16.30 | PROJECT SCHEDULES (METHOD C) |
| 6. Section 01 33 00 | SUBMITTAL PROCEDURES |
| 7. Section 01 40 00 | QUALITY REQUIREMENTS |

1.3 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.
- B. Design Consultant: "Design Consultant" must mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.



PART II – PRODUCTS

2.1 SUBMITTALS SCHEDULE:

- A. Preparation: The Contractor must submit a schedule of submittals, arranged in chronological order by dates required by the construction schedule. Include time required for review, re-submittal, ordering, manufacturing, fabrication, and delivery when establishing dates. The Submittals Schedule must show all of the following types of submittals:
1. Shop and Coordination Drawings
 2. Material Samples
 3. Catalog Cuts
 4. Test and Evaluation Reports
 5. Field Test Reports
 6. Sample Warranties
 7. Certificates
 8. Qualification Data
 9. Closeout Submittals
- B. Submittals: At the kick-off meeting, the Contractor must have a preliminary Submittals Schedule, and must review this Schedule with the Resident Engineer and the Design Consultant. Within ten (10) Days after the kick-off meeting, the Contractor must complete the Submittals Schedule, including all submission dates, required delivery dates, and fabrication times. The Contractor must include an updated Submittals Schedule with all Progress Payment applications.
- C. Review: The Resident Engineer will review the Submittals Schedule submitted by Contractor. Upon acceptance, the Resident Engineer will date and sign the schedule as approved and transmit it to the Design Consultant, Contractor, and others within DDC as the Resident Engineer deems appropriate. If so directed by the Commissioner, the Contractor must revise the Submittals Schedule to indicate a submission date for specified shop drawings and/or material samples within sixty (60) Days after the kick-off meeting. The Contractor must resubmit the Submittals Schedule as necessary to include all review comments.

2.2 REPORTS:

- A. Daily Construction Reports: The Contractor must submit to the Resident Engineer written Daily Construction Reports at the end of each day that work was performed, recording basic information such as the date, day, weather conditions, and contract days passed, remaining contract duration/days and the following information concerning the Project.

Information: The reports must be prepared by the Contractor's Superintendent and must bear the Contractor's Superintendents signature. Each report must contain the following information:

1. List name of Contractor, subcontractors, their work force in each category, and details of activities performed;
2. The type of materials and/or major equipment being installed by the Contractor and/or by each subcontractor;
3. The major construction equipment being used by the Contractor and/or subcontractors;
4. Material and Equipment deliveries;
5. High and low temperatures and general weather conditions;
6. Accidents;
7. Meetings and significant decisions;
8. Unusual events;
9. Stoppages, delays, shortages, and losses;
10. Meter readings and similar recordings;



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11. Emergency procedures;
12. Orders and/or requests of authorities having jurisdiction;
13. Approved Change Orders received and implemented;
14. Field Orders and Directives received and implemented;
15. Services connected and disconnected;
16. Equipment or system tests and startups;
17. Partial Completion(s) and occupancies; and,
18. Substantial Completion(s) authorized;

NOTE: If there is NO ACTIVITY at site, a daily report indicating so and the reason for no activity at the site must be submitted.

- B. Material Location Reports: The Contractor must submit a Material Location Report at weekly OR monthly intervals as determined and established by the Resident Engineer. Such report must include a comprehensive list of materials delivered to and stored at Project site. List must be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.
- C. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit a Request For Information (RFI) form with a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.3 SPECIAL REPORTS:

- A. Accident report, incident report, special condition report for the conditions out of control of any party involved with the Project effecting Project progress, explaining impact on the Project schedule and cost if any.

PART III – EXECUTION (Not Used)

END OF SECTION 01 32 00



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**SECTION 01 32 16.10
PROJECT SCHEDULES (METHOD A)**

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SECTION 01 32 16.10

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. This section includes the following:
 - 1. Methods
 - 2. Definitions
 - 3. Preliminary, Baseline, and Project Schedule Preparation Timeline
 - 4. Preliminary Project Schedule Development
 - 5. Project Schedule
 - 6. Activity and Calendar Coding Structure
 - 7. Work Breakdown Structure (WBS)
 - 8. Major Milestones
 - 9. Short (Three-Week) Interval/Two-Week Look-Ahead
 - 10. Submittals
 - 11. Project Schedule Updating
 - 12. Time Impact Analysis

1.3 METHODS:

- A. The Contractor must comply with Project schedule development and updating requirements as specified herein.
 - 1. The Contractor must employ or retain the services of a Construction Scheduler with verifiable construction scheduling experience, subject to review and acceptance by the City. Upon request, the Contractor must provide the City with details of qualifications and experience of the proposed scheduling staff member(s).
 - 2. The Contractor must prepare, update, and maintain a detailed Project Schedule using a version of scheduling software that is compatible with the City's Oracle Primavera P6 Enterprise Project Portfolio Management (EPPM). All schedule submittals must be developed using Oracle's Primavera P6 EPPM software. Schedules must be developed using accepted CPM techniques using the precedence diagramming method (PDM). The Project Schedule must be developed following Defense Contract Management Agency (DCMA) and American Association of Cost Engineering International (AACE International) guidance. The Contractor will be required to use the Contractor's



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own P6 license (whether single-user or Enterprise license), unless otherwise directed by the Commissioner. If directed by the Commissioner prior to the Notice to Proceed (NTP), the Contractor must use the Department's P6 Enterprise license and develop the Progress Schedule within the Department's Enterprise environment.

3. Once the Baseline Schedule is accepted by the City, progress updates to the Project Schedule must be submitted monthly, unless otherwise directed by the City, until Substantial Completion. The Data Date for the schedule updates must use the last Friday of the month, or as directed by the City.
4. The Contractor will be responsible for providing the monthly schedule updates once the Baseline Schedule is approved. Each monthly schedule update must be accompanied with a schedule narrative that explains the following:
 - a. The progress of work during that particular period of performance,
 - b. Any changes in schedule Logic,
 - c. The physical conditions that were used to update every Activities Percent Complete,
 - d. Any change in actual Start and Finish Dates,
 - e. Any Duration changes,
 - f. Any added and deleted Activities, and
 - g. Any added Extra Work (e.g. change orders).

1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

<u>Term</u>	<u>Definition</u>
Activity	A representation of a discrete portion of the overall scope of Work or an event through Duration and description in a CPM schedule.
Baseline Schedule	The planned and detailed CPM schedule of Activities, including all Logic, Durations, Resource and Cost Loading, and showing the entire scope of Work. The Baseline Schedule must be accepted by the City.
Critical Path	The longest sequence of Activities in a network which establishes the minimum length of time for accomplishment of the end event of the Project.
Critical Path Method (CPM)	A management technique used to plan and control a Project which combines all relevant information into a single plan defining the sequence and Duration of operations and depicting the interrelationship of the Work elements required to complete the Project.
Current Schedule	The most recently updated schedule that captures progress to date and forecasts the dates for each Activity.
Data Date	The date used as a starting point for scheduling calculations. The Data Date is changed to the current end of period date when a schedule is updated for progress.
Duration	The amount of time, in workdays, an Activity will take to perform.



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<u>Term</u>	<u>Definition</u>
Finish Date	The earliest estimated date an Activity is calculated to be complete, based on the estimated performance of all prior Activities to which the Activity is logically connected in a progressive relationship.
Free Float	The calculated amount of time that the estimated start or finish of an Activity can be delayed without impacting the start or finish of other downstream Activities logically connected in a progressive relationship. (See Finish Date and Late Finish).
Fragnet	Fragmentary network: a portion of a schedule detailing impacts of an event on specific Activities in the broader schedule.
Inclement Weather	Any weather condition, the duration of which varies in excess of the 3-year average published by the National Oceanic and Atmospheric Administration (NOAA) information for the local area.
Integrated Project Schedule	The Commissioner's overall schedule covering design, procurement and construction. The Commissioner will use the Contractor's Project Schedule to update the Integrated Project Schedule.
Late Finish	An estimate of the latest plausible date an Activity's completion can be postponed without rendering as unachievable the required completion of any downstream Milestones to which the Activity is Logically connected to in a progressive relationship.
Late Start	An estimate of the latest plausible date an Activity's start can be postponed without rendering as unachievable the required completion of any downstream Milestones to which the Activity is Logically connected to in a progressive relationship.
Logic	A direct progressive relationship between Activities where one Activity's performance restricts the performance of another Activity.
Milestone	A key or critical point in time for reference or measurement.
Network Diagram	A graphic diagram of a network schedule, showing Activities and Activity relationships.
Original Duration	The estimated amount of time, in Work Days, an Activity is expected to take to complete at the beginning of a Project as anticipated by the Contractor based on its planned means and methods at time of bid and documented in the Baseline Schedule.
Percent Complete	The percentage of the scope of Work represented by an Activity completed as of the Data Date calculated as physical percent complete for payment purposes.
Project Schedule	The Contractor's schedule used to manage the orderly and expeditious completion of the Work. The Project Schedule is initially the accepted Baseline Schedule, and is updated throughout the Project.
Remaining Duration	The amount of time, in Work Days, the remaining scope of Work represented by an Activity is expected to take to complete, measured from the current Data Date.



<u>Term</u>	<u>Definition</u>
Resource and Cost Loading	Values assigned for estimated dollars, manpower, equipment and/or materials necessary to complete the scope of Work represented by a specific Activity.
Recovery Schedule	A Recovery Schedule outlining and incorporating extraordinary efforts required to recover lost time with the aim of achieving completion of the Project within the stipulated contract Duration, plus authorized time extensions. In such case, special attention must be given to minimize delays as much as possible and must establish the nature of efforts; for instance, resources and equipment required, extended hours of work, weekend work, accelerated fabrication, required action(s) or effort(s) by the Contractor, its subcontractors, consultants, clients, end users and/or other concerned parties to recover the schedule.
Revised and/or Updated Schedule	A Baseline Schedule, Progress Project Schedule, or Recovery Schedule for the Project that shows the actual Duration of all the completed Activities, including Duration of and the reasons for delays, if any has occurred, AND revisions to all remaining Activities of the Contractor and its subcontractors, including changes, if any, to logical ties, interrelations and the sequence of each of the outlined Activities. Any such revisions should be shown on the row just below the approved schedule of the respective Activity so that revisions can be compared. The Revised and/or updated Schedule must be reviewed and approved by the City.
Start Date	The earliest estimated date an Activity is calculated to begin, based on the estimated performance of all prior Activities to which the Activity is logically connected in a progressive relationship.
Time Impact Analysis	A forward looking (prospective) schedule analysis used to forecast the impact to the Critical Path and to Milestone Finish Dates caused by a single event or series of events. Time Impact Analysis is not a retrospective (forensic) schedule analysis or a what-if schedule analysis of a potential event.
Total Float	The amount of time the start or finish of an Activity can be delayed without affecting the Project completion date.
Work Breakdown Structure (WBS)	WBS is a deliverable-oriented decomposition of a Project into smaller components. A WBS provides the necessary framework for detailed cost estimating and control along with providing guidance for schedule development and control.
Work Days (WD)	Work Days are every consecutive day in the calendar, excluding weekends (Saturday and Sunday) and holidays.

1.5 PRELIMINARY, BASELINE, AND PROJECT SCHEDULE PREPARATION TIMELINE:

- A. Upon receipt of the NTP, the Contractor must promptly prepare a preliminary Project Schedule and subsequently a Baseline Schedule and must submit for the City's acceptance as follows:
1. The preliminary Project Schedule must be submitted no later than fifteen (15) Days after NTP.
 2. The initial submittal of the Baseline Schedule must be provided to the City for review no later than thirty (30) Days after NTP.



3. The Contractor must incorporate all corrections and revisions required by the City and provide an updated version of the Baseline Schedule for review and acceptance no later than sixty (60) Days after NTP to ensure that the Baseline Schedule is accepted. The sixty (60) Days must include fourteen (14) Days review times for each submittal of the Baseline Schedule.
4. Once accepted, the Baseline Schedule will be the basis of Project Schedule updates.

1.6 PRELIMINARY PROJECT SCHEDULE DEVELOPMENT:

- A. The preliminary Project Schedule must be a detailed plan (division level per Construction Specifications Institute (CSI) MasterFormat) of all operations, including submittals, permitting, testing, and construction Activities, for either the first ninety (90) Days after NTP or to the point where the Contractor plans to mobilize on site (whichever is greater). This submittal will also depict a summary level (section level per CSI MasterFormat) schedule of the major Activities for the remainder of the Work.
 1. All Activities for Contractor mobilization, procurement, and construction Activities within the first sixty (60) Days, including permits and submittals. All remaining work forecasted after the first sixty (60) Days must be summarized through the Contract's completion date.
 2. All submittal and procurement Activities for long lead items.
 3. The Project's Critical Path.
 4. An electronic copy of the schedule in either MS Project (.MPP) or Primavera P6 Professional Format (.XER).
- B. The preliminary Project Schedule will be reviewed by the City and returned with comments, as necessary, within fourteen (14) Days of submittal receipt. Information from the preliminary Project Schedule will be the general foundation for development of the Baseline Schedule.

1.7 PROJECT SCHEDULE:

- A. The Baseline Schedule must show the sequence in which the Contractor proposes to perform the Work, and account for all major and intermediate Milestone Activities, phasing, restrictions of access, availability of work areas and the availability and use of labor, materials, and equipment.
- B. After the Baseline Schedule is approved, the Project Schedule must be the Contractor's working schedule and must be used to plan, organize, execute, and track the Project. The Project Schedule is the primary vehicle used to report actual performance, progress, and convey the Contractor's execution plan to complete the Work.
- C. The Project Schedule must show the sequence in which the Contractor proposes to perform the Work, and account for all major and intermediate Milestone Activities, phasing, restrictions of access, availability of work areas and the availability and use of labor, materials, and equipment.
- D. The Project Schedule must be the Contractor's working schedule used to plan, organize, execute, and track the Project. The Project Schedule is the primary vehicle used to report actual performance, progress, and convey the Contractor's execution plan to complete all remaining Work.
- E. All delay claims must be based on the current approved updates of the Project Schedule.
- F. The Contractor must confirm in writing that all subcontractors performing any portion of the Work are in agreement with the accepted Baseline Schedule and the monthly updates.
- G. The amount of detail represented in the Baseline and Project Schedule and supporting documents submitted must, at a minimum, include the following items:



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1. Contract Milestones must be identified and included in the Baseline and Project Schedule.
 2. All submittal, owner review & approval, purchase, manufacture, and delivery Activities for all major materials and equipment.
 3. Deliveries of owner-furnished equipment and/or materials.
 4. Preparation, submittal, and approval of drawings, material samples, and safety plans.
 5. Preparation, submittal, review, and approval of permits required by all regulatory agencies and other third parties.
 6. Performance of tests, submission of test reports, and approval of test results.
 7. Commissioning Activities for all commissioned systems and equipment is to be clearly delineated and scheduled such that they will be completed prior to Substantial Completion. Such Activities must include, at a minimum, Pre-Functional testing and check sheets; Testing, Adjusting, and Balancing (TAB) verification; Functional Testing, including testing of all controls; and Owner's demonstration and orientation.
 8. Completion dates of all items required for phased completion (if applicable).
 9. Completion dates of all items required for Substantial Completion.
 10. Completion dates of all items required to obtain a Temporary Certificate of Occupancy (TCO) and Certificate of Occupancy (CO).
 11. Completion dates for close-out of regulatory and punch list items prior to Final Acceptance and transfer of the Project.
 12. Any additional detail requested by the Commissioner.
- H. Activities identified in the Baseline and Project Schedule must have the Duration in units of whole Work Days. Construction Activity Durations must not exceed twenty (20) Work Days unless specifically approved by the City. This is to ensure that Activities are not generalized and that each Activity and sub-Activity are defined as narrowly as reasonable to facilitate schedule tracking. Durations for non-construction Activities such as procurement of materials, delivery of equipment, concrete curing, etc., may exceed twenty (20) Work Days without prior approval; however, these are still subject to review by the City. Durations must be based on the available resources required for performing each Activity and must be the result of definitive labor hours using established production rates, and with consideration of on-site working conditions. If requested by the City, the Contractor must justify the reasonableness of a planned Duration.
- I. Activity descriptions must use plain language that clearly and uniquely defines each Activity. Each description must include a verb or work function (e.g. submit, form, pour, etc.), an object (e.g. slab, foundation, etc.) and, for any construction Activities, a specific location. The Work related to each Activity must be limited to one responsibility and one trade.
- J. Activity relationships must be assigned to clearly establish predecessor and successor relationships to each Activity. Open-ended Activities are not permitted with the exception of the first and last Activity in the network, the first Activity being NTP and the last being Final Acceptance. The use of relationship lag times is discouraged and only permitted with prior approval by the City. The use of negative lag is never permitted.
- K. Activity constraint dates are only to be used to reflect contractual constraints unless specifically authorized by the City.
- L. Float or slack, in any schedule, must not be for the exclusive use or benefit of either the City or the Contractor, but must be available for use by both the City and the Contractor.
- M. Each resubmittal after the Project Schedule is delivered for acceptance must comply with all requirements of this section. Review and response by the City will be given within fourteen (14) Days after resubmission. The Contractor's receipt of the comments within the time specified must not, in any way, affect the Contractor's responsibility to complete the Project within the time fixed in Schedule A.
- N. Failure by the City to return comments or indicate acceptance status will in no way relieve the Contractor's obligation to submit monthly schedule updates.



- O. At the request of the City, the Contractor must be required to make a presentation to explain or clarify the intended logical sequence of construction Activities depicted in the detailed Project Schedule. The Contractor and designated scheduler must discuss anticipated challenges and outline construction methodology and flow of work to show how and when major Milestones will be achieved. In addition, the Contractor may, at no cost to the City, be required to participate in additional Project meetings necessary to obtain acceptance of the above-noted submittals.

1.8 ACTIVITY AND CALENDAR CODING STRUCTURE:

- A. The Baseline and Project Schedules must contain a sufficient number of Activities to represent adequate planning and execution of the Work so that it shows an accurate flow of work and demonstrates an understanding of the Project by the Contractor.
- B. Activity ID and Calendar Coding
1. The Contractor's proposed Activity and calendar coding and must be submitted with the preliminary Project Schedule. A meeting may be requested by the City to discuss the scheme and other schedule information prior to the submittal of the Project Schedule. The accepted coding scheme and WBS Structure must be incorporated into the Project Schedule.
- C. Activity ID Coding
1. All Activities/ Resources/ Calendars (Baseline and Project Schedules) must be coded inside the P6 Project Environment / Project Level (NOT the Global Environment/ Enterprise Level) to facilitate selection, sorting and preparation of reports.
 2. Activity coding must consist of the Project ID followed by a dash, followed by Activity coding (PROJECT ID-ACTIVITY CODE). Activity codes must be created at the Project level and must utilize the coding scheme outlined in the table below:

Activity Code	Meaning
RESP	<u>Responsibility</u> : Identify the party (e.g. Contractor, subcontractor, City, etc.) responsible for the Activity.
PHAS	<u>Phase</u> : Breakdown of Activities in Milestones, pre-construction, procurement, construction and close-out Activities.
LOCN	<u>Location</u> : Breakdown by floor or elevation.
AREA	<u>Area</u> : Breakdown by room, area, block or wing. May be used as a subdivision of PHAS to include Milestones, permits, subcontractor approvals, submittals, fabrication and delivery, and subdivision of the Site and buildings into Logical modules, such as by blocks, wings, etc.
TRAD	<u>Trade</u> : Breakdown by CSI Code or section number in the Specifications.

- a. Description of schedule Activities must include terminology that represents the scope of work associated with that particular Activity. Terminology used to describe similar actions must be consistent across all segments of work.
- b. Naming convention for schedule Activities must be descriptive and indicate the associated work covered by the Activity. Activities must use a verb, noun, and location of the work in the Activity name.



3. Project Calendar Coding

- a. All calendars created and assigned to Activities must be Project-level calendars. The Calendar Name must consist of the Project ID number followed by a dash, followed by a descriptive Calendar Name (PROJECT ID-CALENDAR NAME).

1.9 WORK BREAKDOWN STRUCTURE:

- A. Structure must be submitted with the preliminary Project Schedule. The levels (nodes) must include, but not be limited to:
 - 1. LEVEL 01 – The Project Level.
 - 2. LEVEL 02 – Contains a minimum of four (4) nodes: Pre-Construction, Procurement, Construction or Phase of Construction, and Closeout.
 - 3. LEVEL 03 – Decomposition of each of the four (4) nodes in Level 02 into its constituent parts. This level must target specific, tangible, deliverable scopes of Project Work.
- B. The Contractor's proposed WBS must be submitted with the preliminary Project Schedule. The accepted WBS Structure must be incorporated into the Baseline and Project Schedule.

1.10 MAJOR MILESTONES:

- A. The schedule must include both contractual and non-contractual Milestones that are provided by the City. These Milestones must be properly associated with the related Work and maintained to represent the progress of the Project.

1.11 SHORT (THREE-WEEK) INTERVAL / TWO-WEEK LOOK-AHEAD:

- A. On a bi-weekly basis, the Contractor must provide a three (3) week short interval schedule in a format satisfactory to the City. The purpose of this schedule is to report the actual progress of the past week against the previous short interval look-ahead Activities and add any additional Activities planned for the next two (2) weeks. Electronic files and hard copies must be provided to the City on the first day of each work week with the prior week's actual progress included.
- B. Each task listed on the short interval schedule must be representative of the most current Project Schedule Update and include a reference to an Activity shown on the current update.

1.12 SUBMITTALS:

- A. General
 - 1. Development of the Baseline Schedule and updating of the Project Schedule must follow the DCMA and AACE International guidelines.
 - 2. Each electronic submission of the Project Schedule must be assigned a unique file name consisting of the Project ID (as noted on the NTP followed by a dash followed by a unique file name clearly marked (i.e. ProjID- B000 = B/L rev0, ProjID-B001 = B/L rev01 etc.) to indicate the specific submission. Similarly, update submittals must be named ProjID-Uxxx where xxx is a sequential number, starting with 001, indicating the revision or issue number.
 - 3. The Contractor must provide all submittals in electronic format and two hard copies.
- B. Preliminary Project Schedule



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1. For acceptance of the preliminary Project Schedule, the Contractor must submit the following:
 - a. Two (2) 11" x 17" hard copies of the proposed preliminary Project Schedule, as well as the native electronic schedule data file, in .XER file format, per the direction of the City.
 - b. A Schedule Narrative Report detailing the Contractor's initial plan for executing the Contract work within the allotted Contract Duration, and include the following explanation of their provided preliminary schedule:
 - i. The proposed WBS;
 - ii. All proposed Project Calendars;
 - iii. All proposed Activity Codes, clearly defined;
 - iv. The proposed Activity ID format; and
 - v. Schedule basis narrative, which must memorialize assumptions made in the development of the schedule.

C. Baseline Schedule

1. The City will normally return comments within ten (10) Work Days after receipt of the initial Project Schedule Submission. If any of the required submissions are returned to the Contractor for corrections or revisions, they must be resubmitted within five (5) Work Days from receipt of comments. Each resubmittal must comply with the requirements enumerated above. Review and response by the City will be given within ten (10) Work Days after resubmission.
2. At the request of the City, the Contractor will be required to participate in Project meetings necessary to obtain an acceptance of the above noted submittals.
3. Baseline Schedule submittal must contain a Narrative Report. It must include the following, or as directed by the City:
 - a. A description of the Project scope and how the Work is represented in the schedule Activities;
 - b. A description of the overall sequence of major components of Work;
 - c. Planned work week for each definable feature of work;
 - d. Description of the Critical Path and near Critical Paths;
 - e. How weather will be accommodated in the schedule, including a description of the weather calendar and the Activities it is applied to, and the NOAA Inclement Weather data that defined the number of non-work days;
 - f. How regulatory, operational or third-party constraints are accommodated in the schedule;
 - g. Description of key Project coordination points or events;
 - h. Discussion of long lead items and basis of time frames for submittals; and
 - i. Potential opportunities and risks, including quantification of the schedule reduction or expansion.

D. Project Schedule Updates

1. Every schedule submittal must be provided with a corresponding narrative. These schedule submittals and narratives are to be submitted in hard copy, as well as in the native electronic format, as attachments to emails or other media accepted by the City. When opened, the electronic format must provide flawless restoration of the native files (P6 (.XER) for Primavera and MS Word and/or Adobe Acrobat for Narrative and supporting document submittals).



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2. For each submittal of the updated Project Schedule, the following layouts, reports, and graphics are required in the specified formats, unless otherwise directed by the City:
 - a. The Contractor must furnish two (2) 11" x 17" color hard copies of the complete progress schedule with each initial schedule update and final update incorporating comments furnished by the City. Additionally, the Contractor must provide the native electronic schedule data file, in .XER file format with the initial and final schedule update submission.
 - b. An Activity bar chart Layout grouped by Activity Code and then sorted by Start Date, Finish Date, and then Total Float.
 - c. Each Activity line must display the Activity ID (Act ID), Description (Name), Original Duration (OD), Remaining Duration (RD), Start Date (ES), Finish Date (EF), and Total Float (TF), Baseline Original Duration (BL OD) Baseline Start (BL Start), Baseline Finish (BL Fin), Baseline Total Float (BL TF).
 - d. An Activities progress bar must show both current progress update ES and EF, and baseline ES and EF. The top line of the bar chart area must contain the updated ES and EF; the second line below must depict the accepted baseline ES and EF dates.
3. The City may request additional standard P6 reports from time to time at no additional cost.
4. The Monthly Update submittal must contain a Narrative Report. It must include the following, or as directed by the City:
 - a. Any changes to the schedule basis narrative;
 - b. Overall health of the Project;
 - c. Actual Activity Start Dates;
 - d. Actual Activity Finish Dates;
 - e. The physical conditions that were used to update Activities percent complete;
 - f. Percent of Work reported in place;
 - g. A description of the overall sequence of major components of Work;
 - h. Description of the Critical Path and near Critical Paths;
 - i. Description of key Project coordination points or events;
 - j. Discussion of long lead items and basis of time frames for submittals;
 - k. Potential opportunities and risks, including quantification of the schedule reduction or expansion;
 - l. Assumptions/exclusions made in the schedule;
 - m. Contract and Milestone completion date status:
 - i. Number of Days ahead or behind schedule and; and
 - ii. Days lost/gained compared with the previous update.
 - n. Lookahead report listing each Activity in the CPM schedule that is scheduled to be performed during the next reporting period;
 - o. Changes in Activity description, Logic, or Duration must be submitted as a separate Proposed Schedule and approved by the City prior to being submitted as an official update. Once allowed, said changes must be grouped and organized in the report in a manner that communicates in detail the rationale associated with each change and



the impact upon construction sequence, relationships and the Critical Path. A standard Digger Report is not sufficient to meet this requirement;

- p. Added/deleted Activities and the rationale associated with each action;
- q. Pending issues and status of other items;
- r. Permits;
- s. Contract modifications; and
- t. Extra Work, including change orders.

1.13 PROJECT SCHEDULE UPDATING:

- A. The initial updating must take place immediately after the City accepts the Contractor's Baseline Schedule. The Data Date for the first update must not exceed seven (7) Days from the date of receipt of the accepted Baseline Schedule, or as directed by the City.
- B. Subsequent updates of the Project Schedule must be submitted monthly until Substantial Completion. The schedule Data Date must be the last Work Day of the period unless otherwise directed by the City. Updates must be provided to the City no later than seven (7) Days after the 'schedule Data Date'.
- C. Updates must reflect actual or reasonably anticipated progress as of the last Work Day of the period.
- D. The City may request meetings with the Contractor to review the Project Schedule and narrative and jointly verify Project health and information.
- E. In addition, the City may request meetings with the Contractor's scheduling representative to:
 - 1. Resolve out-of-sequence Logic.
 - 2. Should out-of-sequence progress occur where Activities have reported progress without predecessor Activities being completed, the Contractor must obtain the City's approval in a Proposed Schedule before revising the Logic ties to reflect the way the Work is actually being performed. Use of progress override by default mechanisms that may be included in CPM scheduling software systems will not be allowed except on a case-by-case basis with the approval of the City. A written explanation for each instance must be included in the monthly submittal narrative.
 - 3. Assess the impact, if any, of any pending change orders.
 - 4. Incorporate accepted time extensions.
 - 5. Review revised Logic (as-built and projected) and changes in Activity Duration, cost, and labor hours assigned.
- F. Contractor's failure to provide required scheduling information within the required timeframe or to adhere to the currently accepted schedule may result in rejection of all or a portion of the progress payment until such time as the required schedule information is submitted and accepted by the City.
- G. Delays to the Critical Path – Whenever it becomes apparent from the monthly CPM schedule update that delays to the Critical Path have occurred due to action or inaction of the Contractor, and as a result the date for Substantial Completion will not be met, the Contractor must promptly take some or all of the following actions at no additional cost to the City, unless otherwise directed by the City:
 - 1. Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of Work.



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2. Increase the number of working hours per shift, shifts per day, or Work Days per week; the amount of construction equipment; the forms for concrete work; etc., or any combination of the foregoing to substantially eliminate the backlog of Work.
 3. Reschedule Activities to achieve maximum practical concurrence of accomplishment of Activities and comply with the revised schedule.
 4. Submit to the City for review a written statement of the steps the Contractor intends to take to remove or arrest the delay to the schedule.
 5. Add to its equipment and materials or construction forces, as well as increase the working hours, if operations for critical, less critical or non-critical Activities fall behind the Contractor's Baseline Schedule at any time during the construction period.
- H. The City may, at any time during the Project and at no additional cost to the City, require the Contractor to develop a more detailed schedule/ Fragnet than depicted in the Baseline Schedule to provide a clearer understanding of the effort needed to complete an Activity or group of Activities.
- I. If the City determines that either the Critical Path is in the negative by four (4) weeks, or that the Project's date for completion may be affected, the Contractor may be required, at no additional cost to the City, to prepare a Recovery Schedule. Such Recovery Schedule is subject to review and acceptance by the City. The Recovery Schedule must propose alternative methods, overtime, and other means available to the Contractor to recover the delays incurred to date.
- J. The Contractor must submit an "As-Built Schedule", as the last schedule update showing all Activities, with the exception of punch list and closeout tasks, at Substantial Completion. This schedule must reflect the exact manner in which the Project was actually constructed.

1.14 TIME IMPACT ANALYSIS:

- A. In addition to the requirements of the Standard Construction Contract Article 11, the Contractor must submit a Time Impact Analysis to the Engineer with all requests for time extension.
- B. The Time Impact Analysis must include a written narrative and supporting impact schedule Fragnet detailing the Project delays resulting from the alleged delay. The impact schedule Fragnet, separate and distinct from the Progress Schedule update, must demonstrate that the changes or anticipated delays affect Activities of the current accepted Progress Schedule. The impact schedule will be incorporated into the Progress Schedule only after it is accepted by the Commissioner and a time extension is approved. The Fragnet submitted as part of the Time Impact Analysis must illustrate the impact of these changes or delays on the date for Substantial Completion.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 32 16.10



**SECTION 01 32 16.20
PROJECT SCHEDULES (METHOD B)**

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SECTION 01 32 16.20

PART 1 – GENERAL

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- A. The Contractor must comply with Project schedule development and updating requirements as specified herein.
 - 1. The Contractor must employ or retain the services of a Construction Scheduler with verifiable construction scheduling experience, subject to review and acceptance by the City. Upon request, the Contractor must provide the City with qualifications and experience of the proposed scheduling staff member(s).
 - 2. The Contractor must prepare, update, and maintain a detailed Project Schedule using a version of scheduling software that is compatible with the City's Oracle Primavera P6 Enterprise Project Portfolio Management (EPPM). All schedule submittals must be developed using Oracle's Primavera P6 EPPM software. Schedules must be developed using accepted CPM techniques using the Precedence Diagramming Method (PDM). The Project Schedule must be developed following Defense Contract Management Agency (DCMA) and American Association of Cost Engineering International (AACE International) guidance. The Contractor will be required to use



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the Contractor's own P6 license (whether single-user or Enterprise license), unless otherwise directed by the Commissioner. If directed by the Commissioner prior to the Notice to Proceed (NTP), the Contractor must use the Department's P6 Enterprise license and develop the Progress Schedule within the Department's Enterprise environment.

3. Once the Baseline Schedule is accepted by the City, progress updates to the Project Schedule must be submitted monthly, unless otherwise directed by the City, until Substantial Completion. The Data Date for the schedule updates must use the last Friday of the month, or as directed by the City.
4. The Contractor will be responsible for providing the monthly schedule updates once the Baseline Schedule is approved. Each monthly schedule update must be accompanied with a schedule narrative that explains the following:
 - a) The progress of work during that particular period of performance;
 - b) Any changes in schedule Logic;
 - c) The physical conditions that were used to update every Activities Percent Complete;
 - d) Any change in actual Start and Finish Dates;
 - e) Any Duration changes;
 - f) Any added and deleted Activities; and,
 - g) Any added Extra Work (e.g., change orders).

1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

<u>Term</u>	<u>Definition</u>
Activity	A representation of a discrete portion of the overall scope of Work or an event through Duration and description in a CPM schedule.
Baseline Schedule	The planned and detailed CPM schedule of Activities, including all Logic, Durations, Resource and Cost Loading, and showing the entire scope of Work. The Baseline Schedule must be accepted by the City.
Critical Path	The longest sequence of Activities in a network which establishes the minimum length of time for accomplishment of the end event of the Project.
Critical Path Method (CPM)	A management technique used to plan and control a Project which combines all relevant information into a single plan defining the sequence and Duration of operations and depicting the interrelationship of the Work elements required to complete the Project.
Current Schedule	The most recently updated schedule that captures progress to date and forecasts the dates for each Activity.
Data Date	The date used as a starting point for scheduling calculations. The Data Date is changed to the current end of period date when a schedule is updated for progress.
Duration	The amount of time, in workdays, an Activity will take to perform.



<u>Term</u>	<u>Definition</u>
Finish Date	The earliest estimated date an Activity is calculated to be complete, based on the estimated performance of all prior Activities to which the Activity is logically connected in a progressive relationship.
Free Float	The calculated amount of time that the estimated start or finish of an Activity can be delayed without impacting the start or finish of other downstream Activities logically connected in a progressive relationship. (See Finish Date and Late Finish).
Fragnet	Fragmentary network: a portion of a schedule detailing impacts of an event on specific Activities in the broader schedule.
Inclement Weather	Any weather condition, the duration of which varies in excess of the 3-year average published by the National Oceanic and Atmospheric Administration (NOAA) information for the local area.
Integrated Project Schedule	The Commissioner's overall schedule covering design, procurement, and construction. The Commissioner will use the Contractor's Project Schedule to update the Integrated Project Schedule.
Late Finish	An estimate of the latest plausible date an Activity's completion can be postponed without rendering as unachievable the required completion of any downstream Milestones to which the Activity is Logically connected to in a progressive relationship.
Late Start	An estimate of the latest plausible date an Activity's start can be postponed without rendering as unachievable the required completion of any downstream Milestones to which the Activity is Logically connected to in a progressive relationship.
Logic	A direct progressive relationship between Activities where one Activity's performance restricts the performance of another Activity.
Milestone	A key or critical point in time for reference or measurement.
Network Diagram	A graphic diagram of a network schedule, showing Activities and Activity relationships.
Original Duration	The estimated amount of time, in Work Days, an Activity is expected to take to complete at the beginning of a Project as anticipated by the Contractor based on its planned means and methods at time of bid and documented in the Baseline Schedule.
Percent Complete	The percentage of the scope of Work represented by an Activity completed as of the Data Date calculated as physical percent complete for payment purposes.
Project Schedule	The Contractor's schedule used to manage the orderly and expeditious completion of the Work. The Project Schedule is initially the accepted Baseline Schedule, and is updated throughout the Project.



<u>Term</u>	<u>Definition</u>
Remaining Duration	The amount of time, in Work Days, the remaining scope of Work represented by an Activity is expected to take to complete, measured from the current Data Date.
Resource and Cost Loading	Values assigned for estimated dollars, manpower, equipment and/or materials necessary to complete the scope of Work represented by a specific Activity.
Recovery Schedule	A Recovery Schedule outlining and incorporating extraordinary efforts required to recover lost time with the aim of achieving completion of the Project within the stipulated contract Duration, plus authorized time extensions. In such case, special attention must be given to minimize delays as much as possible and must establish the nature of efforts; for instance, resources and equipment required, extended hours of work, weekend work, accelerated fabrication, required action(s) or effort(s) by the Contractor, its subcontractors, consultants, clients, end users and/or other concerned parties to recover the schedule.
Revised and/or Updated Schedule	A Baseline Schedule, Project Schedule, or Recovery Schedule for the Project that shows the actual Duration of all the completed Activities, including Duration of and the reasons for delays, if any have occurred, AND revisions to all remaining Activities of the Contractor and its subcontractors, including changes, if any, to logical ties, interrelations and the sequence of each of the outlined Activities. Any such revisions should be shown on the row just below the approved schedule of the respective Activity so that revisions can be compared. The Revised and/or updated Schedule must be reviewed and approved by the City.
Start Date	The earliest estimated date an Activity is calculated to begin, based on the estimated performance of all prior Activities to which the Activity is logically connected in a progressive relationship.
Time Impact Analysis	A forward looking (prospective) schedule analysis used to forecast the impact to the Critical Path and to Milestone Finish Dates caused by a single event or series of events. Time Impact Analysis is not a retrospective (forensic) schedule analysis or a what-if schedule analysis of a potential event.
Total Float	The amount of time the start or finish of an Activity can be delayed without affecting the Project completion date.
Work Breakdown Structure (WBS)	WBS is a deliverable-oriented decomposition of a Project into smaller components. A WBS provides the necessary framework for detailed cost estimating and control along with providing guidance for schedule development and control.
Work Days (WD)	Work Days are every consecutive day on the calendar, excluding weekends (Saturday and Sunday) and holidays.

1.5 PRELIMINARY, BASELINE, AND PROJECT SCHEDULE PREPARATION TIMELINE:

- A. Upon receipt of the NTP, the Contractor must promptly prepare a preliminary Project Schedule and subsequently a Baseline Schedule and must submit for the City's acceptance as follows:



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1. Submit the Contractor's CPM Scheduler's qualifications to the City for approval within seven (7) Days after NTP. The City will respond to the submittal within seven (7) Days of the submittal receipt.
2. The preliminary Project Schedule must be submitted no later than twenty-one (21) Days after NTP.
3. The initial submittal of the Baseline Schedule must be provided to the City for review no later than forty-five (45) Days after NTP.
4. The Contractor must incorporate all corrections and revisions required by the City and provide an updated version of the Baseline Schedule for review and acceptance no later than seventy-five (75) Days after NTP to ensure that the Baseline Schedule is accepted no later than ninety (90) Days after the NTP. The ninety (90) Days must include fourteen (14) Days review time by the City for each submittal of the Baseline Schedule.
5. Once accepted, the Baseline Schedule will be the basis of Project Schedule updates.

B. Remedies

1. Preliminary Project Schedule: The City will take a credit of three thousand dollars (\$3,000) if the preliminary Project Schedule is not submitted within twenty-one (21) Days of the NTP.
2. Acceptable Baseline Schedule: The City will take a credit of five thousand dollars (\$5,000) if an acceptable Baseline Schedule is not submitted within ninety (90) Days of the NTP.
3. Monthly Progress Schedule updates: The City will take a credit of two thousand dollars (\$2,000) for each schedule update not submitted within the period it was due.
4. Scheduling Firm Services: If an acceptable Baseline Schedule is not provided by the Contractor within ninety (90) Days of the NTP or three (3) updates are not provided by the Contractor during the period they are due, the City may engage the services of a scheduling firm to develop a Project schedule or update an existing schedule. The total cost of such services will be deducted from the monies due to the Contractor.
 - a. Any schedules and updates developed by such scheduling firm are for the City's sole use and do not, in any way, represent an acceptance of responsibility by the City to schedule the Work or relieve the Contractor of the obligation to complete the Work within the Durations specified by the Contract.
5. The City will only accept the submitted information after all corrections have been made and all issues have been resolved. The City may find the Contractor in default if items required by this Section are incomplete.

1.6 PRELIMINARY PROJECT SCHEDULE DEVELOPMENT:

- A. The preliminary Project Schedule must be a detailed plan (division level per Construction Specifications Institute (CSI) MasterFormat) of all operations, including submittals, permitting, testing, and construction Activities, for either the first ninety (90) Days after NTP or to the point where the Contractor plans to mobilize on site (whichever is greater). This submittal will also depict a summary level (section level per CSI MasterFormat) schedule of the major Activities for the remainder of the Work.
- B. The preliminary Project Schedule will be reviewed by the City and returned with comments, as necessary, within fourteen (14) Days of submittal receipt. Information from the preliminary Project Schedule will be the general foundation for development of the Baseline Schedule.



1.7 PROJECT SCHEDULE:

- A. The Baseline Schedule must show the sequence in which the Contractor proposes to perform the Work, and account for all major and intermediate Milestone Activities, phasing, restrictions of access, availability of work areas and the availability and use of labor, materials, and equipment.
- B. After the Baseline Schedule is approved, the Project Schedule must be the Contractor's working schedule and must be used to plan, organize, execute, and track the Project. The Project Schedule is the primary vehicle used to report actual performance, progress, and convey the Contractor's execution plan to complete all of the Work.
- C. The Project Schedule must show the sequence in which the Contractor proposes to perform the Work, and account for all major and intermediate Milestone Activities, phasing, restrictions of access, availability of work areas and the availability and use of labor, materials, and equipment.
- D. The Project Schedule must be the Contractor's working schedule used to plan, organize, execute, and track the Project. The Project Schedule is the primary vehicle used to report actual performance, progress, and convey the Contractor's execution plan to complete all remaining Work.
- E. All delay claims must be based on the current approved updates of the Project Schedule.
- F. The Contractor must confirm in writing that all subcontractors performing any portion of the Work are in agreement with the accepted Baseline Schedule and the monthly updates.
- G. The amount of detail represented in the Baseline and Project Schedule and supporting documents submitted must, at a minimum, include the following items :
 - 1. Contract Milestones must be identified and included in the Baseline and Project Schedule.
 - 2. All submittal, owner review & approval, purchase, manufacture, and delivery Activities for all major materials and equipment.
 - 3. Deliveries of owner-furnished equipment and/or materials.
 - 4. Preparation, submittal, and approval of drawings, material samples, and safety plans.
 - 5. Preparation, submittal, review, and approval of permits required by all regulatory agencies and other third parties.
 - 6. Performance of tests, submission of test reports, and approval of test results.
 - 7. Commissioning Activities for all commissioned systems and equipment is to be clearly delineated and scheduled such that they will be completed prior to Substantial Completion. Such Activities must include, at a minimum, Pre-Functional testing and check sheets; Testing, Adjusting, and Balancing (TAB) verification; Functional Testing, including testing of all controls; and Owner's demonstration and orientation.
 - 8. Completion dates of all items required for phased completion (if applicable).
 - 9. Completion dates of all items required for Substantial Completion.
 - 10. Completion dates of all items required to obtain a Temporary Certificate of Occupancy (TCO) and Certificate of Occupancy (CO).
 - 11. Completion dates for close-out of regulatory and punch list items prior to Final Acceptance and transfer of the Project.
 - 12. Any additional detail requested by the Commissioner.



- H. Activities identified in the Baseline and Project Schedule must have the Duration in units of whole Work Days. Construction Activity Durations must not exceed twenty (20) work days unless specifically approved by the City. This is to ensure that Activities are not generalized and that each Activity and sub-Activity are defined as narrowly as reasonable to facilitate schedule tracking. Durations for non-construction Activities such as procurement of materials, delivery of equipment, concrete curing, etc., may exceed twenty (20) work days without prior approval; however, these are still subject to review by the City. Durations must be based on the available resources required for performing each Activity and must be the result of definitive labor hours using established production rates, and with consideration of on-site working conditions. If requested by the City, the Contractor must justify the reasonableness of a planned Duration.
- I. Activity descriptions must use plain language that clearly and uniquely define each Activity. Each description must include a verb or work function (e.g. submit, form, pour etc.) an object (e.g. slab, foundation, etc.) and, for any construction Activities, a specific location. The Work related to each Activity must be limited to one responsibility and one trade.
- J. Activity relationships must be assigned to clearly establish predecessor and successor relationships to each Activity. Open-ended Activities are not permitted with the exception of the first and last Activities in the network, the first Activity being NTP and the last being Final Acceptance. The use of relationship lag times is discouraged and only permitted with prior approval by the City. The use of negative lag is never permitted.
- K. Activity constraint dates are only to be used to reflect contractual constraints unless specifically authorized by the City.
- L. Float or slack in any schedule must not be for the exclusive use or benefit of either the City or the Contractor, but must be available for use by both the City and the Contractor.
- M. Each resubmittal after the Project Schedule is delivered for acceptance must comply with all requirements of this section. Review and response by the City will be given within fourteen (14) Days after resubmission. The Contractor's receipt of the comments within the time specified must not in any way affect the Contractor's responsibility to complete the Project within the time fixed in Schedule A.
- N. Failure by the City to return comments or indicate acceptance status will in no way relieve the Contractor's obligation to submit monthly schedule updates.
- O. At the request of the City, the Contractor must be required to make a presentation to explain or clarify the intended logical sequence of construction Activities depicted in the detailed Project Schedule. The Contractor and designated scheduler must discuss anticipated challenges and outline construction methodology and flow of work to show how and when major Milestones will be achieved. In addition, the Contractor may, at no cost to the City, be required to participate in additional Project meetings necessary to obtain acceptance of the above noted submittals.

1.8 ACTIVITY AND CALENDAR CODING STRUCTURE:

- A. The Baseline and Project Schedules must contain a sufficient number of Activities to represent adequate planning and execution of the Work so that it shows an accurate flow of work and demonstrates an understanding of the Project by the Contractor.
- B. Activity ID and Calendar Coding
 - 1. The Contractor's proposed Activity and calendar coding and must be submitted with the preliminary Project Schedule. A meeting may be requested by the City to discuss the scheme and other schedule information prior to the submittal of the Project Schedule. The accepted coding scheme and WBS Structure must be incorporated into the Project Schedule.



C. Activity ID Coding

1. All Activities/Resources/Calendars (Baseline and Project Schedules) must be coded inside the P6 Project Environment / Project Level (NOT the Global Environment/Enterprise Level) to facilitate selection, sorting and preparation of reports.
2. Activity coding must consist of the Project ID followed by a dash, followed by Activity coding (PROJECT ID-ACTIVITY CODE). Activity codes must be created at the Project level and must utilize the coding scheme outlined in the table below:

Activity Code	Meaning
RESP	<u>Responsibility</u> : Identify the party (e.g. Contractor, subcontractor, City, etc.) responsible for the Activity.
PHAS	<u>Phase</u> : Breakdown of Activities in Milestones, pre-construction, procurement, construction and close-out Activities.
LOCN	<u>Location</u> : Breakdown by floor or elevation.
AREA	<u>Area</u> : Breakdown by room, area, block or wing. May be used as a subdivision of PHAS to include Milestones, permits, subcontractor approvals, submittals, fabrication and delivery, and subdivision of the Site and buildings into Logical modules, such as by blocks, wings, etc.
TRAD	<u>Trade</u> : Breakdown by CSI Code or section number in the Specifications.

- a. Description of schedule Activities must include terminology that represents the scope of work associated with that particular Activity. Terminology used to describe similar actions must be consistent across all segments of work.
 - b. Naming convention for schedule Activities must be descriptive and indicate the associated work covered by the Activity. Activities must use a verb, noun, and location of the work in the Activity name.
3. Project Calendar Coding
 - a. All calendars created and assigned to Activities must be Project-level calendars. The Calendar Name must consist of the Project ID number followed by a dash, followed by a descriptive Calendar Name (PROJECT ID-CALENDAR NAME).

1.9 WORK BREAKDOWN STRUCTURE:

- A. A multi-level hierarchal WBS must be incorporated in all P6 schedules. An initial, proposed WBS must be submitted with the preliminary Project Schedule. The levels (nodes) must include, but not be limited to:
 1. LEVEL 01 – The Project Level.
 2. LEVEL 02 – Contains a minimum of four (4) nodes; Pre-Construction, Procurement, Construction or Phase of Construction, and Closeout.
 3. LEVEL 03 – Decomposition of each of the four (4) nodes in Level 02 into its constituent parts. This level must target specific, tangible, deliverable scopes of the Project Work.
- B. The Contractor's proposed WBS must be submitted with the preliminary Project Schedule. The accepted WBS must be incorporated into the Baseline and Project Schedule.



1.10 MAJOR MILESTONES:

- A. The schedule must include both contractual and non-contractual Milestones that are provided by the City. These Milestones must be properly associated with the related Work packages and maintained to represent the progress of the Project.

1.11 SHORT (THREE-WEEK) INTERVAL / TWO-WEEK LOOK-AHEAD:

- A. On a bi-weekly basis, the Contractor must provide a three (3) week short interval schedule in a format satisfactory to the City. The purpose of this schedule is to report the actual progress of the past week against the previous short interval look-ahead Activities and add any additional Activities planned for the next two (2) weeks. Electronic files and hard copies must be provided to the City on the first day of each work week with the prior week's actual progress included.
- B. Each Task listed on the short interval schedule must be representative of the most current Project Schedule Update and include a reference to an Activity shown on the current update.

1.12 SUBMITTALS:

- A. General
 - 1. Development of the Baseline Schedule and updating of the Project Schedule must follow the DCMA and AACE International guidelines.
 - 2. Each electronic submission of the Project Schedule must be assigned a unique file name consisting of the Project ID (as noted on the NTP followed by a dash followed by a unique file name clearly marked (i.e. ProjID- B000 = B/L rev0, ProjID-B001 = B/L rev01 etc.) to indicate the specific submission. Similarly, update submittals must be named ProjID-Uxxx where xxx is a sequential number, starting with 001, indicating the revision or issue number.
 - 3. The Contractor must provide all submittals in electronic format and two hard copies.
- B. Preliminary Project Schedule
 - 1. For acceptance of the preliminary Project Schedule the Contractor must submit the following:
 - a. Two (2) 11" x 17" hard copies of the proposed preliminary Project schedule, as well as the native electronic schedule data file, in .XER file format, per the direction of the City.
 - b. A Schedule Narrative Report detailing the Contractor's initial plan for executing the Contract work within the allotted Contract Duration, and include the following explanation of their provided preliminary schedule:
 - i. The proposed WBS;
 - ii. All proposed Project Calendars;
 - iii. All proposed Activity Codes, clearly defined;
 - iv. The proposed Activity ID format; and
 - v. Schedule basis narrative, which must memorialize assumptions made in the development of the schedule.
- C. Baseline Schedule
 - 1. The City will return comments within ten (10) Work Days after receipt of the initial Project Schedule Submission. If any of the required submissions are returned to the Contractor for corrections or revisions, they must be resubmitted within five (5) Work Days from receipt of



comments. Each resubmittal must comply with the requirements enumerated above. Review and response by the City will be given within ten (10) Work Days after resubmission.

2. At the request of the City, the Contractor will be required to participate in Project meetings necessary to obtain an acceptance of the above noted submittals.
3. Baseline Schedule submittal must contain a Narrative Report. It must include the following, or as directed by the City:
 - a. A description of the Project scope and how the Work is represented in the schedule Activities;
 - b. A description of the overall sequence of major components of Work;
 - c. Planned work week for each definable feature of work;
 - d. Description of the Critical Path and near Critical Paths;
 - e. Basis of Durations, described in terms of quantity and production rate;
 - f. How weather will be accommodated in the schedule, including a description of the weather calendar and the Activities it is applied to, and the NOAA Inclement Weather data that defined the number of non-Work Days;
 - g. How regulatory, operational or third-party constraints are accommodated in the schedule;
 - h. Description of key Project coordination points or events;
 - i. Discussion of long lead items and basis of time frames for submittals;
 - j. Description of anticipated means and methods for large quantity production Activities; and,
 - k. Potential opportunities and risks, including quantification of the schedule reduction or expansion.

D. Project Schedule Updates

1. Every schedule submittal must be provided with a corresponding narrative. These schedule submittals and narratives are to be submitted in hard copy, as well as in the native electronic format, as attachments to emails or other media accepted by the City. When opened, the electronic format must provide flawless restoration of the native files (P6 (.XER) for Primavera schedule files and MS Word and/or Adobe Acrobat for Narrative and supporting document submittals).
2. For each submittal of the updated Project Schedule, the following layouts, reports, and graphics are required in the specified formats, unless otherwise directed by the City:
 - a. The Contractor must furnish two (2) 11" x 17" hard copies of the complete progress schedule with each initial schedule update and final update incorporating comments furnished by the City. Additionally, the Contractor must provide the native electronic schedule data file, in .XER file format, with the initial and final schedule update submission.
 - b. An Activity bar chart layout grouped by Activity Code and then sorted by Start Date, Finish Date, and then Total Float.
 - c. Each Activity line must display the Activity ID (Act ID), Description (Name), Original Duration (OD), Remaining Duration (RD), Start Date (ES), Finish Date (EF), and Total Float (TF), Baseline Original Duration (BL OD) Baseline Start (BL Start), Baseline Finish (BL Fin), Baseline Total Float (BL TF).



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- d. An Activities progress bar must show both current progress update ES and EF, and baseline ES and EF. The top line of the bar chart area must contain the updated ES and EF; the second line below must depict the accepted baseline ES and EF dates.
3. The City may request additional standard P6 reports from time to time at no additional cost.
4. The Monthly Update submittal must contain a Narrative Report. It must include the following, or as directed by the City:
 - a. Any changes to the schedule basis narrative
 - b. A discussion of progress through the update period and status of the Project with respect to completion of the schedule. The progress reporting must detail work Activities that relate to the Project's Critical Path and if these Activities are progressing as planned.
 - c. A discussion of changes, delays or other circumstances affecting Progress including identified risks and opportunities and the Contractor's strategy.
 - d. A listing and brief explanation of modifications to the previously submitted network including Logic changes and Activity additions, deletions or modifications.
 - e. An update on the status of long lead items and whether the item is on the Critical Path.
 - f. The Contractor must report on all out of sequence Activities, the cause of this deviation to plan, and the proposed resolution of this issue.
 - g. The Contractor must include an explanation of assumptions and exclusions made in developing the schedule update and narrative.
5. The Contractor must provide a copy of the computer file(s) in electronic format or other media accepted by the City. When opened, the electronic format must provide flawless restoration of the native files and an electronic copy of the Narrative Report.

1.13 PROJECT SCHEDULE UPDATING:

- A. The initial updating must take place immediately after the City accepts the Contractor's Baseline Schedule. The Data Date for the first update must not exceed seven (7) Days from the date of receipt of the accepted Baseline Schedule, or as directed by the City.
- B. Subsequent updates of the Project Schedule must be submitted monthly until Substantial Completion. The schedule data date must be the last Work Day of the period unless otherwise directed by the City. Updates must be provided to the City no later than seven (7) Days after the 'schedule Data Date'.
- C. Updates must reflect actual or reasonably anticipated progress as of the last Work Day of the period.
- D. The City may request meetings with the Contractor to review the Project Schedule and Narrative and jointly verify Project health and information.
- E. In addition, the City may request meetings with the Contractor's scheduling representative to:
 1. Resolve out-of-sequence Logic;
 2. Should out-of-sequence progress occur where Activities have reported progress without predecessor Activities being completed, the Contractor must obtain the City's approval in a Proposed Schedule before revising the Logic ties to reflect the way the Work is actually being performed. Use of progress override by default mechanisms that may be included in CPM scheduling software systems will not be allowed except on a case-by-case basis with the approval of the City. A written explanation for each instance must be included in the monthly submittal narrative.
 3. Assess the impact, if any, of any pending change orders.
 4. Incorporate accepted time extensions.



5. Review revised Logic (as-built and projected) and changes in Activity Duration, cost, and labor hours assigned.
- F. Contractor's failure to provide required scheduling information within the required timeframe or to adhere to the currently accepted schedule may result in rejection of all or a portion of the progress payment until such time as the required schedule information is submitted and accepted by the City.
- G. Delays to the Critical Path – Whenever it becomes apparent from the monthly CPM schedule update that delays to the Critical Path have occurred due to action or inaction of the Contractor and, as a result, the date for Substantial Completion will not be met, the Contractor must promptly take some or all of the following actions at no additional cost to the City, unless otherwise directed by the City:
 1. Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of Work.
 2. Increase the number of working hours per shift, shifts per day, or Work Days per week; the amount of construction equipment; the forms for concrete work; etc., or any combination of the foregoing to substantially eliminate the backlog of Work.
 3. Reschedule Activities to achieve maximum practical concurrence of accomplishment of Activities and comply with the revised schedule.
 4. Submit to the City for review a written statement of the steps the Contractor intends to take to remove or arrest the delay to the schedule.
 5. Add to its equipment and materials or construction forces, as well as increase the working hours, if operations for critical, less critical or non-critical Activities fall behind the Contractor's Baseline Schedule at any time during the construction period.
- H. The City may, at any time during the Project and at no additional cost to the City, require the Contractor to develop a more detailed schedule/ Fragnet than depicted in the Baseline Schedule to provide a clearer understanding of the effort needed to complete an Activity or group of Activities.
- I. If the City determines that either the Critical Path is in the negative by four (4) weeks, or that the Project's date for completion may be affected, the Contractor may be required, at no additional cost to the City, to prepare a Recovery Schedule. Such Recovery Schedule is subject to review and acceptance by the City.
 1. The recovery schedule must propose alternative methods, overtime, and other means available to the Contractor to recover the delays incurred to date.
 2. The Recovery Schedule must be resource-loaded with manpower and equipment required to bring the date for Substantial Completion back into compliance.
- J. The Contractor must submit an "As-Built Schedule", as the last schedule update showing all Activities, with the exception of punch list and closeout tasks, at Substantial Completion. This schedule must reflect the exact manner in which the Project was actually constructed.



1.14 TIME IMPACT ANALYSIS:

- A. In addition to the requirements of the Standard Construction Contract Article 11, the Contractor must submit a Time Impact Analysis to the Engineer with all requests for time extension.
- B. The Time Impact Analysis must include a written narrative and supporting impact schedule Fragnet detailing the Project delays resulting from the alleged delay. The impact schedule Fragnet, separate and distinct from the Progress Schedule update, must demonstrate that the changes or anticipated delays affect Activities of the current accepted Progress Schedule. The impact schedule will be incorporated into the Progress Schedule only after it is accepted by the Commissioner and a time extension is approved. The Fragnet submitted as part of the Time Impact Analysis must illustrate the impact of these changes or delays on the date for Substantial Completion.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 32 16.20



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**SECTION 01 32 16.30
PROJECT SCHEDULES (METHOD C)**

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SECTION 01 32 16.30

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. This section includes the following:
 - 1. Methods
 - 2. Definitions
 - 3. Preliminary, Baseline, and Project Schedule Preparation Timeline
 - 4. Preliminary Project Schedule Development
 - 5. Project Schedule
 - 6. Activity and Calendar Coding Structure
 - 7. Work Breakdown Structure (WBS)
 - 8. Major Milestones
 - 9. Short (Three-Week) Interval/Two-Week Look-Ahead
 - 10. Submittals
 - 11. Project Schedule Updating
 - 12. Time Impact Analysis

1.3 METHODS:

- A. The Contractor must comply with Project schedule development and updating requirements as specified herein.
 - 1. The Contractor must employ or retain the services of a Construction Scheduler with verifiable construction scheduling experience, subject to review and acceptance by the City. Upon request, the Contractor must provide the City with qualifications and experience of the proposed scheduling staff member(s).
 - 2. The Contractor must prepare, update, and maintain a detailed Project Schedule using a version of scheduling software that is compatible with the City's Oracle Primavera P6 Enterprise Project Portfolio Management (EPPM). All schedule submittals must be developed using Oracle's Primavera P6 EPPM software. Schedules must be developed using accepted CPM techniques using the Precedence Diagramming Method (PDM). The Project Schedule must be developed following Defense Contract Management Agency (DCMA), and American



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Association of Cost Engineering International (AACE International) guidance. The Contractor will be required to use the Contractor's own P6 license (whether single-user or Enterprise license), unless otherwise directed by the Commissioner. If directed by the Commissioner prior to the Notice to Proceed (NTP), the Contractor must use the Department's P6 Enterprise license and develop the Progress Schedule within the Department's Enterprise environment.

3. Once the Baseline Schedule is accepted by the City, progress updates to the Project Schedule must be submitted monthly, unless otherwise directed by the City, until Substantial Completion. The Data Date for the schedule updates must use the last Friday of the month, or as directed by the City.
4. The Contractor must be responsible for providing the monthly schedule updates once the Baseline Schedule is approved. Each monthly schedule update must be accompanied with a schedule narrative that explains the following:
 - a) The progress of work during that particular period of performance;
 - b) Any changes in schedule Logic;
 - c) The physical conditions that were used to update every Activities Percent Complete;
 - d) Any change in actual Start and Finish Dates;
 - e) Any Duration changes;
 - f) Any added and deleted Activities; and
 - g) Any added Extra Work (e.g., change orders).

1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

<u>Term</u>	<u>Definition</u>
Activity	A representation of a discrete portion of the overall scope of Work or an event through Duration and description in a CPM schedule.
Baseline Schedule	The planned and detailed CPM schedule of Activities, including all Logic, Durations, Resource and Cost Loading, and showing the entire scope of Work. The Baseline Schedule must be accepted by the City.
Critical Path	The longest sequence of Activities in a network which establishes the minimum length of time for accomplishment of the end event of the Project.
Critical Path Method (CPM)	A management technique used to plan and control a project which combines all relevant information into a single plan defining the sequence and Duration of operations and depicting the interrelationship of the Work elements required to complete the Project.
Current Schedule	The most recently updated schedule that captures progress to date and forecasts the dates for each Activity.



<u>Term</u>	<u>Definition</u>
Data Date	The date used as a starting point for scheduling calculations. The Data Date is changed to the current end of period date when a schedule is updated for progress.
Duration	The amount of time, in workdays, an Activity will take to perform.
Finish Date	The earliest estimated date an Activity is calculated to be complete, based on the estimated performance of all prior Activities to which the Activity is logically connected in a progressive relationship.
Free Float	The calculated amount of time that the estimated start or finish of an Activity can be delayed without impacting the start or finish of other downstream Activities logically connected in a progressive relationship. (See Finish Date and Late Finish).
Fragnet	Fragmentary network: a portion of a schedule detailing impacts of an event on specific Activities in the broader schedule.
Inclement Weather	Any weather condition, the duration of which varies in excess of the 3-year average published by the National Oceanic and Atmospheric Administration (NOAA) information for the local area.
Integrated Project Schedule	The Commissioner's overall schedule covering design, procurement, and construction. The Commissioner will use the Contractor's Project Schedule to update the Integrated Project Schedule.
Late Finish	An estimate of the latest plausible date an Activity's completion can be postponed without rendering as unachievable the required completion of any downstream Milestones to which the Activity is Logically connected to in a progressive relationship.
Late Start	An estimate of the latest plausible date an Activity's start can be postponed without rendering as unachievable the required completion of any downstream Milestones to which the Activity is Logically connected to in a progressive relationship.
Logic	A direct progressive relationship between Activities where one Activity's performance restricts the performance of another Activity.
Milestone	A key or critical point in time for reference or measurement.
Network Diagram	A graphic diagram of a network schedule, showing Activities and Activity relationships.
Original Duration	The estimated amount of time, in Work Days, an Activity is expected to take to complete at the beginning of a project as anticipated by the Contractor based on its planned means and methods at time of bid and documented in the Baseline Schedule.



<u>Term</u>	<u>Definition</u>
Percent Complete	The percentage of the scope of Work represented by an Activity completed as of the Data Date calculated as physical percent complete for payment purposes.
Project Schedule	The Contractor's schedule used to manage the orderly and expeditious completion of the Work. The Project Schedule is initially the accepted Baseline Schedule, and is updated throughout the Project.
Remaining Duration	The amount of time, in Work Days, the remaining scope of Work represented by an Activity is expected to take to complete, measured from the current Data Date.
Resource and Cost Loading	Values assigned for estimated dollars, manpower, equipment and/or materials necessary to complete the scope of Work represented by a specific Activity.
Recovery Schedule	A Recovery Schedule outlining and incorporating extraordinary efforts required to recover lost time with the aim of achieving completion of the Project within the stipulated contract Duration, plus authorized time extensions. In such case, special attention must be given to minimize delays and must establish the nature of efforts; for instance, resources and equipment required, extended hours of work, weekend work, accelerated fabrication, required action(s) or effort(s) by the Contractor, its subcontractors, consultants, clients, end users and/or other concerned parties to recover the schedule.
Revised and/or Updated Schedule	A Baseline Schedule, or Progress Project Schedule, or Recovery Schedule for the Project that shows the actual Duration of all the completed Activities, including Duration of and the reasons for delays, if any have occurred, AND revisions to all remaining Activities of the Contractor and its subcontractors, including changes, if any, to logical ties, interrelations and the sequence of each of the outlined Activities. Any such revisions should be shown on the row just below the approved schedule of the respective Activity so that revisions can be compared. The Revised and/or updated Schedule must be reviewed and approved by the City.
Start Date	The earliest estimated date an Activity is calculated to begin, based on the estimated performance of all prior Activities to which the Activity is logically connected in a progressive relationship.
Time Impact Analysis	A forward looking (prospective) schedule analysis used to forecast the impact to the Critical Path and to Milestone Finish Dates caused by a single event or series of events. Time Impact Analysis is not a retrospective (forensic) schedule analysis or a what-if schedule analysis of a potential event.
Total Float	The amount of time the start or finish of an Activity can be delayed without affecting the Project completion date.



<u>Term</u>	<u>Definition</u>
Work Breakdown Structure (WBS)	WBS is a deliverable-oriented decomposition of a Project into smaller components. A WBS provides the necessary framework for detailed cost estimating and control along with providing guidance for schedule development and control.
Work Days (WD)	Work Days are every consecutive day on the calendar, excluding weekends (Saturday and Sunday) and holidays.

1.5 PRELIMINARY, BASELINE, AND PROJECT SCHEDULE PREPARATION TIMELINE:

- A. Upon receipt of the NTP, the Contractor must promptly prepare a preliminary Project Schedule and subsequently a Baseline Schedule and must submit for the City's acceptance as follows:
1. Submit the Contractor's CPM Scheduler's qualifications to the City for approval within seven (7) Days after NTP. The City will respond to the submittal within seven (7) Days of the submittal receipt.
 2. The preliminary Project Schedule must be submitted no later than twenty-one (21) Days after NTP.
 3. The initial submittal of the Baseline Schedule must be provided to the City for review no later than forty-five (45) Days after NTP.
 4. The Contractor must incorporate all corrections and revisions required by the City and provide an updated version of the Baseline Schedule for review and acceptance no later than seventy-five (75) Days after NTP to ensure that the Baseline Schedule is accepted no later than ninety (90) Days after the NTP. The ninety (90) Days must include fourteen (14) Days review time by the City for each submittal of the Baseline Schedule.
 5. Once accepted, the Baseline Schedule will be the basis of Project Schedule updates.
- B. Remedies
1. Preliminary Project Schedule: The City will take a credit of three thousand dollars (\$3,000) if the preliminary Project Schedule is not submitted within twenty-one (21) Days of the NTP.
 2. Acceptable Baseline Schedule: The City will take a credit of five thousand dollars (\$5,000) if an acceptable Baseline Schedule is not submitted within ninety (90) Days of the NTP.
 3. Monthly Progress Schedule updates: The City will take a credit of two thousand dollars (\$2,000) for each schedule update not submitted within the period it was due.
 4. Scheduling Firm Services: If an acceptable Baseline Schedule is not provided by the Contractor within ninety (90) Days of the NTP or three (3) updates are not provided by the Contractor during the period they are due, the City may engage the services of a scheduling firm to develop a Project schedule or update an existing schedule. The total costs of such services will be deducted from the monies due to the Contractor.
 5. Any schedules and updates developed by such scheduling firm are for the City's sole use and do not, in any way, represent an acceptance of responsibility by the City to schedule the Work or relieve the Contractor of the obligation to complete the Work within the Durations specified by the Contract.



6. The City will only accept the submitted information after all corrections have been made and all issues have been resolved. The City may find the Contractor in default if items required by this Section are incomplete.

1.6 PRELIMINARY PROJECT SCHEDULE DEVELOPMENT:

- A. The preliminary Project Schedule must be a detailed plan (division level per Construction Specifications Institute (CSI) MasterFormat) of all operations, including submittals, permitting, testing, and construction Activities, for either the first ninety (90) Days after NTP or to the point where the Contractor plans to mobilize on site (whichever is greater). This submittal will also depict a summary level (section level per CSI MasterFormat) schedule of the major Activities for the remainder of the Work.
- B. The preliminary Project Schedule will be reviewed by the City and returned with comments, as necessary, within fourteen (14) Days of submittal receipt. Information from the preliminary Project Schedule will be the general foundation for development of the Baseline Schedule.

1.7 PROJECT SCHEDULE:

- A. The Baseline Schedule must show the sequence in which the Contractor proposes to perform the Work, and account for all major and intermediate Milestone Activities, phasing, restrictions of access, availability of work areas and the availability and use of labor, materials, and equipment.
- B. After the Baseline Schedule is approved, the Project Schedule must be the Contractor's working schedule and must be used to plan, organize, execute and track the Project. The Project Schedule is the primary vehicle used to report actual performance, progress, and convey the Contractor's execution plan to complete the Work.
- C. The Project Schedule must show the sequence in which the Contractor proposes to perform the Work, and account for all major and intermediate Milestone Activities, phasing, restrictions of access, availability of work areas and the availability and use of labor, materials, and equipment.
- D. The Project Schedule must be the Contractor's working schedule used to plan, organize, execute, and track the Project. The Project Schedule is the primary vehicle used to report actual performance, progress, and convey the Contractor's execution plan to complete all remaining Work.
- E. All delay claims must be based on the current approved updates of the Project Schedule.
- F. The Contractor must confirm in writing that all subcontractors performing any portion of the Work are in agreement with the accepted Baseline Schedule and the monthly updates.
- G. The amount of detail represented in the Baseline and Project Schedule and supporting documents submitted must, at a minimum, include the following, items:
 1. Contract Milestones must be identified and included in the Baseline and Project Schedule.
 2. All submittal, owner review & approval, purchase, manufacture, and delivery Activities for all major materials and equipment.
 3. Deliveries of owner-furnished equipment and/or materials.
 4. Preparation, submittal, and approval of drawings, material samples, and safety plans.
 5. Preparation, submittal, review, and approval of permits required by all regulatory agencies and other third parties.
 6. Performance of tests, submission of test reports, and approval of test results.



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7. Commissioning Activities for all commissioned systems and equipment is to be clearly delineated and scheduled such that they will be completed prior to Substantial Completion. Such Activities must include, at a minimum, Pre-Functional testing and check sheets; Testing, Adjusting, and Balancing (TAB) verification; Functional Testing, including testing of all controls; and Owner's demonstration and orientation.
 8. Completion dates of all items required for phased completion (if applicable).
 9. Completion dates of all items required for Substantial Completion.
 10. Completion dates of all items required to obtain a Temporary Certificate of Occupancy (TCO) and Certificate of Occupancy (CO).
 11. Completion dates for close-out of regulatory and punch list items prior to Final Acceptance and transfer of the Project.
 12. Any additional detail requested by the Commissioner.
- H. Activities identified in the Baseline and Project Schedule must have the Duration in units of whole Work Days. Construction Activity Durations must not exceed twenty (20) Work Days unless specifically approved by the City. This is to ensure that Activities are not generalized and that each Activity and sub-Activity are defined as narrowly as reasonable to facilitate schedule tracking. Durations for non-construction Activities such as procurement of materials, delivery of equipment, concrete curing, etc. may exceed twenty (20) Work Days without prior approval; however, these are still subject to review by the City. Durations must be based on the available resources required for performing each Activity and must be the result of definitive labor hours using established production rates, and with consideration of on-site working conditions. If requested by the City, the Contractor must justify the reasonableness of a planned Duration.
- I. Activity descriptions must use plain language that clearly and uniquely defines each Activity. Each description must include a verb or work function (e.g. submit, form, pour etc.), an object (e.g. slab, foundation, etc.) and, for any construction Activities, a specific location. The Work related to each Activity must be limited to one responsibility and one trade.
- J. Activity relationships must be assigned to clearly establish predecessor and successor relationships to each Activity. Open-ended Activities are not permitted with the exception of the first and last Activities in the network, the first Activity being NTP and the last being Final Acceptance. The use of relationship lag times is discouraged and only permitted with prior approval by the City. The use of negative lag is never permitted.
- K. Activity constraint dates are only to be used to reflect contractual constraints unless specifically authorized by the City.
- L. Float or slack, in any schedule, must not be for the exclusive use or benefit of either the City or the Contractor, but must be available for use by both the City and the Contractor.
- M. Each resubmittal after the Project Schedule is delivered for acceptance must comply with all requirements of this section. Review and response by the City will be given within fourteen (14) Days after resubmission. The Contractor's receipt of the comments within the time specified must not, in any way, affect the Contractor's responsibility to complete the Project within the time fixed in Schedule A.
- N. Failure by the City to return comments or indicate acceptance status will in no way relieve the Contractor's obligation to submit monthly schedule updates.
- O. At the request of the City, the Contractor must be required to make a presentation to explain or clarify the intended logical sequence of construction Activities depicted in the detailed Project Schedule. The Contractor and designated scheduler must discuss anticipated challenges and outline construction methodology and flow of work to show how and when major Milestones will be achieved. In addition,



the Contractor may, at no cost to the City, be required to participate in additional Project meetings necessary to obtain acceptance of the above-noted submittals.

- P. The Contractor must provide a Cost Flow Projection (CFP) summary covering from NTP to Final Acceptance. The CFP summary must match the expected billings for each period of performance.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 1.7.Q

- Q. Schedule Cost and Resource Loading
1. At the direction of the City, and at no additional cost to the City, a Project Schedule must be cost loaded within thirty (30) Days after acceptance of the Baseline Schedule.
 2. The Contractor must accurately load all Project Activities with direct field labor associated with the craft or trades required to complete that Activity. All labor must be noted in manhours required to complete the tasking. The Contractor must include in all Activities the hours required of for major pieces of equipment.
 3. All Resource ID's must have a unique identifier assigned by the Contractor, and approved by the City, so the Project-specific data can be separated from other data in the system.
 4. Cost loading must be accomplished by adding a single summary level cost loaded Activity in the Project Schedule. This Activity will allow initial generation and monthly updates of the planned value that is time-phased into monthly periods.
 5. The intent of the cost loading is to facilitate cost forecasting, tracking, and reporting of monthly cost projection. Every month, the cost loaded summary Activity must be updated with earned value for prior months and revised monthly forecast for future periods. If there is a significant difference between the actual cumulative monthly invoice and the cumulative planned value from the cost loaded Project Schedule for any reporting month, the Contractor must provide the City with the reason for variance in the schedule narrative.

1.8 ACTIVITY AND CALENDAR CODING STRUCTURE:

- A. The Baseline and Project Schedules must contain a sufficient number of Activities to represent adequate planning and execution of the Work so that it shows an accurate flow of work and demonstrates an understanding of the Project by the Contractor.
- B. Activity ID and Calendar Coding
1. The Contractor's proposed Activity and calendar coding and must be submitted with the preliminary Project Schedule. A meeting may be requested by the City to discuss the scheme and other schedule information prior to the submittal of the Project Schedule. The accepted coding scheme and WBS Structure must be incorporated into the Project Schedule.
- C. Activity ID Coding
1. All Activities/Resources/Calendars (Baseline and Project Schedules) must be coded inside the P6 Project Environment / Project Level (NOT the Global Environment/Enterprise Level) to facilitate selection, sorting and preparation of reports.
 2. Activity coding must consist of the Project ID followed by a dash, followed by Activity coding (PROJECT ID-ACTIVITY CODE). Activity codes must be created at the Project level and must utilize the coding scheme outlined in the table below:



Activity Code	Meaning
RESP	<u>Responsibility</u> : Identify the party (e.g. Contractor, subcontractor, City, etc.) responsible for the Activity.
PHAS	<u>Phase</u> : Breakdown of Activities in Milestones, pre-construction, procurement, construction and close-out Activities.
LOCN	<u>Location</u> : Breakdown by floor or elevation.
AREA	<u>Area</u> : Breakdown by room, area, block or wing. May be used as a subdivision of PHAS to include Milestones, permits, subcontractor approvals, submittals, fabrication and delivery, and subdivision of the Site and buildings into Logical modules, such as by blocks, wings, etc.
TRAD	<u>Trade</u> : Breakdown by CSI Code or section number in the Specifications.

- a. Description of schedule Activities must include terminology that represents the scope of work associated with that particular Activity. Terminology used to describe similar actions must be consistent across all segments of work.
 - b. Naming convention for schedule Activities must be descriptive and indicate the associated work covered by the Activity. Activities must use a verb, noun, and location of the work in the Activity name.
3. Project Calendar Coding
- a. All calendars created and assigned to Activities must be Project-level calendars. The Calendar Name must consist of the Project ID number followed by a dash, followed by a descriptive Calendar Name (PROJECT ID-CALENDAR NAME).

1.9 WORK BREAKDOWN STRUCTURE:

- A. A multi-level hierarchal WBS must be incorporated in all P6 schedules. An initial, proposed WBS must be submitted with the preliminary Project Schedule. The levels (nodes) must include, but not be limited to:
 1. LEVEL 01 – The Project Level.
 2. LEVEL 02 – Contains a minimum of four (4) nodes: Pre-Construction, Procurement, Construction or Phase of Construction, and Closeout.
 3. LEVEL 03 – Decomposition of each of the four (4) nodes in Level 02 into its constituent parts. This Level must target specific, tangible, scopes of the Project Work.
 4. LEVEL 04 – Decomposition of Level 03 Activities providing work package details that provide an understanding of the process to be used to execute the Project Work.
- B. The Contractor's proposed WBS must be submitted with the preliminary Project Schedule. The accepted WBS must be incorporated into the Baseline and Project Schedule.

1.10 MAJOR MILESTONES:

- A. The schedule must include both contractual and non-contractual Milestones that are provided by the City. These Milestones must be properly associated with the related Work and maintained to represent the progress of the Project.



1.11 SHORT (THREE-WEEK) INTERVAL / TWO-WEEK LOOK-AHEAD:

- A. On a weekly basis, the Contractor must provide a three (3) week short interval schedule in a format satisfactory to the City. The purpose of this schedule is to report the actual progress of the past week against the previous short interval look-ahead Activities and add any additional Activities planned for the next two (2) weeks. Electronic and hard copies must be provided to the City on the first day of each work week with the prior week's actual progress included.
- B. Each task listed on the short interval schedule must be representative of the most current Project Schedule Update and include a reference to an Activity shown on the current update.

1.12 SUBMITTALS:

- A. General
 - 1. Development of the Baseline Schedule and updating of the Project Schedule must follow the DCMA and AACE International guidelines.
 - 2. Each electronic submission of the Project Schedule must be assigned a unique file name consisting of the Project ID (as noted on the NTP), followed by a dash followed by a unique file name clearly marked (i.e. ProjID- B000 = B/L rev0, ProjID-B001 = B/L rev01 etc.) to indicate the specific submission. Similarly, update submittals must be named ProjID-Uxxx where xxx is a sequential number, starting with 001, indicating the revision or issue number.
 - 3. The Contractor must provide all submittals in electronic format and two hard copies.
- B. Preliminary Project Schedule
 - 1. For acceptance of the preliminary Project Schedule, the Contractor must submit the following:
 - a. Two (2) 11" x 17" hard copies of the proposed preliminary Project Schedule, as well as the native electronic schedule data file, in .XER file format, per the direction of the City.
 - b. A Schedule Narrative Report detailing the Contractor's initial plan for executing the Contract work within the allotted Contract Duration, and include the following explanation of their provided preliminary schedule:
 - i. The proposed (WBS);
 - ii. All proposed Project Calendars;
 - iii. All proposed Activity Codes, clearly defined;
 - iv. The proposed Activity ID format; and
 - v. Schedule basis narrative, which must memorialize the assumptions made in the development of the schedule.
- C. Baseline Schedule
 - 1. The City will return comments within ten (10) Work Days after receipt of the initial Project Schedule Submission. If any of the required submissions are returned to the Contractor for corrections or revisions, they must be resubmitted within five (5) Work Days from receipt of comments. Each resubmittal must comply with the requirements enumerated above. Review and response by the City will be given within ten (10) Work Days after resubmission.
 - 2. At the request of the City, the Contractor will be required to participate in Project meetings necessary to obtain an acceptance of the above noted submittals.
 - 3. Baseline Schedule submittal must contain a Narrative Report. It must include the following, or as directed by the City:



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- a. A description of the Project scope and how the Work is represented in the schedule Activities;
 - b. A description of the overall sequence of major components of Work;
 - c. Planned work week for each definable feature of work.
 - d. Description of the Critical Path and near Critical Paths;
 - e. Basis of Durations, described in terms of quantity and production rate;
 - f. How weather will be accommodated in the schedule, including a description of the weather calendar and the Activities it is applied to, and the NOAA Inclement Weather data that defined the number of non-work days;
 - g. How regulatory, operational or third-party constraints are accommodated in the schedule;
 - h. Description of key Project coordination points or events;
 - i. Discussion of long lead items and basis of time frames for submittals;
 - j. Description of anticipated means and methods for large quantity production Activities;
 - k. Potential opportunities and risks, including quantification of the schedule reduction or expansion; and
 - l. Assumptions/exclusions made in the schedule.
- D. Project Schedule Updates
1. Every schedule submittal must be provided with a corresponding narrative. These schedule submittals and narratives must be submitted in hard copy and the native electronic format as attachments to emails or other media accepted by the City. When opened, the electronic format must provide flawless restoration of the native files (P6 (.XER) for Primavera schedule files and MS Word and/or Adobe Acrobat for narrative and supporting document submittals).
 2. For each submittal of the updated Project Schedule, the following layouts, reports, and graphics are required in the specified formats, unless otherwise directed by the City:
 - a. The Contractor must furnish two (2) 11" x 17" hard copies of the complete progress schedule with each initial schedule update and final update incorporating comments furnished by the City. Additionally, the Contractor must provide the native electronic schedule data file, in .XER file format with the initial and final schedule update submission.
 - b. An Activity bar chart Layout grouped by Activity Code and then sorted by Start Date, Finish Date, and Total Float.
 - c. Each Activity line must display the Activity ID (Act ID), Description (Name), Original Duration (OD), Remaining Duration (RD), Start Date (ES), Finish Date (EF), and Total Float (TF), Baseline Original Duration (BL OD), Baseline Start (BL Start), Baseline Finish (BL Fin), Baseline Total Float (BL TF).
 - d. An Activities progress bar must show both current progress update ES and EF, and baseline ES and EF. The top line of the bar chart area must contain the updated ES and EF; the second line below must depict the accepted baseline ES and EF dates.
 3. The City may request additional standard P6 reports from time to time at no additional cost.
 4. The Monthly Update submittal must contain a Narrative Report. It must include the following, or as directed by the City:



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- a. Any changes to the schedule basis narrative;
- b. Overall health of the Project;
- c. Actual Activity Start Dates;
- d. Actual Activity Finish Dates;
- e. The physical conditions that were used to update Activities percent complete
- f. Percent of Work reported in place;
- g. Contract and Milestone completion date status:
 - i. Number of Days ahead or behind schedule; and
 - ii. Days lost/gained compared with the previous update.
- h. Schedule change report organized by Milestone and area comparing the number of Activities that were planned to start and finish to the number that actually started and finished for the reporting period;
- i. Lookahead report listing each Activity in the CPM schedule that is scheduled to be performed during the next reporting period;
- j. Plans for executing scheduled Activities during the next reporting period;
- k. Analysis, organized by Milestone and area, of the Critical Path and near Critical Path(s) describing:
 - i. The nature of the Critical Path/near Critical Path;
 - ii. Impact on other Activities, Milestones and Finish dates; and
 - iii. Identify, or update, risks and opportunities that may impact the Critical Path/near Critical Paths.
- l. List of current and anticipated delays by Milestone:
 - i. Cause of the delay;
 - ii. Corrective actions and schedule adjustments to correct the delay;
 - iii. Impact of the delay on other Activities, Milestones and completion dates; and
 - iv. Weather delays, when applicable. The Contractor must describe how the impacts of weather conditions and constraints were absorbed and accounted for in the schedule.
- m. Changes in Activity description, Logic, or Duration must be submitted as a separate Proposed Schedule and approved by the City prior to being submitted as an official update. Once allowed, said changes must be grouped and organized in the report in a manner that communicates in detail the rationale associated with each change and the impact upon construction sequence, relationships and the Critical Path. A standard Digger Report is not sufficient to meet this requirement;
- n. Added/deleted Activities and the rationale associated with each action;
- o. Pending issues and status of other items;
- p. Permits;
- q. Contract modifications;
- r. Current and potential extra Work, including change orders;
- s. Status of long lead procurement items and whether the item is on the Critical Path;
- t. Status of Project submittals;



- u. Out of sequence report describing the necessity of each Activity relationship shown therein, as described within this Section;
- v. Illogical progress/restraint reports (if any);
- w. Other Project or scheduling concerns;
- x. Electronic copy of the latest CPM schedule update file in Primavera (.XER) format; and
- y. Primavera scheduling error report.

1.13 PROJECT SCHEDULE UPDATING:

- A. The initial updating must take place immediately after the City accepts the Contractor's Baseline Schedule. The Data Date for the first update must not exceed seven (7) Days from the date of receipt of the accepted Baseline Schedule, or as directed by the City.
- B. Subsequent updates to the Project Schedule must be submitted monthly until Substantial Completion is achieved. The schedule Data Date must be set to the last Work Day of the period unless otherwise directed by the City. Updates must be provided to the City no later than seven (7) Days after the 'schedule Data Date'.
- C. Updates must reflect actual or reasonably anticipated progress as of the last Work Day of the period.
- D. The City may request meetings with the Contractor to review the Project Schedule and narrative and jointly verify Project health and information.
- E. In addition, the City may request meetings with the Contractor's scheduling representative to:
 - 1. Resolve out-of-sequence Logic.
 - 2. Should out-of-sequence progress occur where Activities have reported progress without predecessor Activities being completed, the Contractor must obtain the City's approval in a Proposed Schedule before revising the Logic ties to reflect the way the Work is actually being performed. Use of progress override by default mechanisms that may be included in CPM scheduling software systems will not be allowed except on a case-by-case basis with the approval of the City. A written explanation for each instance must be included in the monthly submittal narrative.
 - 3. Assess the impact, if any, of any pending change orders.
 - 4. Incorporate accepted time extensions.
 - 5. Review revised Logic (as-built and projected) and changes in Duration, cost, and labor hours assigned.
- F. Contractor's failure to provide required scheduling information within the required timeframe or to adhere to the currently accepted schedule may result in rejection of all or a portion of the progress payment until such time as the required schedule information is submitted and accepted by the City.
- G. Delays to the Critical Path – Whenever it becomes apparent from the monthly CPM schedule update that delays to the Critical Path have occurred due to action or inaction of the Contractor, and as a result the date for Substantial Completion will not be met, the Contractor must promptly take some or all of the following actions at no additional cost to the City, unless otherwise directed by the City:
 - 1. Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of Work.



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2. Increase the number of working hours per shift, shifts per day, or Work Days per week; the amount of construction equipment; the forms for concrete work; etc., or any combination of the foregoing to substantially eliminate the backlog of Work.
 3. Reschedule Activities to achieve maximum resource utilization across the Project and comply with the revised schedule.
 4. Submit to the City a written statement of the steps the Contractor intends to take to remove or arrest the delay to the schedule. The Contractor must promptly provide the necessary level of effort to bring the Work back on schedule.
 5. Add to its equipment and materials or construction forces, as well as increase the working hours, if operations for critical, less critical, or non-critical Activities fall behind the Contractor's Baseline Schedule at any time during the construction period.
- H. The City may, at any time during the Project and at no additional cost to the City, require the Contractor to develop a more detailed schedule/Fragnet than depicted in the Baseline Schedule to provide a clearer understanding of the effort needed to complete an Activity or group of Activities.
- I. If the City determines that either the Critical Path is in the negative by four (4) weeks, or that the Project's date for completion may be affected, the Contractor may be required, at no additional cost to the City, to prepare a Recovery Schedule. Such Recovery Schedule is subject to review and acceptance by the City. The Recovery Schedule must propose alternative methods, overtime, and other means available to the Contractor to recover the delays incurred to date.
- J. The Contractor must submit an "As-Built Schedule", as the last schedule update showing all Activities, with the exception of punch list and closeout tasks, at Substantial Completion. This schedule must reflect the exact manner in which the Project was actually constructed.

1.14 TIME IMPACT ANALYSIS:

- A. In addition to the requirements of the Standard Construction Contract Article 11, the Contractor must submit a Time Impact Analysis to the Engineer with all requests for time extension.
- B. The Time Impact Analysis must include a written narrative and supporting impact schedule Fragnet detailing the Project delays resulting from the alleged delay. The impact schedule Fragnet, separate and distinct from the Progress Schedule update, must demonstrate that the changes or anticipated delays affect Activities of the current accepted Progress Schedule. The impact schedule will be incorporated into the Progress Schedule only after it is accepted by the Commissioner and a time extension is approved. The Fragnet submitted as part of the Time Impact Analysis must illustrate the impact of these changes or delays on the date for Substantial Completion.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 32 16.30



**SECTION 01 32 33
PHOTOGRAPHIC DOCUMENTATION**

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SECTION 01 32 33

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. This Section includes the following:
 - 1. Photographic Media
 - 2. Construction Photographs
 - 3. Pre-construction Photographs
 - 4. Periodic Construction Progress Photographs
 - 5. Special Photographs
 - 6. DVD Recordings
 - 7. Final Completion Construction Photographs
- B. RELATED SECTIONS: include without limitation the following:
 - 1. Section 01 10 00 SUMMARY
 - 2. Section 01 33 00 SUBMITTAL PROCEDURES
 - 3. Section 01 35 91 HISTORIC TREATMENT PROCEDURES
 - 4. Section 01 78 39 CONTRACT RECORD DOCUMENTS
 - 5. Section 01 81 19 INDOOR AIR QUALITY REQUIREMENTS FOR LEED BUILDINGS
- C. PHOTOGRAPHER - The Contractor must employ and pay for the services of a professional photographer who will take photographs showing the progress of the Work.

1.3 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.
- B. Design Consultant: "Design Consultant" must mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.4 SUBMITTALS:

- A. Qualification Data: For photographer.
- B. Key Plan: With each Progress Photograph Submittal include a key plan of Project site and building with notation of vantage points marked for location and direction of each image. Indicate location, elevation or story of construction. Include same label information as corresponding set of photographs.



- C. Construction Progress Photograph Prints: Take Progress Photographs bi-weekly and submit four (4) color prints of each photographic view for each trade to the Resident Engineer. Such Progress Photographs must be included in each monthly progress report or as otherwise directed by the Resident Engineer.
- D. Digital Files: Submit digital files in the format required.

1.5 QUALITY ASSURANCE:

- A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer of construction projects for not less than three (3) years.

1.6 COORDINATION:

- A. The Contractor and its subcontractor(s) must cooperate with the photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities, such as temporary lighting required to produce clear and well-lit photographs without obscuring shadows.

1.7 COPYRIGHT:

- A. The Contractor must include the provisions of this Subsection 1.7 in the agreement between the Contractor and the Photographer who will provide the construction photographs described in this Section. The Contractor must submit to the Resident Engineer a copy of its agreement with the Photographer.
- B. Any photographs, images and/or other materials produced pursuant to this Agreement, and any and all drafts and/or other preliminary materials in any format related to such items produced pursuant to this Agreement, will, upon their creation, become the exclusive property of the City.
- C. Any photographs, images and/or other materials provided pursuant to this Agreement ("Copyrightable Materials") will be considered "work-made-for-hire" within the meaning and purview of Section 101 of the United States Copyright Act, 17 U.S.C. § 101, and the City will be the copyright owner thereof and of all aspects, elements and components thereof in which copyright protection might exist. To the extent that the Copyrightable Materials do not qualify as "work-made-for-hire," the Photographer hereby irrevocably transfers, assigns and conveys exclusive copyright ownership in and to the Copyrightable Materials to the City, free and clear of any liens, claims, or other encumbrances. The Photographer will retain no copyright or intellectual property interest in the Copyrightable Materials. The Copyrightable Materials must be used by the Photographer for no purpose other than in the performance of this Agreement without the prior written permission of the City. The Department may grant the Photographer a license to use the Copyrightable Materials on such terms as determined by the Department and set forth in the license.
- D. The Photographer acknowledges that the City may, in its sole discretion, register copyright in the Copyrightable Materials with the United States Copyright Office or any other government agency authorized to grant copyright registrations. The Photographer must fully cooperate in this effort and agrees to provide any and all documentation necessary to accomplish this.
- E. The Photographer represents and warrants that the Copyrightable Materials: (i) are wholly original material not published elsewhere (except for material that is in the public domain); (ii) do not violate any copyright Law; (iii) do not constitute defamation or invasion of the right of privacy or publicity; and (iv) are not an infringement, of any kind, of the rights of any third party. To the extent that the Copyrightable Materials incorporate any non-original material, the Photographer has obtained all necessary permissions and clearances, in writing, for the use of such non-original material under this Agreement, copies of which must be provided to the City.



PART II – PRODUCTS

2.1 PHOTOGRAPHIC MEDIA:

- A. Digital Images: Digital files must be captured as 7.2 megapixel files or greater, with a minimum pixel array of 2,400 pixels by 3,000 pixels. The camera used to capture the digital files must be a Digital SLR (Single Lens Reflex) camera or approved equal; “point and shoot” cameras or camera phones are not acceptable. Digital cameras must produce images using true optical resolution; “digital zoom” is not acceptable. Images must not be resized or interpolated. The file format for digital files must be Joint Photographic Experts Group format (“JPG”). The digital files must not be modified or processed in any way to alter the JPG file’s metadata, including the photograph’s original capture date.
- B. Digital Files: Digital files must be submitted on Digital Versatile Disk (“DVD”) or as specified by the Commissioner. DVDs must be inserted in standard weight Archival Quality clear poly sheet protectors and submitted in a hard cover three (3) ring binder. The information imprinted on each print must be provided on an Excel file included on the DVD. The DVD must be labeled with the Project ID and the Project description. Labeling using adhesive labels is not acceptable.
- C. Prints:
 - 1. Format: 8-by-10-inch (203-by-254-mm) smooth-surface matte color prints on single-weight commercial-grade stock paper, with 1-inch wide margins and punched for standard 3-ring binder.
 - 2. Identification: On the front of each photograph affix a label in the margin with Project name and date photograph was taken. On the back of each print, provide an applied label or rubber-stamped impression with the following information:
 - a. Project Contract I.D. Number.
 - b. Project Contract Name.
 - c. Name of Contractor. (and Subcontractor Trade Represented)
 - d. Subject of Image Taken.
 - e. Date and time photograph was taken if not date stamped by camera.
 - f. Description of vantage point, indicating location, direction and other pertinent information.
 - g. Unique sequential identifier.
 - h. Name and address of photographer.

PART III – EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS:

- A. General: Take photographs that provide the largest possible depth-of-field while still in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
 - 1. Maintain key plan with each set of construction photographs that identifies each photographic location and direction of view.
- B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. Date and Time: Include date and time in filename for each image.
 - 2. Field Office Images: Maintain one set of images on USB drive, or other electronic media requested by the Commissioner, in the field office at the Project site so that it is available at all times for reference. Ensure that the images are the same as for those submitted to Commissioner.

3.2 PRE-CONSTRUCTION & PRE-DEMOLITION PHOTOGRAPHS:

- A. Before commencement of Contract Work at the Project site, take color photographs of Project site and surrounding properties, including existing structures or items to remain during construction, from different vantage points, as directed by the Resident Engineer.
 - 1. Flag applicable excavation areas and construction limits before taking construction photographs.



2. Take photographs of minimum eight (8) views to show existing conditions adjacent to property before starting the Work.
 3. Take applicable photographs of minimum eight (8) views of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
 4. Take additional photographs as required or directed by the Resident Engineer to record settlement or cracking of adjacent structures, pavements, and improvements.
- B. Demolition Operations: Take photographs as directed by the Resident Engineer of minimum of eight (8) views each before commencement of demolition operations, at mid-point of operations and at completion of operations.
- C. Pre-Demolition Photographs: Take archival quality color photographs, to include all exterior building facades, of all structures at the Project site designated to be fully demolished or removed in compliance with New York City Building Code requirements. Submit four (4) complete sets of pre-demolition photographs, in the format specified herein, to the Resident Engineer for submission to the New York City Department of Buildings.

3.3 PERIODIC CONSTRUCTION PROGRESS PHOTOGRAPHS:

- A. Take photographs of minimum eight (8) views bi-weekly as directed by the Resident Engineer of construction progress for each contract trade. Select vantage points to show status of construction and progress since last photographs were taken.

3.4 SPECIAL PHOTOGRAPHS:

- A. The photographer must take special photographs of subject matter or events as specified in other sections of the Project Specifications from vantage points specified or as otherwise directed by the Resident Engineer.
- B. Historical Elements: As required in Section 01 35 91 HISTORIC TREATMENT PROCEDURES, for Contract Work at designated landmark structures or sites, the photographer, as specified and required by individual sections of the Contract documents or at the direction of the Commissioner, must take images of existing elements scheduled to be removed for replacement, repair or replication in quantities as directed, including post-construction photographs of completed Work as directed by the Commissioner.
1. Take Presentation Quality Photographs of designated landmark structures as directed by the Commissioner for submission to the New York City Landmarks Preservation Commission. Provide a minimum of four (4) color photographic prints of each view as directed.

3.5 VIDEO RECORDING:

- A. When Video Recording of Demonstration and Orientation sessions is required, the Contractor must provide the services of a Videographer as indicated in Section 01 79 00 DEMONSTRATION AND OWNER'S PRE-ACCEPTANCE ORIENTATION.

3.6 FINAL COMPLETION CONSTRUCTION PHOTOGRAPHS:

- A. For submission as Project Record Documents, take color photographs of minimum eight (8) unobstructed views of the completed Project and/or Project site, as directed by the Commissioner and after all scaffolding, hoists, shanties, field offices or other temporary work has been removed and final cleaning has been done after date of Substantial Completion. Submit four (4) sets of each view of Presentation Quality photographic prints, including negatives and/or digital images electronic file.

END OF SECTION 01 32 33



**SECTION 01 33 00
SUBMITTAL PROCEDURES**

PART 1 – GENERAL:

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Coordination Drawings, Catalogue Cuts, Material Samples, and other Submittals required by the Contract Documents.
- B. Review of Submittals does not relieve the Contractor of responsibility for any Contractor's errors or omissions in such Submittals, nor from responsibility for complying with the requirements of the Contract.
- C. Responsibility of the Contractor: The approval of Shop Drawings will be general and will not relieve the Contractor of the following responsibilities:
 - 1. Accuracy of such Shop Drawings;
 - 2. Proper fitting and construction of the Work
 - 3. Furnishing of materials or Work required by the Contract that may not be indicated on the Shop Drawings.
- D. Approval of Shop Drawings must not be construed as approving departures from the Contract Drawings, Supplementary Drawings, or Specifications.
- E. This Section includes the following:
 - 1. Definitions
 - 2. Submission Procedures
 - 3. Coordination Drawings
 - 4. LEED Submittals
 - 5. Ultra Low Sulfur Diesel Fuel Reporting
 - 6. Construction Photographs and Recordings
 - 7. As-Built Documents

1.3 RELATED SECTIONS: Include without limitation the following:

- A. Section 01 10 00 SUMMARY
- B. Section 01 31 00 PROJECT MANAGEMENT AND COORDINATION
- C. Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION
- D. Section 01 32 33 PHOTOGRAPHIC DOCUMENTATION
- E. Section 01 77 00 CLOSEOUT PROCEDURES
- F. Section 01 78 39 CONTRACT RECORD DOCUMENTS
- G. Section 01 81 13.03 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v3 BUILDINGS
- H. Section 01 81 13.04 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v4 BUILDINGS

1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.



- B. Design Consultant: "Design Consultant" must mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and Specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.
- C. Submittals: Written and graphic information that requires responsive actions and includes, without limitation, all Shop Drawings, product data, letters of certification, tests and other information required for quality control and as required by the Contract Documents.
- D. Informational Submittals: Written information that does not require responsive action. Informational Submittals may be rejected for non-compliance with the Contract.
- E. Shop Drawings: Drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data, except for coordination drawings, specifically prepared for the Project by the Contractor or any subcontractor, manufacturer, supplier or distributor, which illustrates how specific portions of the Work must be fabricated and/or installed.
- F. Coordination Drawings: As required in Section 01 31 00 PROJECT MANAGEMENT AND COORDINATION.
- G. Product Data and Quality Assurance Submittals: Includes manufacturer's standard catalogs, pamphlets, and other printed materials including without limitation the following:
 - 1. Catalogue and Product specifications
 - 2. Installation instructions
 - 3. Color charts
 - 4. Catalog cuts
 - 5. Rough-in diagrams and templates
 - 6. Wiring diagrams
 - 7. Performance curves
 - 8. Operational range diagrams
 - 9. Mill reports
 - 10. Design data and calculations
 - 11. Certification of compliance or conformance
 - 12. Manufacturer's instructions and field reports

1.5 COORDINATION DRAWINGS:

- A. The Contractor must provide reproducible Coordination Drawing(s) of the reflective ceiling showing the integration of all applicable Contract Work, including general construction work as well as trade work (Plumbing, HVAC, and Electrical) to be performed by subcontractors. The Coordination Drawing(s) must include, without limitation, the following information:
 - 1. General Construction Contract Work: show the reflective ceiling plan, including starting points, ceiling and beam soffits elevations, ceiling heights, roof openings, etc.
 - 2. HVAC Contract Work: show ductwork, heating and sprinkler piping, location of grilles, registers, etc., and access doors in hung ceilings. Locations must be fixed by elevations and dimensions from column centerlines and/or walls.
 - 3. Plumbing Contract Work: show piping, valves, cleanouts etc., indicating locations, elevations and indicating the necessary access doors.



4. Electrical Contract Work: show fixtures, large conduit runs, clearances, pull boxes, junction boxes, sound system speakers, etc.
- B. The Contractor must issue the completed Coordination Drawing(s) to the Resident Engineer for his/her review. The Resident Engineer may call as many meetings as necessary with the Contractor, including attendance by applicable subcontractors, and may call on the services of the Design Consultant where necessary, to resolve any conflicts that become apparent.
- C. Upon resolution of any conflicts, the Contractor must provide a final Coordination Drawing(s) which will become the Master Coordination Drawing(s). The Master Coordination Drawing(s) must be signed and dated by the Contractor to indicate acceptance of the arrangement of the Work.
- D. A reproducible copy of the Master Coordination Drawing(s) must be provided by the Contractor to each of the appropriate subcontractor(s), the Resident Engineer, and the Design Consultant for information.
- E. Shop Drawings must not be submitted prior to acceptance of the final coordinated drawings and must be prepared in accordance with the Master Coordination Drawing(s). No work will be permitted without accepted Shop Drawings. It is therefore essential that this procedure be instituted as quickly as possible.

1.6 SUBMITTAL PROCEDURES:

- A. Refer to Section 01 35 03 GENERAL MECHANICAL REQUIREMENTS and Section 01 35 06 GENERAL ELECTRICAL REQUIREMENTS for additional Submittal requirements involving electrical and mechanical work or equipment of any nature called for in the Project.
- B. Coordination: Coordinate preparation and processing of Submittals with performance of construction activities.
 1. Coordinate each Submittal with fabrication, purchasing, testing, delivery, other Submittals, and related activities that require sequential activities, with the Submittal Schedule specified in Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION.
 2. Coordinate transmittal of different types of Submittals for related parts of the Work so processing will not be delayed because of need to review Submittals concurrently for coordination.
 3. The Commissioner reserves the right to withhold action on a Submittal requiring coordination with other Submittals until related Submittals are received.
- C. Submittals Schedule: The Submittals Schedule is set forth in Schedule F, which is included in the Addendum.
- D. Identification: Place a permanent label or title block on each Submittal for identification.
 1. Indicate name of firm or entity that prepared each Submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Design Consultant.
 3. Include the following minimum information on label for processing and recording action taken:
 - a. Project name, DDC Project Number, and Contract Number
 - b. Date
 - c. Name and address of Design Consultant
 - d. Name and address of Contractor
 - e. Name and address of subcontractor
 - f. Name and address of supplier
 - g. Name of manufacturer
 - h. Submittal number or other unique identifier, including revision identifier
 - i. Number and title of appropriate Specification Section
 - j. Drawing number and detail references, as appropriate
 - k. Location(s) where product is to be installed, as appropriate
 - l. Other necessary identification



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E. Transmittal:

1. Package each Submittal individually and appropriately for transmittal and handling. Transmit each Submittal using a transmittal form in triplicate. Transmittals received from sources other than the Contractor will be returned without review. Re-submission of the same drawings or product data must bear the original number of the prior submission and the original titles.
2. Transmittal Form: Provide locations on form for the following information:
 - a. Project name, DDC Project number and Contract Number
 - b. Date
 - c. Destination (To:)
 - d. Source (From:)
 - e. Names of Contractor, subcontractor, manufacturer, and supplier
 - f. Category and type of Submittal
 - g. Submittal purpose and description
 - h. Specification Section number and title
 - i. Drawing number and detail references, as appropriate
 - j. Transmittal number, numbered consecutively
 - k. Submittal and transmittal distribution record
 - l. Remarks
 - m. Signature of transmitter

F. Shop Drawings:

1. Procedures for Preparing, Forwarding, Checking, and Returning all Shop Drawings must be, generally, as follows:
 - a. The Contractor must make available to its subcontractors the necessary Contract Documents and must instruct such subcontractor to determine dimensions and conditions in the field, particularly in reference to coordination between the trade subcontractors. The Contractor must direct its subcontractors to prepare Shop Drawings for submission to the Design Consultant in accordance with the requirements of these General Conditions. The Contractor must also direct its subcontractors to "Ring Up" corrections made on all re-submissions for approval, so as to be readily seen, and that the appropriate symbol per item 2 below (e.g., "GC") be used to identify the source of the correction or information that has been added.

The Contractor must:

1. Review and be responsible for information shown on its subcontractor's Shop and Installation Drawings and manufacturers' data, and conformity to Contract Documents.
 2. "Ring Up" corrections made on all submissions for approval, so as to be readily seen, and that the symbol "GC", "PL", "HVAC", or "EL" be used to indicate that the correction and/or information added was made by the Contractor and/or its subcontractor(s).
 3. Clearly designate which entity is to perform the Work when the term, "work by others" or other similar phrases are indicated on the Contract Drawings before submission to the Design Consultant.
 4. Stamp submissions "Recommended for Acceptance", date and forward to the Design Consultant.
2. The Contractor must promptly prepare and submit project specific layout detail and Shop Drawings of such parts of the Work as are indicated in the Specifications, Schedule F of the Addendum or as required. These Shop Drawings must be made in accordance with the Contract Drawings, Specifications and Supplementary Drawings, if any. The Shop Drawings must be accurate and distinct and give all the dimensions required for the fabrication, erection, and installation of the Work.



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3. Size of Drawings: The Shop Drawings, unless otherwise directed, must be on sheets of the same size as the Contract Drawings, drawn accurately and of sufficient scale to be legible, with a one half (1/2) inch marginal space on each side and a two (2) inch marginal space for binding on the left side.
4. Scope of Drawings: Shop Drawings must be numbered consecutively and must accurately and distinctly represent all aspects of the Work, including without limitation the following:
 - a. All working and erection dimensions
 - b. Arrangements and sectional views
 - c. Necessary details, including performance characteristics and complete information for making necessary connections with other Work
 - d. Kinds of materials including thickness and finishes
 - e. Identification of products
 - f. Fabrication and installation drawings
 - g. Roughing-in and setting diagrams
 - h. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring
 - i. Shop work manufacturing instructions
 - j. Templates and patterns
 - k. Schedules
 - l. Design calculations
 - m. Compliance with specified standards
 - n. Notation of coordination requirements
 - o. Notation of dimensions established by field measurement
 - p. Relationship to adjoining construction clearly indicated
 - q. Seal and signature of professional engineer if specified
 - r. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring
 - s. All other information necessary for the Work and/or required by the Commissioner
5. Titles and Reference: Shop Drawings must be dated and contain:
 - a. Name of the Project, DDC Project Number, and Contract Number
 - b. The descriptive names of equipment or materials covered by the Contract Drawings and the classified item number or numbers.
 - c. The locations or points and sequence at which materials, or equipment, are to be installed in the Work
 - d. Cross references to the section number, detail number, and paragraph number of the Contract Specifications
 - e. Cross references to the sheet number, detail number, etc., of the Contract Drawings
6. Field Measurements: In addition to the above requirements, the Shop Drawings must be signed by the Contractor and, if applicable, the subcontractor responsible for preparation of the Shop Drawings. Each Shop Drawing must be stamped with the following wording:

FIELD MEASUREMENTS: The Contractor certifies that it has verified and supplemented the Contract Drawings by taking all required field measurements, which said measurements correctly reflect all field conditions and that this Shop Drawing incorporates said measurements.
7. Contractor's Statement with Submittal: Any Submittal by the Contractor for acceptance, including without limitation, all dimensional drawings of equipment, blueprints, catalogues, models, samples and other data relative to the equipment, the materials, the Work or any part thereof, must be accompanied by a statement that the Submittal has been examined by the Contractor and that everything shown in the Submittal is in accordance with the requirements of the Contract Drawings and Specifications. If there is any discrepancy between what is shown in the Submittal and the requirements of the Contract Drawings and Specifications, the Contractor must, in its statement, list



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and clearly describe each discrepancy.

Acceptance will be given based upon the Contractor's representation that what is shown in the Submittal is in accordance with the requirements of the Contract Drawings and Specifications. If the Contractor's statement indicates any discrepancy between what is shown in the Submittal and the requirements of the Contract Drawings and Specifications, such change is subject to review and prior written acceptance by the Design Consultant. In addition, such change may require a change order in accordance with Article 25 of the Contract. In the event any such change is approved, any additional expense or increased cost in connection with the change is the sole responsibility of the Contractor.

8. Submission of Shop Drawings:

- a. Initial Submission: The Contractor must submit seven (7) copies, or as requested by the Resident Engineer, of each Shop Drawing to the Design Consultant for his/her review and acceptance. If PDF drawings are requested by the Resident Engineer, they must be provided in an original "printed from digital" format, and not scanned. The Design Consultant will transmit Shop Drawings to appropriate sub-consultants for review and acceptance, including Commissioning Authority/Agent as applicable. A satisfactory Shop Drawing will be stamped "No Exceptions Taken", be dated and distributed by the Design Consultant as follows:
 - 1) Two (2) copies thereof will be returned to the Contractor by letter
 - 2) Three (3) copies of the approved Shop Drawing and copy of the transmittal letter to the Contractor will be forwarded to DDC
 - 3) One copy will be retained by the Design Consultant
 - 4) One copy will be forwarded / retained by sub-consultant(s) as appropriate

Should the Shop Drawing(s) be "Rejected" or noted "Revise and Resubmit" by the Design Consultant, the Design Consultant will return the Shop Drawings to the Contractor with the necessary corrections and changes to be made as indicated thereon.

- b. Revisions: The Contractor must make such corrections and changes and again submit seven (7) copies of each shop drawing to the Design Consultant. The Contractor must revise and resubmit the Shop Drawing as required by the Design Consultant until the Shop Drawings are stamped "No Exceptions Taken". However, Shop Drawings which have been stamped "Make Corrections Noted" will be considered an "Acceptable" Shop Drawing and NEED NOT be resubmitted.
- c. Commencement of Work: No Work or fabrication called for by the Shop Drawings must be done until the acceptance of the said drawings by the Design Consultant is given. In addition to the foregoing Shop Drawing transmissions, a copy of any Shop Drawing prepared by any of the Contractor's subcontractors which Shop Drawing indicated Work related to, adjacent to, impinging upon, or affecting Work to be done by other subcontractors must be transmitted to the subcontractors so affected. [These accepted Shop Drawings must be distributed to the affected subcontractors when required with a copy of the transmittal to the Resident Engineer.]
- d. Variations: If the Shop Drawings show variations from the Contract requirements because of standard shop practice or other reasons, the Contractor must make specific mention of such variations in its letter of Submittal. Acceptance of the Shop Drawings must constitute acceptance of the subject matter thereof only and not of any structural apparatus shown or indicated.

G. Product Data:

1. General: Except as otherwise prescribed herein, the submission, review, and acceptance of Product Data and Catalogue cuts must conform to the procedures specified in subsection 1.6 F, Shop Drawings.



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2. If information must be specially prepared for the Submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 3. Mark each copy of the Submittal to show which products and options are applicable.
 4. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Standard color charts.
 - e. Manufacturer's catalog cuts.
 - f. Wiring diagrams showing factory-installed wiring.
 - g. Printed performance curves.
 - h. Operational range diagrams.
 - i. Mill reports.
 - j. Standard product operation and maintenance manuals.
 - k. Compliance with specified referenced standards.
 - l. Testing by recognized testing agency.
 - m. Application of testing agency labels and seals.
 - n. Notation of coordination requirements.
 5. Submit Product Data before or concurrent with Samples.
 6. Submission of Product Data:
 - a. Initial Submission: The Contractor must submit seven (7) sets of Product Data to the Design Consultant for his/her review and acceptance. The Design Consultant will transmit Product Data to appropriate sub-consultants for review and acceptance, including Commissioning Authority/Agent as applicable. A satisfactory catalogue cut will be stamped "No Exception Taken", be dated and distributed as follows:
 - 1) Two (2) copies thereof will be returned to the Contractor by letter
 - 2) Three (3) copies of the Product Data and copy of the transmittal letter to the Contractor will be forwarded to DDC
 - 3) One copy will be retained by the Design Consultant
 - 4) One copy will be forwarded / retained by sub-consultant(s) as appropriateShould the Product Data be "Rejected" or noted "Revise and Resubmit" by the Design Consultant, the Design Consultant will return one (1) set of such Product Data to the Contractor with the necessary corrections and changes to be made indicated and one (1) set to DDC.
 7. Revisions: The Contractor must make such corrections and changes and again submit seven (7) copies of each Product Data for the review of the Design Consultant. The Contractor must revise and resubmit the Product Data as required by the Design Consultant until the submission is stamped "No Exceptions Taken" by the Design Consultant. However, Product Data which has been stamped "Make Corrections Noted" must be considered an "Accepted" Product Data and NEED NOT be resubmitted.
- H. Samples of Materials:
1. For samples of materials involving electrical Work of any nature, refer to Section 01 35 06 GENERAL ELECTRICAL REQUIREMENTS.
 2. Samples must be in triplicate or as directed by the Resident Engineer, and of sufficient size to show the quality, type, range of color, finish and texture of the material.



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3. Each of the samples must be labeled as follows:
 - a. Name of the Project, DDC Project Number and Contract Number
 - b. Name and quality of the material
 - c. Date
 - d. Name of Contractor, subcontractor, manufacturer and supplier
 - e. Related Specification or Contract Drawing reference to the samples submitted
4. A letter of transmittal, in triplicate, from the Contractor requesting acceptance must accompany all such samples.
5. Transportation charges to the Design Consultant's office must be prepaid on all samples forwarded.
6. Samples for testing purposes must be as required in the Specifications.
7. Samples on Display: When samples are specified to be equal to approved product, they must be carefully examined by the Contractor and by those whom the Contractor expects to employ for the furnishing of such materials.
8. Timely Submissions Log/Schedule: Samples must be submitted in accordance with approved Shop Drawing log so as to permit proper consideration without delaying any operation under the Project. Materials should not be ordered until acceptance is received, in writing, from the Design Consultant. All materials must be furnished equal in every respect to the accepted samples.
9. The acceptance of any samples will be given as promptly as possible, and will be only for the characteristic color, texture, strength, or other feature of the material named in such acceptance, and no other. When this acceptance is issued by the Design Consultant, it is done with the distinct understanding that the materials to be furnished will fully and completely comply with the Specifications, the determination of which may be made at some later date by a laboratory test or by other procedure. Use of materials will be permitted only so long as the quality remains equal to the approved samples and complies in every respect with the Specifications, and the colors and textures of the samples on file in the office of the Design Consultant, for the Project.
10. Acceptability of test Data: The Commissioner will be the final judge as to acceptability of laboratory test data and performance in service of materials submitted.
11. Valuable Samples: Valuable samples, such as hardware, plumbing and electrical fixtures, etc., not destroyed by inspection or test, will be returned to the Contractor and may be incorporated into the Work after all questions of acceptability have been settled, providing suitable permanent records are made as to the location of the samples, their properties, etc.
12. Equivalent Quality: Any material, article and/or equipment which is designated in the Drawings and/or Specifications by a number in the catalogue of any manufacturer or by a manufacturer's grade or trade name is designated for the purpose of describing the material, article and/or equipment and fixing the standard of performance and/or function, as well as the quality and/or finish. Any material, article and/or equipment which is other than what is specified in the Drawings and/or Specifications will only be accepted if the Commissioner makes a written determination that such material, article and/or equipment is equivalent to that which is specified in the Drawings and/or Specifications.
13. The submission of any material, article and/or equipment as the equal of any material, article and/or equipment set forth in the Drawings and/or Specifications as a standard must be accompanied by any and all information essential for determining whether such proposed material, article and/or equipment is equivalent to that which is specified. Such information must include, without limitation, illustrations, drawings, descriptions, catalogues, records of tests, samples, as well as information regarding the finish, durability and satisfactory use of such proposed material, article and/or equipment under similar operating conditions.



REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 1.7

1.7 LEED SUBMITTALS:

- A. Comply with Submittal requirements specified in the following sections:
 - 1. Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL;
 - 2. Section 01 81 13.03 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v3 BUILDINGS or
Section 01 81 13.04 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v4 BUILDINGS, as applicable;
 - 3. Section 01 81 13.13 VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES, SEALANTS, PAINTS AND COATINGS FOR LEED v3 BUILDINGS;
 - 4. Section 01 81 19 INDOOR AIR QUALITY REQUIREMENTS FOR LEED BUILDINGS;
 - 5. Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS; and/or,
 - 6. Section 01 91 15 BUILDING ENCLOSURE COMMISSIONING REQUIREMENTS.
- B. LEED Building Submittal information must be assembled into one package per each applicable Specification Section, separate from all other non-LEED Submittals. Each Submittal package must have a separate transmittal and identification as described in Subsection 1.5 herein.
- C. Number of Copies: Submit four (4) copies of LEED Submittals, in accordance with procedure described in Article 1.5 herein, unless otherwise indicated.
- D. Material Safety Data Sheets (MSDSs) for LEED Certification: Submit information necessary to show compliance with LEED certification requirements, which will be the limit of the Design Consultant's review for LEED compliance.
 - 1. Designated LEED Submittals that include non-LEED MSDS data will not be reviewed. The entire Submittal will be returned for re-submission.
- E. Product Cut Sheets and/or Shop Drawings for LEED Certification: Provide product cut sheets and/or shop drawings with the Contractor's or sub-contractor's stamp, confirming that the submitted products are the products installed in the Project. For detailed requirements refer to Subsection 1.6 of Section 01 81 13.03 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v3 PROJECTS, or Section 01 81 13.04 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v4 BUILDINGS.
 - 1. Provide the quantity, length, area, volume, weight, and/or cost of each product submitted as required to satisfy LEED documentation requirements. Refer to Subsection 1.6 of Section 01 81 13.03 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v3 PROJECTS.

1.8 ULTRA LOW SULFUR DIESEL FUEL AND BEST AVAILABLE TECHNOLOGY REPORTING:

- A. In accordance with Section 01 10 00 SUMMARY, Subsection 1.10 E, the Contractor must submit reports to the Commissioner regarding the use of Ultra Low Sulfur Diesel Fuel and Best Available Technology (BAT) in Non road Vehicles. Submission of such reports must be in accordance with the schedule, format, directions and procedures established by the Commissioner.



1.9 CONSTRUCTION PHOTOGRAPHS AND VIDEO RECORDINGS:

- A. Submit construction progress photographs and Video recordings in accordance with requirements of Section 01 32 33 PHOTOGRAPHIC DOCUMENTATION.

1.10 AS-BUILT DOCUMENTS:

- A. Submit all as-built documents in accordance with Section 01 78 39 CONTRACT RECORD DOCUMENTS.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 33 00



SECTION 01 35 03

GENERAL MECHANICAL REQUIREMENTS

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 35 03

PART 1 GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. The General Mechanical Requirements contained herein must be followed by the Contractor, as well as its subcontractor for HVAC work. This Section sets forth the General Requirements applicable to mechanical work for the Project. Such requirements are intended to be read in conjunction with the Specifications and Contract Drawings for the Project. In the event of any conflict between the requirements set forth in this Section and the requirements of the Specifications and/or the Contract Drawings, whichever requirement is the most stringent must take precedence.

1.3 RELATED SECTIONS: Include without limitation the following:

- A. Section 01 10 00 SUMMARY
- B. Section 01 33 00 SUBMITTAL PROCEDURES
- C. Section 01 35 06 GENERAL ELECTRICAL REQUIREMENTS
- D. Section 01 42 00 REFERENCES
- E. Section 01 77 00 CLOSEOUT PROCEDURES
- F. Section 01 78 39 CONTRACT RECORD DOCUMENTS

1.4 DEFINITIONS:

- A. **CONCEALED PIPING AND DUCTS:** piping and ducts hidden from sight in masonry or other construction, in floor fill, trenches, partitions, hung ceilings, furred spaces, pipe shafts and in service tunnels not used for passage. Where piping and ducts run in areas that have hung ceilings, such piping and ducts must be installed in the hung ceilings. For Work on existing piping, any insulation on such existing piping is to be tested for asbestos and abated if found to be positive by a certified asbestos contractor. Such testing and abatement must occur prior to the performance of any Work on these pipes.

1.5 SUBMITTALS:

- A. **INTENT OF MECHANICAL CONTRACT DRAWINGS** – Mechanical Contract Drawings are, in part, diagrammatic and show the general arrangement of the equipment, ducts, and piping included in the Contract and the approximate size and location of the equipment.
- B. The Contractor must follow these Contract Drawings in laying out the Work and verify the spaces in which it will be installed. The Contractor must submit, as directed, Mechanical Shop Drawings, roughing drawings,



manufacturer's Shop Drawings, field drawings, cuts, bulletins, etc., of all materials, equipment and methods of installation shown or specified in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

1. Submit sheet metal shop standards. Submit manufacturer's product data including gauges, materials, types of joints, scaling materials and installations for metal ductwork materials and products.
2. Submit scaled layout drawing (3/8"=1') of metal ductwork and fittings including, but not limited to, duct sizes, locations, elevations, slopes of horizontal runs, wall and floor penetrations and connections. Show modifications of indicated requirements made to conform to local shop practice and how those modifications ensure that free area, materials and rigidity are not reduced. Layouts should include all the room plans, mechanical equipment rooms and penthouses. Method of attachment of duct hangers to building construction all with the support details. Coordinate Shop Drawings with related trades prior to submission.
3. Indicate duct fittings, particulars such as gauges, sizes, welds and configuration prior to start of work for low-pressure systems.
4. Submit maintenance data and parts lists for metal ductwork materials and products. Include this data, product data and shop drawings in maintenance manual.

1.6 ACCESS:

- A. All Work must be installed by the Contractor to readily provide access for inspection, operation, maintenance and repair. Minor deviations from the arrangement indicated on the Contract Drawings may be made to accomplish this, but they must not be made without prior written approval by the Commissioner.

1.7 CHANGES IN PIPING, DUCTS, AND EQUIPMENT:

- A. Wherever field conditions are such that for proper execution of the Work, reasonable changes in location of piping, ducts, and equipment are necessary and required, the Contractor must make such changes as directed and approved, without extra cost to the City.

1.8 CLEANING OF PIPING, DUCTS, AND EQUIPMENT:

- A. Piping, ducts, and equipment must be thoroughly cleaned by the Contractor of all dirt, cuttings, and other foreign substances. Should any pipe, duct, or other part of the several systems be obstructed by any foreign matter, the Contractor will be required to pay for disconnecting, cleaning, and reconnecting wherever necessary for the purpose of locating and removing obstructions. The Contractor must pay for repairs to other work damaged in the course of removing obstructions. For work on existing piping, ducts, and equipment, the Contractor must pay special attention during this task so as not to disturb the insulation on such piping, ducts, or equipment.

1.9 STANDARDIZATION OF SIMILAR EQUIPMENT:

- A. Unless otherwise particularly specified, all equipment of the same kind, type, or classification, used for identical purposes, must be the product of one (1) manufacturer.

1.10 SUPPORTING STRUCTURES DESIGNED BY THE CONTRACTOR:

- A. Unless otherwise specified, supporting structures for equipment to be furnished by the Contractor must be designed by an Engineer licensed in New York State retained by the Contractor. Supporting structures must be built by the Contractor of sufficient strength to safely withstand all stresses to which they may be



subjected, within permissible deflections, and must meet the following standards:

1. Structural Steel - ASTM Standard Specifications, AISC and New York City Construction Codes.
2. Concrete for supports for equipment must conform to the Specifications for concrete herein, but in no case must be less than the requirements of the New York City Construction Codes for average concrete.
3. Steel reinforcement for concrete must be of intermediate grade and must meet the requirements of the Standard Specifications for Billet Steel-Concrete Reinforcement Bars, ASTM.
4. Drawings and calculations must be submitted for review and acceptance in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.

1.11 ELIMINATION OF NOISE:

- A. All systems and/or equipment provided under the Contract must operate without objectionable noise or vibration.
- B. Should operation of any one or more of the several systems produce noise or vibration which is, in the opinion of the Commissioner, objectionable, the Contractor must, at its own expense, make changes in piping, equipment, etc., and do all work necessary to eliminate objectionable noise or vibration.
- C. Should noise or vibration that is found objectionable by the Commissioner be transmitted by any pipe or portions of the structure from systems and/or equipment installed under the Contract, the Contractor must, at its own expense, install such insulators and make such changes in or additions to the installations as may be necessary to prevent transmission of this noise or vibration.

1.12 PRELIMINARY FIELD TEST:

- A. As soon as conditions permit, the Contractor must furnish all necessary labor and materials for, and must make preliminary field tests of the equipment to ascertain compliance with the requirements of the Contract. If the preliminary field tests disclose equipment that does not comply with the Contract, the Contractor must, prior to the acceptance test, make all changes, adjustments, and replacements as required.

1.13 INSTRUCTIONS ON OPERATION:

- A. At the time the equipment is placed in permanent operation by the City, the Contractor must make all adjustments and tests required by the Commissioner to prove that such equipment is in proper and satisfactory operating condition. The Contractor must instruct the City's operating personnel on the proper maintenance and operation of the equipment for the period of time called for in the Specifications.

1.14 CERTIFICATES:

- A. On completion of the Work, the Contractor must obtain certificates of inspection, approval, and acceptance, and be in compliance with all laws from all agencies and/or entities having jurisdiction over the Work and must deliver these certificates to the Commissioner in accordance with Section 01 77 00 CLOSEOUT PROCEDURES. The Work will not be deemed substantially complete until the certificates have been delivered.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 35 03



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**SECTION 01 35 06
GENERAL ELECTRICAL REQUIREMENTS**

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. This Section sets forth the General Requirements applicable to electrical work for the Project. Such requirements are intended to be read in conjunction with the Specifications and Contract Drawings for the Project. In the event of any conflict between the requirements set forth in this Section and the requirements of the Project Specifications and/or the Contract Drawings, whichever requirement is the most stringent, as determined by the Commissioner, must take precedence.
- B. This Section includes the following:
1. Related Sections
 2. Definitions
 3. Procedure for Electrical Approval
 4. Submittals
 5. Electrical Installation Procedures
 6. Electrical Conduit System Including Boxes (Pull, Junction and Outlet)
 7. Electrical Wiring Devices
 8. Electrical Conductors and Terminations
 9. Circuit Protective Devices
 10. Distribution Centers
 11. Motors
 12. Motor Control Equipment

1.3 RELATED SECTIONS: Include without limitation the following:

- | | | |
|----|------------------|---------------------------------|
| A. | Section 01 10 00 | SUMMARY |
| B. | Section 01 33 00 | SUBMITTAL PROCEDURES |
| C. | Section 01 35 03 | GENERAL MECHANICAL REQUIREMENTS |
| D. | Section 01 42 00 | REFERENCES |
| E. | Section 01 77 00 | CLOSEOUT PROCEDURES |
| F. | Section 01 78 39 | CONTRACT RECORD DOCUMENTS |

1.4 DEFINITIONS:

- A. **WIRING:** contains wire and raceway (rigid steel, heavy wall conduit unless specifically indicated otherwise).
- B. **POWER WIRING:** wiring from a panel board or other specified source to a starter (if required), then to a disconnect (if required), then to the final point of usage such as a motor, unit, or device.



- C. CONTROL and/or INTERLOCK WIRING: wiring that signals the device to operate or shut down in response to a signal from a remote control device such as a temperature, smoke, pressure, float, etc. device (starters and disconnect switches are not included in this definition) regardless of the voltage required for the controlling device.
- D. RIGID STEEL CONDUIT: rigid steel heavy wall conduit that is hot-dip galvanized inside and outside. The conduit must meet the requirements of the latest edition, as amended, of the "Standard for Rigid Steel Conduit" of the Underwriters' Laboratories, Inc. Unless otherwise specified in the Specifications or indicated on the Contract Drawings, rigid steel conduit must be used for all exposed work, all underground conduits in contact with earth, and fire alarms systems, as required by the New York City Construction Codes.
- E. ELECTRICAL METALLIC TUBING (EMT): industry standard thin wall conduit of galvanized steel. All elbows, bends, couplings and similar fittings which are installed as a part of the conduit system must be compatible for use with electric metallic tubing. Couplings and terminating fittings must be of the pressure type as approved by the Commissioner. Set screw fittings will not be acceptable. EMT must meet the requirements of the latest edition, as amended, of the "Standard for Electrical Metallic Tubing" of the Underwriters Laboratories Inc. EMT may only be used where specifically indicated. In no case will EMT be permitted in spaces other than hung ceilings and dry wall partitions.
- F. FLEXIBLE METALLIC CONDUIT (FMC): a conduit made through the coiling of a self-interlocking ribbed strip of aluminum or steel, forming a hollow tube through which wires can be pulled. For final connections to motors and motorized equipment, not more than a 4' - 0" length of flexible conduit may be used. For watertight installations, this conduit must be of a watertight type, attached with watertight glands or fittings for final connections from outlet box to recessed lighting fixtures and in locations only where specifically permitted by the Specifications or Contract Drawings.

1.5 PROCEDURE FOR ELECTRICAL APPROVAL:

This Section sets forth General Electrical information, as well as required approvals for all electrical work required for the Project, including ancillary electrical work which may be included in the work of other trade subcontractors.

- A. ELECTRIC SERVICE: The electric service supply is subject to commercial and operating variation of the utility company. Proper provision must be made to have all apparatus operate normally under these conditions.
- B. ACCEPTANCE: Acceptance and approval of the Work will be contingent upon the inspection and test of the installation by the City regulatory agency.
- C. TESTS: The Contractor must notify the Commissioner when the Contractor has completed the work and is ready to have it inspected and tested. Upon completion of the Work, tests must be made as required by the Commissioner of all electrical materials, electrical and associated mechanical equipment, and of appliances installed hereunder. The Contractor must furnish all labor and material for such tests. Should the tests show that any of the material, appliances or workmanship is not first class or not in compliance with the Contract, on written notice the Contractor must remove and promptly replace the materials to be in conformity with the Contract.
- D. CERTIFICATE OF THE BUREAU OF ELECTRICAL CONTROL, OF THE DEPARTMENT OF BUILDINGS (B.E.C.): Prior to requesting a substantial completion inspection, the Contractor must file a Certificate of Inspection issued by B.E.C. On completion of the Work, the Contractor must obtain certificates of inspection, approval, acceptance and compliance from all agencies and/or entities having jurisdiction over the work and must deliver these certificates to the Commissioner in accordance with Section 01 77 00 CLOSEOUT PROCEDURES.



E. RESPONSIBILITY FOR CARE AND PROTECTION OF EQUIPMENT:

1. The Contractor furnishing any equipment must be responsible for the equipment until it has been inspected, tested and accepted, in accordance with the requirements of the Contract.
2. After delivery, before and after installation, the Contractor must protect all equipment against theft, injury or damage from all causes. The Contractor must carefully store all equipment received for work which is not immediately installed. If any equipment has been subject to possible injury by water, it must be thoroughly dried out and put through a special dielectric test as directed by the Commissioner, at the expense of the Contractor or replaced by the Contractor without additional cost to the City.

- F. UNIFORMITY OF EQUIPMENT:** Any two (2) or more pieces of equipment, apparatus or materials of the same kind, type, or classification, which are intended to be used for identical types of service, must be made by the same manufacturer.

1.6 SUBMITTALS:

A. CONTRACTOR'S ELECTRICAL DRAWINGS AND SAMPLES FOR APPROVAL:

1. The Contractor must submit to the Commissioner for approval, in accordance with Section 01 33 00 SUBMITTAL PROCEDURES, complete dimensional drawings of all equipment, wiring diagrams, motor test data, details of control, installation layouts showing all details and locations and including all schedules, and descriptions and supplementary data to comprise complete working drawings and instructions for the performance of the Work. A description of the operation of the equipment and controls must be included. A letter, in triplicate, must accompany each submittal.
2. The Contractor must submit in accordance with Section 01 33 00 SUBMITTAL PROCEDURES, duplicate samples of such materials and appliances as may be requested by the Commissioner for approval. These samples must be properly tagged for identification and submitted for examination and test. After the samples are approved, one (1) sample will be returned to the Contractor and the other sample will be filed in the office of the Commissioner's representative for inspection use. After the Contract is completed, the second set of samples will be returned to the Contractor.

- B. TIMELINESS:** All material must be submitted in accordance with the submittal schedule in sufficient time for the progress of construction. Failure to promptly submit acceptable samples and dimensional drawings of equipment will not be accepted as grounds for an extension of time. The Commissioner may decline to consider submittals unless all related items are submitted at the same time.

- C. CONTRACTOR'S STATEMENT WITH SUBMITTALS:** Contractor must submit a statement in accordance with Section 01 33 00, SUBMITTAL PROCEDURES.

- D. BULLETINS AND INSTRUCTIONS:** The Contractor must furnish and deliver to the Commissioner in accordance with Section 01 78 39 CONTRACT RECORD DOCUMENTS and Section 01 77 00 CLOSEOUT PROCEDURES, after acceptance of the work, four (4) complete sets of instructions, technical bulletins and any other printed matter (diagrams, prints, or drawings) required to provide complete information for the proper operation, maintenance and repair of the equipment and the ordering of spare parts.



PART II – PRODUCTS (Not Used)

PART III – EXECUTION

3.1 ELECTRICAL INSTALLATION PROCEDURES:

This Sub-Section sets forth the General Installation Procedure that must apply to all electrical work and electrical equipment appearing in the Contract.

(Refer to Sub-Section 1.4 DEFINITIONS for terms used in this section)

- A. **INTENT OF CONTRACT DOCUMENTS:** The Drawings and Specifications are to be interpreted as a means of conveying the scope and intent of the work without giving every minor electrical detail. It is intended, nevertheless, that the Contractor must provide whatever labor and materials are found necessary, within the scope of the Contract, for the successful operation of the installation. Specific details of individual installations are to be finally decided upon when the Contractor submits Working or Shop Drawings for approval to DDC. Whenever there are two (2) or more methods to complete Project work within the Contract scope, the Commissioner reserves the right to choose that method which, in the Commissioner's opinion, will afford the most satisfactory performance, lasting qualities, and access for repairs, even if this selection is the costliest.
- B. **SCHEMATIC PLANS – APPROXIMATE LOCATIONS:** Conduits and wiring are shown on the plans for diagrammatic purposes only. Therefore, conduit layouts may not necessarily give the actual physical route of the conduits. The Contractor who installs a conduit system will also be required, as part of the work, to furnish and install all hangers and pull-boxes, including any special pull-boxes found necessary to overcome interferences, and to facilitate the pulling of electrical cables. Similarly, the locations of equipment, appliances, outlets and other items shown on Contract Drawings are only approximate and are to be definitively established when equipment Shop Drawings are submitted and approved by DDC during construction.
- C. **SLEEVES:** required for conduits passing through walls or floors; must be furnished and set by the Contractor installing the conduits. Sleeves in waterproofed floors must be provided with flashing extending twelve (12) inches in all directions from sleeve and secured to waterproofing. Flashing must be turned down into space between pipe and sleeve and caulked watertight. Flashing must be twenty (20) ounces cold rolled copper. Sleeves must be supplied with welded flanges similar to those supplied by the subcontractor for Plumbing Work and must extend one (1) inch above finished floor.
- D. **COORDINATION:** The Contractor must keep in close touch with the construction progress and promptly obtain the necessary information for the accurate placement of its work well before Project construction operations obstruct its work. The Contractor is to consult all other Contract Drawings, as well as approved equipment Shop Drawings on file in the Resident Engineer's Field Office. This will aid in avoiding interferences, omissions, and errors in the electrical installation.
- E. **RESTORATION:** If drilling or cutting is done on finished surfaces of equipment or the structure, any marring of the surface must be repaired or replaced by the Contractor. The Contractor must be held responsible for corrective restoration due to its cutting or drilling, and for any damage to the Project or its contents caused by the Contractor or the Contractor's workers. If any piercing of waterproofing occurs because of the installation of the work, the Contractor must restore the waterproofing, at its own expense, to the satisfaction of the Commissioner.
- F. **ELECTRICAL WORK AT SITE:** The Contractor furnishing equipment consisting of a number of related electrical devices or appliances, mounted in a single enclosure, or on a common base, must furnish this unit, ready for connection and operation, complete with internal wiring, connections, terminal boxes with



copper connectors and/or lugs and ample electrical leads. The cost of any wiring, re-wiring, or other work required to be done on this unit in the field, must be borne by the Contractor, without additional cost to the City.

- G. **COOPERATION AMONG SUBCONTRACTORS:** Whenever an electrically operated unit or system involves the combined work of several subcontractors for its installation and successful operation, the Contractor must require each subcontractor to exercise the utmost diligence in cooperating with others to produce a complete, harmonious installation.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.2

3.2 ELECTRICAL CONDUIT SYSTEM INCLUDING BOXES (PULL, JUNCTION AND OUTLET):

This Sub-Section sets forth the requirements applying to the installation of electrical conduits, boxes or fittings. Rigid steel conduit must be used throughout, unless otherwise directed by the Commissioner. Where the word 'conduit' is used without a modifier such as, rigid steel, EMT, etc., must be interpreted to mean rigid steel, heavy wall, threaded conduit.

(Refer to Sub-Section 1.4 DEFINITIONS for terms used in this section)

A. INSTALLATIONS AND APPLICATIONS:

1. Unless otherwise specified or indicated on the Contract Drawings, conduit runs must be installed concealed in finished spaces.
2. **CONDUIT SIZES:** The sizes of conduits must be as indicated on the Contract Drawings. Wherever conduit sizes are not indicated, the conduit must meet the requirements of the New York City Electrical Code to accommodate the conductors to be installed therein.
3. Conduits must be reamed smooth after cutting. No running threads will be permitted. Universal type couplings must be used where required. Conduit joints must be screwed up to butt. Empty conduits after installation must have all open ends temporarily plugged to prevent the entrance of water or other foreign matter.
4. Conduits installed in concrete or masonry must be securely held in place during pouring and construction operations. A group of conduits terminating together must be held in place by a template.
5. **UNDERGROUND STEEL CONDUITS:** Unless otherwise specified, all underground steel conduits in contact with earth must be encased by the Contractor who installs them, in a covering of not less than two (2) inches of an approved concrete mixture. Concrete mix must be one (1) part cement to four and one-half (4 ½) parts of fine and coarse aggregate.
6. **EXCAVATION RESTORATION PERMITS:** When installing underground conduits, duct banks or manholes, the Contractor must perform the work of cutting pavement, excavation shoring, keeping trenches or holes pumped dry, backfilling, restoration of surfaces to original condition and removal of excess earth and rubbish from premises. During the work, the Contractor must provide adequate crossovers, protective barriers, lamps, flags, etc., to safeguard traffic and the public. When the work is in a public highway or street, the Contractor must secure and pay for all necessary permits, inspection fees, and the cost of repaving.
7. **EXPOSED CONDUIT SUPPORTS:** Exposed conduits must be supported by Galvanized hangers with necessary inserts, beam clamps of approved design, or attached to walls or ceilings by expansion bolts. Exposed conduits must be supported or fastened at intervals not more than five (5) feet.



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8. Exposed conduits must be installed parallel or at right angles to ceilings, walls and partitions. Where direction changes of exposed conduit cannot be made with neat bends, as may be required around beams or columns, conduit-type fittings must be used.
9. Conduit must be installed with an expansion joint approved by the Commissioner in the following conditions:
 - a. Wherever the conduit crosses a building expansion joint, the Contractor will be held responsible for determining where the building expansion joints are located.
 - b. Every 200 feet, when in straight runs of 200 feet or longer.
10. Conduits may only enter and leave a floating slab in a vertical direction, and only in an approved manner. Horizontal entries into floating slabs are not permitted.
11. Conduits installed in pipe shafts must be properly supported to carry the total weight of the raceway system complete with cable. In addition, at least one (1) horizontal brace per 10 ft. section must be provided to assure stability of the raceway system.
12. BUSHINGS AND LOCKNUTS: Approved bushings and locknuts must be used wherever conduits enter outlet boxes, switch boxes, pull boxes, panel board cabinets, etc.
13. CONDUIT BENDS: must be made without kinking conduit or appreciably reducing the internal diameter. All bends in conduits of two (2) inch in diameter or larger must be made with a hydraulic or power pipe bender. The radius of the inner edge of any bend must not be less than six (6) times the internal diameter of the conduit where rubber covered conductors are to be installed, and not less than ten (10) times the internal diameter of the conduit where lead covered conductors are to be used. Long gradual sweeps will be required, rather than sharp bends, when changes of direction are necessary.
14. EMPTY CONDUITS
 - a. TESTS: All conduits and ducts required to be installed and left empty must be tested for clear bore and correct installation by the Contractor using a ball mandrel and a brush and snake before the installation will be accepted. The ball must be turned to approximately 85% of the internal diameter of the raceway to be tested. Two (2) short wire brushes must be included in the mandrel assembly. Snaking of conduits, ducts, etc., must be performed by the Contractor in the presence of the Resident Engineer. Any conduits or ducts which reject the mandrel must be cleared at once with the Contractor bearing all costs, such as chopping concrete, to replace the defective conduit and restore the surface to its original condition.
 - b. TAGS: Numbers or letters must be assigned to the various conduit runs, and as they test clear they must be identified by a fiber tag not less than 1-¼ inch width, attached by means of a nylon cord. All conduit terminations in panel, splice or pull boxes, as well as those out of the floor or ceiling, must be tagged.
 - c. TEST RECORDS: As the conduit runs clear, a record must be kept under the heading of "Empty Conduit Tested, Left Clear, Tagged and Capped" showing conduit designation, diameter, location, date tested and by whom. When complete, this record must be signed by the Resident Engineer and submitted in triplicate for approval. This record must be entered on the Contract Record Drawings under Section 01 78 39 CONTRACT RECORD DOCUMENTS.
 - d. CAPPING: After test, all empty conduit and duct openings, must be capped or plugged by the Contractor as directed.
 - e. DRAG LINES: A drag line must be left in all empty conduit.



B. BOXES:

1. The Contractor must furnish and erect all pull boxes indicated on the plans or where required. Sides, top and bottom of pull boxes must be Galvanized coated and must be built of No. 12 USSG steel reinforced at corners by substantial angle irons and riveted or welded to plates. Bottom or side of pull boxes must be removable and held in place by corrosion resistant machine screws. Pull boxes in damp locations must have threaded hubs and gaskets and be NEMA 4X. All pull boxes must be suspended from ceiling or walls in the most substantial manner.
2. In centering outlets, the Contractor is cautioned to allow for overhead pipes, ducts and other obstructions, and for variations in arrangement and thickness of fireproofing, soundproofing and plastering. Precaution should be exercised regarding the location of window and door trims, paneling, etc. Mistakes resulting from failure to exercise precaution must be corrected by the Contractor at no additional cost to the City. Outlets in hung ceilings must be supported from the black iron or structure.
3. The exact location of all outlets in finished rooms must be as directed by the Commissioner. When the interior finish has been applied, the Contractor must make any necessary adjustment of its work to properly center the outlets. All outlet boxes for local switches near doors must be located at the strike side of doors as finally hung, whether so indicated on the drawings or not.
4. Exposed wall outlet boxes must be securely anchored, erected neatly and tight against the walls.
5. All wall outlets of each type must be set accurately at the same level on each floor, except where otherwise specified or directed by the Commissioner. Where special conditions occur, outlets must be located as directed.
6. **MOUNTING HEIGHTS:** The following heights are standard heights and are subject to correction due to coordination with Contract Drawings. All such changes must be approved by the Resident Engineer. Heights given are from finished floor to center line of outlet or device on wall or partition, unless otherwise indicated.

a. General Convenience Outlets (mount vertical)	1'-6"
b. Clock Outlets	8'-6" or 1'-6" below ceiling
c. Wall Lighting Switches	4'-0"
d. Motor Controllers	5'-0"
e. Motor Push-button	4'-2"
f. Telephone Outlets	As Directed by the Commissioner
g. Fire Alarm Bells	8'-6" or 1'-6" below ceiling
h. Fire Alarm Stations	4'-0"
i. Intercom Outlet	1'-6"
j. Cooking and Refrigerator Unit	As Directed
7. Outlet boxes must be of a design and construction approved by the Commissioner. The type of box, including its form and dimensions, must be appropriate for: its specific location; the kind of fixture to be used; and, the conduits (both quantity and type) that will connect to it. All ferrous outlet boxes must meet the requirements for zinc coating as specified under Electrical Conduit Systems.
8. Knockouts will only be opened to insert conduit. Any outlet boxes with more openings than are necessary for conduit insertion must be sealed by the Contractor without additional charge.
9. All outlet boxes and junction boxes for exposed work must be galvanized cast iron or cast aluminum with threaded openings. Outlet boxes for exposed inside work in damp locations must be galvanized cast iron or cast aluminum with threaded hubs and neoprene gaskets.
10. Junction boxes must not be less than 4 11/16" square and must be equipped with zinc coated plates. Where plates are exposed they must be finished to match the room decor.



11. **FIXTURE SUPPORTS:** Outlet boxes supporting lighting fixtures must be equipped with fixture studs held by approved galvanized stove bolts or integral with the box. Cast iron or malleable boxes must have four (4) tapped holes for mounting required cover or fixtures.
12. Outlet boxes exposed to the weather or indicated W.P. must be cast iron or cast aluminum with the covers made watertight with neoprene gaskets. The boxes must have external lugs for mounting. Drilling of the body of the fitting for mounting will not be permitted. The cover screws must be appropriate in size, non-corrodible and not less than four (4) in number for each box opening.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.3

3.3 ELECTRICAL WIRING DEVICES:

- A. **WALL SWITCHES:** must be of the best specification grade, quiet type, and must have a rating of 20 Amperes at 277 volts, as manufactured by Bryant, Hubbell or approved equal. The mechanism must be equipped with arc snuffers. They must be of the tumbler type, single pole. Switches of the 3-way type must have a similar rating.
- B. **RECEPTACLES:**
 1. **CONVENIENCE OUTLETS:** must be of the best specification grade, duplex, two-pole, 3-wire, 20 Amperes at 125 volts. It must have a grounding pole that must be grounded to the conduit system. Receptacles must be capable of both back and side wiring and must have only one (1) grounding screw. Receptacles must be Hubbell Catalog #5262 or approved equal.
 2. **HEAVY DUTY RECEPTACLE OUTLETS:** must have the Ampere rating and the number of poles specified on the Contract Drawings and must be Hubbell, Russell-Stoll, Bryant, AH & H or approved equal. Each outlet must have a grounding pole, which must be grounded to the conduit system.
 3. **FLOOR RECEPTACLES:** must be Russell & Stoll #3040 or approved equal, to fit into floor box previously specified.
 4. **NAMEPLATES:** are required for all receptacles other than 120V.
- C. **CLOCK HANGERS:** Clock outlets for surface type clocks must be equipped with a supporting hook and recessed faceplate to conceal the electrical cord.
- D. **WATERTIGHT DEVICES:** For installations exposed to weather or in damp locations, the devices must be in a gasketed, cast iron enclosure.
- E. **PLATES:**
 1. Every convenience outlet and switch outlet must be covered by means of a stainless steel No. 302 - 0.4" antimagnetic plate with an approved finish, unless provided otherwise in the detailed Specifications.
 2. Where two (2) or three (3) switches are grouped together, a single faceplate must be used. Where more than three (3) switches are located at one (1) point, the faceplates may be made up in multiple units.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.4

3.4 ELECTRICAL CONDUCTORS AND TERMINATIONS:

- A. **CONDUCTORS FOR LIGHT AND POWER:** All wire and cable must be of annealed copper of 98% conductivity. Aluminum wire or cable will not be permitted. The insulation must be flame retardant, moisture and heat resistant, thermoplastic, type THW or THWN rated for 600 volts at 75 degrees Celsius (C.) for both wet and dry locations. Wires No. 8 or larger must be stranded. Wires and cables must also



be subject to the requirements of the NYCEC. Cables for incoming service, or wire in conduits contiguous with the earth, in concrete, or other damp or wet locations, must be synthetic rubber insulated with neoprene jacket, heat and moisture resistant and must be equal to UL Type USE and rated for 600 volts at 75 degrees C. for both wet and dry locations.

- B. **FIXTURE WIRE:** Lighting fixtures must be wired with No. 14 gauge wire designated as AWM and rated at 105 degrees C.
- C. **OTHER TYPES:** Cables and wires for interior communication systems are described in applicable detailed Specifications.
- D. **MINIMUM SIZE:** Conductors smaller than No. 12 AWG must not be used for light or power.
- E. **COLOR CODE:** Wires must have a phase color code, and multiple conductor cables must be color coded.
- F. **CABLE DATA:** The Contractor must submit for approval the following information for each size and type of cable to be furnished:
 - 1. Manufacture of Cable - Location of Plant.
 - 2. Minimum insulation resistance at standard test temperature.
 - 3. Days required for delivery to site of work after order to proceed with manufacture.
- G. **ORIGINAL REELS:** Cable and wire must be delivered to the site of the work on original sealed factory reels.
- H. **WIRE INSTALLATION:**
 - 1. **INSTALL WIRES AFTER PLASTERING:** Feeder and branch circuits wiring must not be installed into conduit before the rough plastering work is completed. No conductors must be pulled into floor conduits before floor is poured.
 - 2. **CONDUIT SECURED IN PLACE:** No conductor must be pulled into any conduit run before all joints are made up tightly and the entire run rigidly secured in place.
 - 3. **WIRE ENDS:** All wires must be left with sufficiently long ends for proper connection and stowing.
 - 4. **PULLING COMPOUNDS:** to ease the pulling-in of wires into the conduit, only approved compounds as recommended by cable manufacturers must be used.
 - 5. **PRESSURE CONNECTORS:** pressure connectors for wires must be of the cast copper or forged copper pressure plate type. Connectors must be O.Z., Burndy, National Electric Products or approved equal.
 - 6. Splices and feeder taps in the gutters of panel boxes must be made by means of pressure plate-type connectors encased in composition covers as manufactured by O.Z., Burndy, National Electric Products or approved equal.
 - 7. Splices in branch wiring for sound systems and fire systems, must be first made mechanically secure, then soldered and taped.
 - 8. In lieu of soldered splices (except for sound and fire systems, which must have soldered splices) the following alternates are acceptable for operating temperatures up to 105 degrees C., for fluorescent fixtures and for the splicing of branch circuit wiring up to No. 8 AWG wire:
 - a. Mechanical splices made with mechanical connectors as manufactured by the Minnesota Manufacturing Company "Scotchlock" or approved equal. Mechanical connectors requiring a special tool (pressure connectors, insulators and locking rings) by Buchanan or approved equal. The tool used for connector application must be as approved by the connector manufacturer.



- b. For branch circuit wire and cable No. 6 AWG and larger, the seamless tubular connector will only be accepted. Application of this connector must be with a tool recommended by the connector manufacturer.
- 9. TAGS: All feeders and risers must be tagged at both ends, and in all pull and junction boxes and gutter spaces through which they pass. Such tags must be of fiber and have the feeder designation and size stamped thereon.
- 10. BRANCH CIRCUIT WIRING:
 - a. The Contractor installing branch circuit wiring must test the work for correct connections and leave all loop splices in the fixture outlet boxes properly spliced and taped. The Contractor must provide wire ends long enough for convenient connection to device.
 - b. NEUTRALS: No common neutrals must be used except for lighting branch circuits. Each neutral wire must be terminated separately on a neutral busbar in the panelboard. No common neutrals will be permitted for convenience receptacle branch circuits.
- I. TERMINATIONS
 - 1. LUGS: All lugs for all devices and all cable terminations must be copper. AL/CU rated lugs will not be permitted. The only exception to this requirement is when the particular device is not manufactured with copper lugs by any manufacturer. Lugs for No. 6 AWG cable and larger must be cast copper or forged copper pressure plate type. Lugs for 1/0 and larger must be fastened with two (2) bolts.
 - 2. All lugs must be of the proper size to accept the cable connected to them. Any subcontractor furnishing a device containing lugs is to coordinate with the Contractor to ensure that the device terminations are adequate for the wire or cable (whose size may be larger than expected due to voltage drop considerations) connected to the device.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.5

3.5 CIRCUIT PROTECTIVE DEVICES:

This Section sets forth the circuit protective devices such as circuit breakers and safety switches, used in connection with Motor Control Equipment, Distribution Centers, Panel boards and Service Entrance.

- A. CIRCUIT BREAKERS:
 - 1. CIRCUIT BREAKERS: must be operable in any position and must be of the quick-make, quick-break type on manual operation. The handle must be trip free, preventing contacts from being held in closed position against abnormal overloads or short circuits. Positive visual indication of automatic tripped position of breaker must be provided, in addition to the "On" and "Off" indication. All circuit breakers must be of the bolted type.
 - 2. TRIP RATING: Circuit breakers must be provided with the required number of trip elements, calibrated at 40 degrees C., ambient temperature, in accordance with wire sizes or motor currents as shown on Contract Drawings or indicated in the Specifications.
 - 3. POLE BARRIER: Multipole pole breakers must be designed to break all poles simultaneously. They must be provided with barriers between poles and arc suppressing devices.
 - 4. ELEMENTS: Multipole circuit breakers must have frames of not less than a 100 Ampere rating. Multipole circuit breakers for 480 volts AC operation must have an NEMA interrupting rating of 18,000 Amperes, unless a higher rating is specified in the Specifications or indicated on the Contract Drawings.
 - 5. For circuit breakers with frame size up to and including 225 Amperes, the breakers may be



provided with non-interchangeable trip elements. For frame ratings above 225 Amperes, the breakers must be provided with interchangeable trip elements, which can be replaced readily.

6. Single pole circuit breakers for branch circuits must have a frame size of no less than 100 Amperes, and must be rated at 125 volt A.C. with a NEMA interrupting rating of 10,000 Amperes, unless a higher rating is specified in the Specifications or indicated on the Contract Drawings.
7. INVERSE TIME ACTION: The circuit breakers must be dual element type, one (1) element with time limit characteristics, so that tripping will be prevented on momentary overloads, but will occur before dangerous values are reached and the other with instantaneous trip action. Inverse time delay action must be effective between a minimum tripping point of 125% of rating of breaker and an instantaneous tripping point between 600% and 700% of rated current.
8. CONSTANCY OF CALIBRATION: The tripping elements must insure constant calibration and be capable of withstanding excessive short circuit conditions without injury.
9. CONTACTS: must be non-welding under operating conditions and of the silver to silver type.
10. TEMPERATURE RISE: Current carrying parts, except thermal elements, must not rise in temperature in excess of 30 degrees C. while carrying current at the part's rated current and frequency.
11. NUMBERING: Each circuit breaker must be distinctly numbered when installed in a group with other breakers. The calibration of trip element must be indicated on each breaker.

B. SAFETY SWITCHES:

NEMA TYPE HD: When safety switches are permitted to be used for service entrance, motor disconnecting means or to control other types of electrical equipment, they must be of the type HD of a rating not less than 30 Amperes. Enclosures must be provided with means for locking. For ratings above 60 Amperes terminals must have double studs.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.6

3.6 DISTRIBUTION CENTERS:

This Section sets forth the construction and installation procedure for Switchboards, Panel boards and Cabinets.

- A. PANEL BOARDS, GENERAL TYPE: The panel boards must be of the automatic circuit breaker type with individual breakers for each circuit, removable without disturbing the other units. Circuit breakers must be in accordance with the requirements outlined under Section 3.5, "Circuit Protective Devices."
- B. NUMBER AND RATING OF CIRCUIT BREAKERS: The Contract Drawings show a layout of each panel, giving the number, frame, size and trip setting of circuit breakers and number of branch circuits and spare breakers. Each branch circuit must be distinctly numbered.
- C. BUS BAR CONSTRUCTION AND SUPPORT: Panel Boards must be of the dead front type and must have bus bars and branch circuits designed to suit the system and voltage. Current carrying parts, exclusive of circuit breakers, must be copper and based on a maximum density of 1,000 Amperes per square inch. Bus bars for the main switchboard must be designed for the frame rating of the Service Breaker. Bus bars must run up the center of the panel, unless otherwise indicated, and must have connected thereto the various branch circuits. Unless otherwise specified, bus bars for each panel board must be equipped with main lugs only and capacity as required on Contract Drawings. Where main protection is required, automatic circuit breakers must be used. A neutral bus of at least the same capacity as a live bus bar must be provided for the connection of all neutral conductors. Each terminal must be identified. All current carrying parts, exclusive of circuit breakers, must be of copper with a minimum number of joints. The bus bar structure must be a self-supporting unit, firmly fastened to a ½



inch plastic board, extending the full length and width of assembly which must serve to insulate the bus structure from the back of panel box. Other methods affording equally effective bus structure support and insulation will be given consideration. An insulating barrier must separate neutral bus from other parts of panel.

- D. **CIRCUIT BREAKER ASSEMBLY:** The entire circuit breaker and bus bar assembly must be mounted on an adjustable metal base or pan and secured to the back of the panel box. The panel must have edges flanged for rigidity.
- E. **PANEL MOUNTING:** The panel must be centered in the panel box, line up with the door openings, be set level and plumb, and no live parts may be exposed with the door open.
- F. **PANEL CABINET:**
 - 1. **PANEL CABINET INSTALLATION:** When installed, surface mounted in panel closets must be mounted on Kindorf channel.
 - 2. Where cabinets cannot be set entirely flush due to masonry walls or partitions or where cabinet is extra deep, the protruding sides of cabinet must be trimmed with a metal or hardwood return molding of approved design and fastened to cabinet so as to conceal the intersection between the wall and cabinet.
- G. **NAMEPLATES:** Where required, nameplates must be made of engraved Lamicoid sheet, or approved equal. Letters and numbers must be engraved white on a black background (except for Firehouse projects which must have white letters on a red background). The Contractor must submit an engraved sample for approval as to design and style of lettering before proceeding with the manufacture of the nameplate. Nameplates must be of suitable size and must also be provided at the top of the switchboard or section thereof and on the trim at the top of all lighting and power panels. Similar nameplates must also be provided for each distribution circuit breaker giving the breaker number, the number of the feeder, and the name of the equipment fed.
- H. **SHOP DRAWINGS:** showing all details of boxes, panels, etc., must be submitted for approval.
- I. **DIRECTORIES:** A directory must be fastened with brass screws and consist of a noncorrosive metal frame with dimensions not less than five (5) inches x eight (8) inches and a transparent window of Plasticite, Plexiglass, Lucite, Polycarbonate or approved equal that is not less than 1/16 inch thick over cardboard or heavy paper. The directory must be typewritten and show the number and name of each circuit, and lighting or equipment supplied. The size of riser feeder must be as indicated on the directory. The dimensions of the directory must be submitted for approval for each size of panel.
- J. **CONSTRUCTION**
 - 1. **FINISH:** Panel boxes, doors and trim for installation in dry locations, must be zinc coated after fabrication by the hot-dip galvanizing or electroplate process on inside and outside surfaces. In damp locations, panel boards must be enclosed and gasketed NEMA 3R type. Panel boards located outdoors or exposed to the weather must be NEMA 3X type.
 - 2. **PAINTING:** Panel boxes, doors and trim must receive a coat of approved priming paint and a second coat of approved paint in the field after installation. Paint must be applied to the inside and outside of boxes and on both sides of trim. Panel trims and doors must receive a third or finishing coat on the outside after installation. Approval as to texture and color must be obtained before the final coat is applied.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.7

3.7 MOTORS:

This Section sets forth the general design, construction and performance requirements, which must apply to all



motors furnished in the Contract.

- A. **MOTOR DESIGN:** All motors must be designed to comply with the New York State Energy Conservation Construction Code and the New York City Energy Conservation Code. In the event of any conflict or inconsistency between such codes, the New York City Energy Conservation Code must prevail. Motors must have standard NEMA frames and must have nameplate ratings adequate to meet the specified conditions of operation. Motor performance under variable conditions of voltage and frequency must be within the limits set in NEMA standards, unless modified in the Specifications. Motors must be expressly designed for the hazard duty load, voltage and frequency as specified in the Contract. All motor windings must be copper. All motors intended to operate on a 208 volt system must be designed and rated for 200 volts.
- B. **STANDARDS OF COMPARISON:** In the absence of specific motor specifications, in general, the best standard products of the leading motor manufacturers must be considered as a standard for comparison. The requirements of the NEMA standards for motors and generators must be deemed to contain the minimum requirements of performance and design.
- C. **OBJECTIONABLE NOISES:** Objectionable noises will not be tolerated and exceptionally quiet motors may be required for certain specified locations. Noise control tests as per the New York City Construction Codes may be performed as directed by the Commissioner. Such motors must bear a nameplate lettered "Quiet Motor." Springs and slip rings must be of approved non-ferrous material.
- D. **BEARINGS:**
1. Bearings, unless specified otherwise, must be of the ball or roller type. Motors one (1) horsepower and larger that are equipped with ball roller bearings must also have lubrication of the pressure-relief greasing type. The Contractor furnishing four (4) or more such motors must also furnish, as part of the Contract, a pressure grease gun of rugged design, of approximately ten (10) ounce capacity, complete with necessary adapters. The Contractor must also provide ten (10) pounds of approved gun grease.
 2. For any particular unit where sleeve bearings are deemed desirable, permission for their use may be granted by the Commissioner. Motors one (1) horsepower and larger that are equipped with sleeve type bearings must, in addition to having protected fittings easily accessed for oiling, be provided with visible means for determining normal oil level. Lubrication must be positive, automatic and continuous.
- E. **MOTOR TERMINALS AND BOXES:** Each motor must be furnished with flexible leads of sufficient length to extend for a distance of not less than three (3) inches beyond the face of the conduit terminal box. This box must be furnished of ample size to make and house motor connections. These requirements must be met irrespective of any other standards or practices. Size of cable terminals and conduit terminal box holes must be subject to approval. For motors five (5) horsepower or larger, each terminal must come with two (2) cast or forged copper pressure type connectors with bolts, nuts and washers. For motors of smaller ratings, connectors of other acceptable types may be furnished. For installations exposed to the weather or moist locations, terminal boxes must be of cast iron with threaded hubs and gasketed covers. Cover screws must be of non-corrosive material.
- F. **MOTOR TEMPERATURE RISES:** The motor nameplate temperature rises for the various types of motor enclosures must be as listed below:
- | | |
|---------------------------------------------|---------------|
| 1. Open Frame | 40 degrees C. |
| 2. Totally enclosed and enclosed fan cooled | 55 degrees C. |
| 3. Explosion proof and submersible | 55 degrees C. |
| 4. Partially enclosed and drip proof | 40 degrees C. |

The temperature of the various parts of a motor must meet the requirements of NEMA standards for the size and type of the motors. Tests for heating must be made by loading the motor to its rated horsepower and keeping it so loaded for the rated time interval or until the temperature becomes constant.



- G. SPECIAL CODE INSTALLATIONS: Electrical installations covered by special publications of NBFU and by special City rulings and regulations must comply in design and safety features with such applicable codes, regulations and rulings, and must be furnished and installed complete with all accessories and safety devices as therein specified.
- H. MOTORS ON LIGHTING PANELS: The largest A.C. motor permitted on branch circuits of lighting panels must not exceed 1/4 horsepower.
- I. MOTORS RATED: ½ horsepower and larger must be polyphase.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.8

3.8 MOTOR CONTROL EQUIPMENT:

This Section sets forth the requirements for motor controllers and associated devices. Such requirements are applicable to all motor control equipment furnished or installed.

- A. MANUFACTURER: All control equipment furnished under the Contract must be the product of a single manufacturer. Exceptions to this rule may be granted in the case of controllers for fractional horsepower motors driving special equipment, the various units of which have been engineered to obtain specific performance.
- B. CONTROL ITEMS REQUIRED: The Contractor furnishing motors must also furnish therewith complete disconnecting, starting and control equipment as required by the detailed Specifications, the various code authorities and for the successful operation of the driven equipment. These items include circuit breakers, magnetic starters with overload protection and low voltage release or protection, push button stations, pilot lights and alarms, float, pressure, temperature and limit switches, load transfer switches, devices for manual operation and speed controllers, etc. The Contractor must furnish as many of these items as required for the successful operation of the driven unit.
 - 1. Where a motor is to be located out of sight of the controller, the Contractor must furnish an approved disconnecting means to be mounted near motor.
- C. TYPES OF STARTERS:
 - 1. SQUIRREL CAGE: A.C. motors of the squirrel cage type, rated from one (1) to thirty (30) horsepower, must have magnetic across the line starters; motors rated above thirty (30) horsepower must be furnished with reduced voltage (autotransformer type) starter or part winding start with time delay to reduce inrush current. Size of starters must be based on 200V operation.
 - 2. SLIP RING: A.C. motors of the slip-ring type must be furnished with primary across the line starters interlocked with secondary starting and regulating equipment. The interlocking feature must prevent starting of the motor when the secondary controller is off the initial starting point.
 - 3. MAGNETIC: For fractional horsepower motors, magnetic type starters are not required unless the particular method of controlling the driven equipment makes them necessary. Where individual single phase fractional horsepower motors or the sum of fractional horsepower motors controlled by an automatic device are ½ horsepower or more, magnetic starters and circuit breakers must be used. Single phase A.C. motors smaller than ½ horsepower or three-phase A.C. motors smaller than one (1) horsepower where manual control is specified may be furnished with starters of toggle switch or push button type with inbuilt thermal protection. No additional disconnecting means is required to be furnished with this type of starter. This type of starter may also be used in series with automatic control devices such as thermostats, float and pressure switches, provided the individual motor or the sum of fractional horsepower motors is less than ½ horsepower. Means for manual operation must be provided.



- D. **DISCONNECTING BREAKER:** All motor starters, unless otherwise specified, must be provided with a disconnecting means in the form of a circuit breaker of the type specified under Article 3.5 CIRCUIT PROTECTIVE DEVICES. This disconnecting means must be contained in the same housing with the starter and must be operable from outside. Means must be provided for locking the handle of the circuit breaker in the "OFF" position if it is desired to take the equipment out of service and prevent unauthorized starting.
- E. **CONTROL CABINET – DRY LOCATIONS:** All starters must be furnished with general purpose, NEMA Type 1, sheet metal enclosures with hinged covers and baked enamel finish.
- F. **CONTROL CABINET – WATERTIGHT:** In wet locations, cast iron watertight enclosures with threaded hubs, galvanized and gasketed hinged covers must be provided.
- G. **PANELS:** Motor control devices and appliances must be mounted on approved insulating slabs with all wiring and connections made on the back of the slabs.
- H. **WIRING AND TERMINALS:** Wiring connections for currents of one hundred (100) Amperes or less may be made with copper wire or cable with special flameproof insulating coverings. Such wires must be installed in a neat workmanlike manner, flat against the slab, and held in place by clips. Connections must be made with pressure connectors for No. 8 AWG and larger wires, and with grommets for small stranded wires. Except for incoming and outgoing main leads, all connections must terminate on approved connector blocks, which may be installed on the face of the slab. For small, across the line starters, the above requirements may be modified if satisfactory connections are provided.
- I. **COPPER BUS:** For currents exceeding one hundred (100) Amperes, copper bus must be used in place of wires. The bus must be constructed of copper rods, tubing or flat strap, bent and shaped properly and securely attached to the slab in a neat and workmanlike manner. The cross section of copper must provide sufficient areas to keep current density at not more than one thousand (1,000) Amperes per square inch.
- J. **COOPERATION:** The Contractor's subcontractor(s) who furnish electrically operated equipment must give to the Contractor and the Contractor's electrical subcontractor full information relative to sizes and locations of apparatus furnished by them which require electrical connections.

END OF SECTION 01 35 06



**Department of
Design and
Construction**

Division 01 – DDC STANDARD GENERAL CONDITIONS
SINGLE CONTRACT PROJECTS
Issue Date: March 15, 2020

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**SECTION 01 35 26
SAFETY REQUIREMENTS PROCEDURES**

PART I – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].
- B. The Contractor shall comply with the requirements of “*The City of New York Department of Design and Construction Safety Requirements*”. This document is included in the Information for Bidders.

1.2 SUMMARY:

- A. This Section includes administrative and general procedural requirements for Safety and Health Requirements, including:
 - 1. Definitions
 - 2. Required Safety Meeting
 - 3. Compliance with Regulations
 - 4. Submittals
 - 5. Personnel Protective Equipment
 - 6. Hazardous and / or Contaminated Materials
 - 7. Emergency Suspension of Work
 - 8. Protection of Personnel
 - 9. Environmental Protection

1.3 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.
- B. Design Consultant: “Design Consultant” must mean the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the “Design Consultant” may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.4 REQUIRED SAFETY MEETINGS:

- A. Prior to commencing construction, the Resident Engineer will schedule and hold a preconstruction kick-off meeting either at DDC’s main office or at the Project site with representatives of the Contractor, including the principal on-site project representative, one or more safety representatives, the Commissioner’s designated representatives and other concerned parties for the purpose of reviewing the Contract safety requirements. Additionally, implementing Work safety provisions must be discussed.
- B. The Contractor is responsible for conducting weekly documented jobsite safety meetings, given to all jobsite personnel including all subcontractors on the Project, with the purpose of discussing safety topics and job-specific requirements at the DDC worksite.



1.5 COMPLIANCE WITH REGULATIONS:

- A. The Work, including contact with or handling of hazardous materials, disturbance or dismantling of structures containing hazardous materials, and disposal of hazardous materials, shall comply with the applicable requirement for 29 CFR Parts 1910 and 1926, and 40 CFR, Parts 61, 261, 761 and 763.
- B. Work involving disturbance or dismantling of asbestos or asbestos-containing materials, demolition of structures containing asbestos and removal of asbestos, shall comply with 40 CFR Part 61, Subparts A and M, and 40 CFR Part 763, as applicable.
- C. Additionally, Work shall comply with all applicable federal, state, and local safety and health regulations.
- D. In case of a conflict between applicable regulations, the more stringent requirements shall apply.
- E. All workers working on the DDC Project site are required by NYC Local Law 41 to complete the OSHA 10-hour training course.

1.6 SUBMITTALS:

- A. The Contractor shall submit to the Resident Engineer, copies of the Safety Program, Site Safety Plan and other required documentation in accordance with the *"New York City Department of Design and Construction Safety Requirements"*.
- B. Permits: If hazardous materials are disposed of off-site, the Contractor must submit to the Resident Engineer copies of shipping manifests, permits from applicable federal, state, or local authorities and disposal facilities, and certificates that the material has been disposed of in accordance with regulations.
- C. Accident Reporting: Submit a copy of each accident report to the Resident Engineer in accordance with the *"New York City Department of Design and Construction Safety Requirements"*.
- D. All asbestos and lead project regulatory notifications are to be submitted to DDC's Office of Environmental and Geotechnical Services (OEGS) through the Resident Engineer.
- E. Request for Subcontractor Approval: Any subcontractor performing environmental work must submit required documentation for approval to perform such work as required by DDC's OEGS.

PART II – PRODUCTS

2.1 PERSONNEL PROTECTIVE EQUIPMENT:

- A. Special facilities, devices, equipment, and similar items used by the Contractor in execution of the Work shall comply with 29 CFR Part 1910, subpart I, Part 1926, subpart E, and other applicable regulations.

2.2 HAZARDOUS AND / OR CONTAMINATED MATERIALS:

- A. The Contractor shall bring to the attention of the Commissioner, any material encountered during execution of the Work that the Contractor suspects to be hazardous and / or contaminated.
- B. The Commissioner shall determine whether the Contractor shall perform tests to determine if the material is hazardous and / or contaminated. A change to the Contract price may be provided, subject to the applicable provisions of the Contract.
- C. If the material is found to be hazardous, the Commissioner may direct the Contractor to remediate the hazard and a change to the Contract price may be provided, subject to the applicable provisions of the Contract.



PART III – EXECUTION

3.1 EMERGENCY SUSPENSION OF WORK:

- A. When the Contractor is notified by the Commissioner of noncompliance with the safety provisions of the Contract, the Contractor shall immediately, unless otherwise instructed, correct the unsafe condition, at no additional cost to the City.
- B. If the Contractor fails to comply promptly, all or part of the Work may be stopped by notice from the Commissioner.
- C. When, in the opinion of the Commissioner, the Contractor has taken satisfactory corrective action, the Commissioner shall provide written notice to the Contractor that the Work may resume.
- D. The Contractor shall not be allowed any extension of time or compensation for damages in connection with a work stoppage for an unsafe condition.

3.2 PROTECTION OF PERSONNEL:

- A. The Contractor shall take all necessary precautions to prevent injury to the public, occupants, or damage to property of others. The public and occupants includes all persons not employed by the Contractor or a subcontractor.
- B. Whenever practical, the work area shall be fenced, barricaded, or otherwise blocked off from the public or occupants to prevent unauthorized entry into the work area, in compliance with the requirements of Section 01 50 00 TEMPORARY FACILITIES, SERVICES AND CONTROLS, and including without limitation, the following:
 - 1. Provide traffic barricades and traffic control signage where construction activities occur in vehicular areas.
 - 2. Corridors, aisles, stairways, doors, and exit ways shall not be obstructed or used in a manner to encroach upon routes of ingress or egress utilized by the public or occupants, or to present an unsafe condition to the public or occupants.
 - 3. Store, position and use equipment, tools, materials, scraps and trash in a manner that does not present a hazard to the public or occupant by accidental shifting, ignition, or other hazardous activity.
 - 4. Store and transport refuse and debris in a manner to prevent unsafe and unhealthy conditions for the public and occupants. Cover refuse containers and remove refuse on a frequent regular basis acceptable to the Resident Engineer. Use tarpaulins or other means to prevent loose transported materials from dropping from trucks or other vehicles.

3.3 ENVIRONMENTAL PROTECTION:

- A. Dispose of solid, liquid and gaseous contaminants in accordance with local codes, laws, ordinances and regulations.
- B. Comply with applicable federal, state, and local noise control laws, ordinances, and regulations, including but not limited to 29 CFR 1910.95, 29 CFR 1926.52 and NYC Administrative Code Chapter 28 of Title 15.

END OF SECTION 01 35 26



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**SECTION 01 35 91
HISTORIC TREATMENT PROCEDURES**

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 35 91

PART I – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. This Section includes administrative and procedural requirements for the treatment of Landmark Structures and Landmark Quality Structures, as identified in the Addendum. Specific requirements are indicated in other sections of the Specifications.
- B. This Section includes, without limitation, the following:
1. Storage and protection of existing historic materials
 2. General Protection
 3. Protection during use of heat-generating equipment
 4. Photographic Documentation
 5. NYC Landmarks Preservation Commission Final Approval signoffs

1.3 RELATED SECTIONS: include without limitation the following:

- A. Section 01 10 00 SUMMARY
- B. Section 01 32 33 PHOTOGRAPHIC DOCUMENTATION
- C. Section 01 33 00 SUBMITTAL PROCEDURES
- D. Section 01 77 00 CLOSEOUT PROCEDURES
- E. Section 01 78 39 CONTRACT RECORD DOCUMENTS

1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.
- B. Design Consultant: "Design Consultant" means the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.
- C. Landmark Structure or Site: Any building or site which has been designated as a landmark, or any building or site within a landmark district, as designated by the New York City (NYC) Preservation Commission or the New York State Historic Preservation Office.
- D. Landmark Quality Structure: Any building which has been determined by the City to be of landmark quality and/or historical significance.



- E. Preservation: To apply measures necessary to sustain the existing form, integrity, and materials of a historic property. Work may include preliminary measures to protect and stabilize the property.
- F. Rehabilitation: To make possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features that convey its historical, cultural, or architectural values.
- G. Restoration: To accurately depict the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and the reconstruction of missing features from the restoration period.
- H. Reconstruction: To reproduce in the exact form and detail a building, structure, or artifact as it appeared at a specific period in time.
- I. Stabilize: To apply measures designed to reestablish a weather-resistant enclosure and the structural reinforcement of an item or portion of the building while maintaining the essential form as it exists at present.
- J. Protect and Maintain: To remove deteriorating corrosion, reapply protective coatings, and install protective measures such as temporary guards; to provide the least degree of intervention.
- K. Repair: To stabilize, consolidate, or conserve; to retain existing materials and features while employing as little new material as possible. Repair includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials. Within restoration, repair also includes limited replacement in kind, rehabilitation, and reconstruction, with compatible substitute materials for deteriorated or missing parts of features when there are surviving prototypes.
- L. Replace: To duplicate and replace entire features with new material in kind. Replacement includes the following conditions:
 - 1. Duplication: Includes replacing elements damaged beyond repair or missing. Original material is indicated as the pattern for creating new duplicated elements.
 - 2. Replacement with New Materials: Includes replacement with new material when original material is not available as patterns for creating new duplicated elements.
 - 3. Replacement with Substitute Materials: Includes replacement with compatible substitute materials. Substitute materials are not allowed, unless otherwise indicated.
- M. Remove: To detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- N. Remove and Salvage: To detach items from existing construction and deliver them to the City ready for reuse.
- O. Remove and Reinstall: To detach items from existing construction, repair and clean them for reuse, and reinstall them where indicated.
- P. Existing to Remain or Retain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed and salvaged, or removed and reinstalled.
- Q. Material in Kind: Material that matches existing materials as much as possible, in species, cut, color, grain, and finish.

1.5 SUBMITTALS:

- A. Historic Treatment Program: Submit a written plan for each phase or process, including protection of surrounding materials during operations. Describe in detail materials, methods, and equipment to be used for each phase of the Work.



- B. Alternative Methods and Materials: If alternative methods and materials to those indicated are proposed for any phase of the Work, submit for the Commissioner's approval a written description, including evidence of successful use on other comparable projects and provide a program of planned testing to demonstrate the effectiveness of the alternative methods and materials for use on this Project.
- C. Qualification Data: Submit qualification data for historic treatment specialists as specified and required by individual sections of the Project specifications.
- D. Photographs for Designated Landmark Structures: Submit photographs in accordance with Section 01 32 33 PHOTOGRAPHIC DOCUMENTATION and as described in this section.
- E. Record Documents: Include modifications to manufacturer's written instructions and procedures, as documented in the historic treatment preconstruction conference and as the Work progresses.

1.6 QUALITY ASSURANCE:

- A. Special Experience Requirements: Special Experience Requirements may apply to the firm that will provide Historic Treatment Services. If applicable, such Special Experience Requirements are set forth in the Bid Booklet.
- B. Historic Treatment Preconstruction Conference: The Resident Engineer will schedule and hold a preconstruction meeting at the site in accordance with Section 01 31 00 PROJECT MANAGEMENT AND COORDINATION.
 - 1. Review manufacturer's written instructions for precautions and effects of products and procedures on building materials, components, and vegetation.
 - a. Record procedures established as a result of the review and distribute to affected parties.

1.7 STORAGE AND PROTECTION OF HISTORIC MATERIALS:

- A. Removed and Salvaged Historic Materials: As specified and required by individual sections of the Project specifications.
- B. Removed and Reinstalled Historic Materials: As specified and required by individual sections of the Project specifications.
- C. Existing Historic Materials to Remain: Protect construction indicated to remain against damage and soiling during historic treatment. When permitted by the Commissioner, items may be removed to a suitable, protected storage location during historic treatment and reinstalled in their original locations after historic treatment operations are complete.
- D. Storage and Protection: When removed from their existing location, store historic materials, at a location acceptable to the Commissioner, within a weather tight enclosure where they are protected from wetting by rain, snow, or ground water, and temperature variations. Secure stored materials to protect from theft.
 - 1. Identify removed items with an inconspicuous mark indicating their original location.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION

3.1 GENERAL PROTECTION:

- A. Comply with manufacturer's written precautions against harmful effects of products and procedures on adjacent building materials, components, and vegetation.
- B. Ensure that supervisory personnel are present when work begins and throughout its progress.
- C. Temporary Protection of Historic Materials during Construction:



1. Protect existing materials during installation of temporary protections and construction. Do not deface or remove existing materials.
 2. Attachments of temporary protection to existing construction must be approved by the Commissioner prior to installation.
- D. Protect landscape work adjacent to or within work areas as follows:
1. Provide barriers to protect tree trunks.
 2. Bind spreading shrubs.
 3. Use coverings that allow plants to breathe and remove coverings at the end of each day. Do not cover plant material with a waterproof membrane for more than eight (8) hours at a time.
 4. Set scaffolding and ladder legs away from plants.
- E. Existing Drains: Prior to the start of work or any cleaning operations, test drains and other water removal systems to ensure that drains and systems are functioning properly. Notify the Commissioner immediately of drains or systems that are stopped or blocked. Do not begin Work pertaining to this Section until the drains are in working order.
1. Provide a method to prevent solids, including stone or mortar residue, from entering the drains or drain lines. Clean out drains and drain lines that become blocked or filled by sand or any other solids because of the Work performed under this Contract.
 2. Protect storm drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

3.2 PROTECTION DURING USE OF HEAT-GENERATING EQUIPMENT:

- A. No roofing work requiring the use of an open flame will be permitted on any Landmark Structure or any Landmark Quality Structure whose roof or wall structure is made of wood or primarily of wood.
- B. Comply with the following procedures while performing work with heat-generating equipment, including welding, cutting, soldering, brazing, paint removal with heat, and other operations where open flames or implements utilizing heat are used:
1. Obtain Commissioner's approval for operations involving use of open-flame or welding equipment. Notification must be given for each occurrence and location of work with heat-generating equipment.
 2. Where possible, use heat-generating equipment in shop areas or outside the building.
 3. Before work with heat-generating equipment commences, furnish personnel to serve as a fire watch (or watches) for location(s) where work is to be performed.
 4. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.
 5. Remove and keep the area free of combustibles, including rubbish, paper, waste, etc., within the area of operations.
 6. If combustible material cannot be removed, provide fireproof blankets to cover such materials.
 7. Where possible, furnish and use baffles of metal or gypsum board to prevent the spraying of sparks or hot slag into surrounding combustible material.
 8. Prevent the extension of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.



9. Inspect each location of the day's work not sooner than thirty (30) minutes after completion of operations to detect hidden or smoldering fires and to ensure that proper housekeeping is maintained.
- C. Where sprinkler protection exists and is functional, maintain it without interruption while operations are being performed. If operations are performed close to automatic sprinkler heads, shield the individual heads temporarily with guards.

3.3 PHOTOGRAPHIC DOCUMENTATION:

- A. Photographs for Designated Landmark Structures: Show existing conditions prior to any historic treatments, including one overall photograph and two close-up photographs of all areas of work affected. Show one overall photograph and two close-up photographs of all areas of work after the successful execution of all historical treatments.

3.4 NEW YORK CITY LANDMARKS PRESERVATION COMMISSION FINAL APPROVALS SIGNOFF:

- A. For all projects involving a Landmark Structure or Site, the Contractor, at the completion of the Work, must submit to the Commissioner, in accordance with Section 01 78 39 CONTRACT RECORD DOCUMENTS, all documentation concerning the successful execution of all historic treatments. This must include, but not be limited to, copies of all before and after photographs of historic treatments, one copy of the Contractor's as-built drawings, copies of testing and analysis results, including cleaning, mortar analysis, pointing mortars and all other information pertaining to work performed under the NYC Landmarks Preservation Commission jurisdiction.

END OF SECTION 01 35 91



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**SECTION 01 40 00
QUALITY REQUIREMENTS**

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. This Section includes the following:
 - 1. Definitions
 - 2. Conflicting Requirements
 - 3. Quality Assurance
 - 4. Quality Control
 - 5. Approval of Materials
 - 6. Special Inspections (Controlled Inspection)
 - 7. Inspections by Other City Agencies
 - 8. Certificates of Approval
 - 9. Acceptance Tests
 - 10. Repair and Protection
- B. This section includes administrative and procedural requirements for quality control to assure compliance with quality requirements specified in the Contract Documents.
- C. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Documents.
- D. Specified tests, inspections, and related actions do not limit Contractor's other quality assurance and quality control procedures that facilitate compliance with the Contract Documents.
- E. Provisions of this section do not limit requirements for the Contractor to provide quality assurance and quality control services required by the Commissioner or authorities having jurisdiction.
- F. Specific test and inspection requirements are specified in the individual sections of the Specifications.
- G. LEED: Refer to the Addendum to identify whether this Project is designed to comply with a Certification Level according to the U.S. Green Building Council's Leadership in Energy & Environmental Design (LEED) Rating System, as specified in Section 01 81 13.03 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v3 BUILDINGS or Section 01 81 13.04 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v4 BUILDINGS.
- H. COMMISSIONING: Refer to the Addendum to identify whether this Project will be commissioned by an independent third party under separate contract with the City of New York. Commissioning must be in accordance with ASHRAE and USGBC LEED-NC procedures, as described in Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS and/ or Section 01 91 15 GENERAL COMMISSIONING REQUIREMENTS FOR BUILDING ENCLOSURE. The Contractor must cooperate with the Commissioning Agent and provide whatever assistance is required.

1.3 RELATED SECTIONS: Include without limitation the following:

- A. Section 01 10 00 SUMMARY
- B. Section 01 31 00 PROJECT MANAGEMENT AND COORDINATION



- C. Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION
- D. Section 01 33 00 SUBMITTAL PROCEDURES
- E. Section 01 77 00 CLOSEOUT PROCEDURES
- F. Section 01 78 39 CONTRACT RECORD DOCUMENTS

1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.
- B. Design Consultant: "Design Consultant" means the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.
- C. Commissioning: A Total Quality Assurance process that includes checking the design and installation of equipment, as well as performing functional testing of the same to confirm that the installed equipment is operating and in conformance with the Contract Documents and the City's requirements.

1.5 CONFLICTING REQUIREMENTS:

- A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, the Contractor must comply with the most stringent requirement. The Contractor must refer any uncertainties and/or conflicting requirements to the Commissioner for a decision before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified must be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. The Contractor must refer any uncertainties to the Commissioner for a decision before proceeding.

1.6 QUALITY ASSURANCE:

- A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required. Individual Specification Sections specify additional requirements.
- B. Installer Qualifications: Special Experience Requirements may apply to the firm that will install, erect or assemble specified work required for the Project. If applicable, such Special Experience Requirements are set forth in the Bid Booklet.
- C. Manufacturer Qualifications: Special Experience Requirements may apply to the firm that will manufacture equipment, products or systems specified for the Project. If applicable, such Special Experience Requirements are set forth in the Bid Booklet.
- D. Fabricator Qualifications: Special Experience Requirements may apply to the firm that will fabricate material, products or systems specified for the Project. If applicable, such Special Experience Requirements are set forth in the Bid Booklet.
- E. Professional Engineer Qualifications: A professional engineer who is licensed to practice in the State of New York and who is experienced in providing engineering services of the kind indicated. Engineering



services are defined as those performed for installations of the system, assembly, or products that are similar to those indicated for this Project in material, design, and extent.

- F. **Factory-Authorized Service Representative Qualifications:** An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- G. **Mockups:** Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
 - 1. Build mockups in location and of size indicated or, if not indicated, as directed by the Resident Engineer.
 - 2. Notify Resident Engineer seven (7) days in advance of dates and times when mockups will be constructed.
 - 3. Demonstrate the proposed range of aesthetic effects and workmanship.
 - 4. Obtain Design Consultant's approval of mockups before starting work, fabrication, or construction.
 - 5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 6. Demolish and remove mockups when directed, unless otherwise directed or indicated.

1.7 QUALITY CONTROL:

- A. **City's Responsibilities:** Where quality-control services are indicated as the City's responsibility in the Specifications, the City will engage a qualified testing agency to perform these services.
 - 1. **COST OF TESTS BORNE BY THE CITY:** Where the City directs tests to be performed to determine compliance with the Specifications regarding materials or equipment, and where such compliance is ascertained as a result thereof, the City will bear the cost of such tests.
 - 2. The City will furnish the Contractor with names, addresses, and telephone numbers of testing entities engaged and a description of the types of testing and inspecting they are engaged to perform.
 - 3. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to the Contractor.
- B. **Contractor's Responsibility:** Tests and inspections not explicitly assigned to the City are the Contractor's responsibility. Unless otherwise indicated, the Contractor must provide quality control services as set forth in the Specifications and those required by authorities having jurisdiction, whether specified or not.
 - 1. **COST OF TESTS BORNE BY CONTRACTOR** – In the case of tests which are specifically called for in the Specifications to be provided by the Contractor or tests which are required by any authority having jurisdiction, but are not indicated as the responsibility of the City, the cost thereof will be borne by the Contractor and will be deemed to be included in the Contract price. The Contractor must reimburse the City for expenditures incurred in providing tests on materials and equipment submitted by the Contractor as the equivalent of that specifically named in the Specifications and rejected for non-compliance.
 - 2. Where services are indicated as Contractor's responsibility, the Contractor must engage a qualified testing agency to perform these quality-control services. Any testing agency engaged by the Contractor to perform quality control services is subject to prior approval by the Commissioner.
 - 3. The Contractor must not employ same entity engaged by the City, unless agreed to in writing by the Commissioner.
 - 4. The Contractor must notify testing agencies and the Resident Engineer at least 72 hours in advance of the date and time for the performance of Work that requires testing or inspecting.
 - 5. Where quality control services are indicated as Contractor's responsibility, the Contractor must submit a certified written report of each quality-control service, in triplicate, to the Commissioner.



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6. Testing and inspecting requested by the Contractor and not required by the Contract Documents are Contractor's responsibility.
 7. The Contractor must submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- C. **Manufacturer's Field Services:** Where indicated, the Contractor must engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Results must be submitted in writing as specified in Section 01 33 00 SUBMITTAL PROCEDURES.
- D. **Retesting/Re-inspecting:** Regardless of whether the original tests or inspections were the Contractor's responsibility, the Contractor must provide quality control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- E. **Associated Services:** The Contractor must cooperate with entities performing required tests, inspections, and similar quality control services, and must provide reasonable auxiliary services as requested. The Contractor must notify the testing agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
 2. Incidental labor and facilities necessary to facilitate tests and inspections.
 3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist testing entity in obtaining samples.
 4. Facilities for storage and field curing of test samples.
 5. Delivery of samples to testing entities.
 6. Design mix proposed for use for material mixes that require control by the testing entity.
 7. Security and protection for samples and for testing and inspecting equipment at the Project site.
- F. **Coordination:** Coordinate sequence of activities to accommodate required quality assurance and quality control services with minimal delay and avoid necessity of removing and replacing construction to accommodate testing and inspecting.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.
 2. Coordinate and cooperate with the Commissioning Authority/Agent as applicable for start-up, inspection and functional testing in the implementation of the Commissioning Plan.
- G. **Manufacturer's Directions:** Where the Specifications provide that the manufacturer's directions are to be used, such printed directions must be submitted to the Commissioner.
- H. **Inspection of Material:** In the event that the Specifications require the Contractor to engage the services of an entity to witness and inspect any material especially manufactured or prepared for use in or part of the permanent construction, such entity will be subject to prior written approval by the Commissioner.
1. **NOTICE** - The Contractor must give notice in writing to the Commissioner, sufficiently in advance of its intention to commence the manufacture or preparation of materials especially manufactured or prepared for use in or as part of the permanent construction. Such notice must contain a request for inspection, the date of commencement, and the expected date of completion of the manufacture or preparation of materials. Upon receipt of such notice, the Commissioner will arrange to have a representative present at such times during the manufacture as may be necessary to inspect the materials, or the Commissioner will notify the Contractor that the inspection will be made at a point other than the point of manufacture, or the Commissioner will notify the Contractor that inspection will be waived.
- I. **No Shipping Before Inspection:** The Contractor must comply with the foregoing before shipping any material.



- J. Certificate of Manufacture: When the Commissioner so requires, the Contractor must furnish to the Commissioner, authoritative evidence in the form of Certificates of Manufacture that the materials to be used in the Work have been manufactured and tested in conformity with the Specifications. These certificates must include copies of the results of physical tests and chemical analyses where necessary, that have been made directly on the product, or on similar products being fabricated by the manufacturer. This may include such approvals as the Bureau of Standards and Appeals (B.S.A.), the Materials and Equipment (M.E.A.) acceptance Index, the Bureau of Electrical Control (B.E.C.), etc.
- K. Acceptance: When materials or manufactured products comprise of such quantity that it is not practical to make physical tests or chemical analyses directly on the product furnished, a certificate stating the results of such tests or analyses of similar materials which were concurrently produced may, at the discretion of the Commissioner, be considered as the basis for the acceptance of such material or manufactured product.
- L. Testing Compliance: The testing personnel must make the necessary inspections and tests, and the reports thereof must be in such form as will facilitate checking to determine compliance with the Specifications, indicating thereon all analyses and/or test data and interpreted results thereof.
- M. Reports: Six (6) copies of the reports must be submitted and authoritative certification thereof must be furnished to the Commissioner as a prerequisite for the acceptance of any material or equipment.
- N. Rejections: If, in making any test, it is ascertained by the Commissioner that the material or equipment does not comply with the Specifications, the Contractor will be notified thereof, and will be directed to refrain from delivering said materials or equipment, or to promptly remove it from the site or from the Work and replace it with acceptable material at no additional cost to the City.
- O. Furnish Designated Materials: Upon rejection of any material or equipment submitted as the equivalent of that specifically named in the Specifications, the Contractor must immediately proceed to furnish the designated material or equipment.

1.8 APPROVAL OF MATERIALS:

- A. Local Laws: All materials, appliances and types or methods of construction must be in accordance with the Specifications and must in no event be less than that necessary to conform to the requirements of the New York City (NYC) Construction Codes, Administrative Code and Charter of the City of New York.
- B. Approval of Manufacturer: The names of proposed manufacturers, material suppliers, and dealers who are to furnish materials, fixtures, equipment, appliances or other fittings must be submitted to the Commissioner for approval, as early as possible, to afford proper review and analysis. No manufacturer will be approved for any materials to be furnished under the Contract unless it has a plant of ample capacity and have successfully produced similar products. All approvals of materials or equipment that are legally required by the NYC Construction Codes and other governing authorities must be obtained prior to installation.
- C. All Materials: Fixtures, fittings, supplies and equipment furnished under the Contract must be new and unused, except as approved by the Commissioner, and of standard first-grade quality and of the best workmanship and design. The City of New York encourages the use of recycled products where practical.
- D. INFORMATION TO SUPPLIERS - In asking for prices on materials under any item of the Contract, the Contractor must provide the manufacturer or dealer with such complete information from the Specifications and Contract Drawings as may in any case be necessary, and in every case the Contractor must inform the manufacturer or dealer of all the General Conditions and requirements herein contained.



1.9 SPECIAL INSPECTIONS:

A. SPECIAL INSPECTIONS:

1. Inspection of selected materials, equipment, installation, fabrication, erection, or placement of components and connections made during the progress of the Work to ensure compliance with the Contract Documents and provisions of the NYC Construction Codes, will be made by a Special Inspector. The City of New York will retain the services of the Special Inspector and bear the costs for the performance of Special Inspections in compliance with NYC Construction Codes requirements or as additionally may be called for in the project specifications, except as noted below for Form TR-3: Technical Report for Concrete Design Mix. The Special Inspector will be an entity that is in compliance with the requirements of the NYC Construction Codes. The Contractor must notify the relevant Special Inspector in writing at least 72 hours before the commencement of any Work requiring special inspection.
2. Form TR3: Technical Report Concrete Design Mix: The Contractor will be responsible for, and bear all costs associated with the filing and securing of approvals, if any, for Form TR3: Technical Report Concrete Design Mix, including, but not limited to, engaging the services of a New York City licensed Concrete Testing Lab for the review and approval of concrete design mix, testing, signatures and professional seals, etc., compliant with NYC Department of Buildings requirements, for each concrete design mix.
3. The Contractor must notify the relevant Special Inspector in writing at least 72 hours before the commencement of any Work requiring Special Inspection. The Contractor will be responsible for and bear related costs to assure that all construction or work has suitable access and remains exposed for inspection purposes until the required inspection is completed.
4. Inspections and tests performed under "Special Inspection" will not relieve the Contractor of the responsibility to comply with the Contract Documents, and that there is no warranty given to the Contractor by the City of New York in connection with such inspection and tests or certifications made under "Special Inspections".
5. The Contractor must coordinate with the Resident Engineer or DDC Project Manager to provide access and schedule the Work for inspection by the Special Inspector.

1.10 INSPECTIONS BY OTHER CITY AGENCIES:

- A. Letter of Completion: Just prior to Substantial Completion of the Project, the Commissioner will file with the Department of Buildings, an application for a Letter of Completion or a Certificate of Occupancy for the structure.
- B. Final Inspections: In connection with the above-mentioned application for a Letter of Completion or a Certificate of Occupancy and before certificates of final payments are issued, the Contractor will be required to arrange for all final inspections by the inspection staff of the Department of Buildings, Fire Department, or other Governmental Agencies having jurisdiction, and secure all reports, sign offs, certificates, etc., by such inspection staff or other governmental agencies, in order that a Letter of Completion or Certificate of Occupancy can be issued promptly.

1.11 CERTIFICATES OF APPROVAL:

- A. Responsibility: The Contractor will be responsible for and must obtain all final approvals for the Work installed under the Contract in the form of such certificates that are required by all governmental agencies having jurisdiction over the Work of the Contract.
- B. Transmittal: All such certificates must be forwarded to the Commissioner through the Resident Engineer.



1.12 ACCEPTANCE TESTS:

- A. Government Agencies: All equipment and appliances furnished and installed under the Contract must conform to the requirements of the Specifications and will in no event be less than that necessary to comply with the minimum requirements of the law and all of the governmental agencies having jurisdiction.
- B. Notice of Tests: Whenever the Specifications and/or any governmental agency having jurisdiction requires the acceptance test, the Contractor will give to all concerned, written notice of the time when these tests will be conducted.
- C. Energy: The City will furnish all energy, fuel, water, and light required for tests.
- D. Labor and Materials: The Contractor must furnish labor and all other material and instruments necessary to conduct the acceptance tests at no additional cost to the City.
- E. Certificates: The Final Acceptance by the Commissioner will be contingent upon the Contractor delivering to the Commissioner all necessary certificates evidencing compliance in every respect with the requirements of the regulatory agencies having jurisdiction.
- F. Results: If the results of tests and Special Inspections indicate that the material or procedures do not meet requirements as set forth on the Contract Drawings or in the Specifications or are otherwise unsatisfactory, the Contractor must only proceed as directed by the Resident Engineer. Additional costs resulting from retesting, re-inspecting, replacing of material and/or damage to the Work and any delay caused to the schedule will be borne by the Contractor.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION

3.1 REPAIR AND PROTECTION

- A. General: On completion of testing, inspecting, sample taking, and similar services, the Contractor must repair damaged construction and restore substrates and finishes.
 - 1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.

END OF SECTION 01 40 00



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**SECTION 01 42 00
REFERENCES**

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 DEFINITIONS:

REFER TO THE ADDENDUM, Article IX, FOR ADDITIONAL DEFINITIONS AND REVISIONS TO THE CONTRACT AND SPECIFICATIONS

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.
- B. "APPROVED," ETC. - "Approved," "acceptable," "satisfactory," and words of similar import will mean and intend approved, acceptable, or satisfactory to the Commissioner.
- C. Design Consultant: "Design Consultant" means the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.
- D. "DIRECTED," "REQUIRED," ETC.- Wherever reference is made in the Contract to the Work or its performance, the terms "directed," "required," "permitted," "ordered," "designated," "prescribed," "determined," and words of similar import will, unless expressed otherwise, imply the direction, requirements, permission, order, designation or prescription of the Commissioner.
- E. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings.



1.3 CODES, AGENCIES AND REGULATIONS:

A.B.A	Architectural Barriers Act
A.D.A.A.G.	Americans with Disabilities Act (ADA) Accessibility Guidelines
B.G. & E.	Bureau of Gas and Electricity of the City of New York
B.S. A.	New York City Board of Standards and Appeals
DOE	Department of Energy
E.C.C.C.N.Y.S.	Energy Conservation Construction Code of New York State
EPA	Environmental Protection Administration
N.Y.C.C.C.	New York City Construction Codes – includes: New York City Energy Conservation Code (N.Y.C. E.C.C.) New York City Plumbing Code (N.Y.C. P.C.) New York City Building Code (N.Y.C. P.C.) New York City Mechanical Code (N.Y.C. M.C.) New York City Fuel Gas Code (N.Y.C. F.G.C.)
N.Y.S.D.O.L	New York State Department of Labor
N.Y.C.D.E.P	New York City Department of Environmental Protection
N.Y.C.E.C.	New York City Electrical Code
N.Y.C.F.C	New York City Fire Code
N.Y.S...D.E.C.	New York State Department of Environmental Conservation
O.S.H.A.	Occupational Safety & Health Administration

1.4 INDUSTRY STANDARDS:

- A. **STANDARD REFERENCES** – Unless otherwise specifically indicated in the Contract Documents, whenever reference is made to the furnishing of materials or testing thereof that conforms to the standards of any technical society, organization or body, it must be construed to mean the latest standard, code, specification adopted and published by that technical society, organization or body, as of the date of the bid opening, unless the provisions of the N.Y.C.C.C. adopts a different or earlier dated version of such standard. All references to the ICC A117.1 are only to the 2009 version, whether or not a specific version is specified.
- B. **APPLICABILITY OF STANDARDS:** Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect, to the extent referenced, as if bound or copied directly into the Contract Documents. Such standards are made a part of the Contract Documents by reference.
- C. **CONFLICTING REQUIREMENTS:** Where compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantity or quality, comply with the most stringent requirements. Immediately refer uncertainties and requirements that are different but apparently equal, to the Commissioner in writing for a decision before proceeding.



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- D. STANDARD SPECIFICATIONS - When no reference is made to a code, standard, or specification, the Standard Specifications of the ASTM or the AIEE, as the case may be, shall govern.
- E. REFERENCES - Reference to a technical society, organization, or body may be made in the Specifications by abbreviations. Abbreviations and acronyms used in the Specifications and other Contract Documents mean the associated name. The following names are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the Issue Date of the Contract Documents.

AA	Aluminum Association, Inc. (The)
AAADM	American Association of Automatic Door Manufacturers
AABC	Associated Air Balance Council
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists (The)
ABAA	Air Barrier Association of America
ABMA	American Bearing Manufacturers Association
ACI	ACI International (American Concrete Institute)
ACPA	American Concrete Pipe Association
AEIC	Association of Edison Illuminating Companies, Inc. (The)
AF&PA	American Forest & Paper Association
AGA	American Gas Association
AGC	Associated General Contractors of America (The)
AGMA	American Gear Manufacturer Association
AHA	American Hardboard Association (Now part of CPA)
AHAM	Association of Home Appliance Manufacturers
AI	Asphalt Institute
AIA	American Institute of Architects (The)



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AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALCA	Associated Landscape Contractors of America (Now PLANET - Professional Landcare Network)
ALSc	American Lumber Standard Committee, Incorporated
ALI	Automotive Lift Institute
AMCA	Air Movement and Control Association International, Inc.
ANSI	American National Standards Institute
AOSA	Association of Official Seed Analysts, Inc.
APA	APA - The Engineered Wood Association
APA	Architectural Precast Association
API	American Petroleum Institute
ARI	Air-Conditioning & Refrigeration Institute
ARMA	Asphalt Roofing Manufacturers Association
ASA	American Standards Association
ASAE	American Society of Agricultural Engineers
ASCE/SEI	American Society of Civil Engineers, Structural Engineering Institute
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASSE	American Society of Sanitary Engineering
ASTM	ASTM International (Formerly: American Society for Testing and Materials International)
AWCI	AWCI International (Association of the Wall and Ceiling Industry International)
AWCMA	American Window Covering Manufacturers Association (Now WCSC)



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AWI	Architectural Woodwork Institute
AWPA	American Wood-Preservers' Association
AWSC	American Welding Society
AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Industry Association (The)
BICSI	BICSI
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International)
BISSC	Baking Industry Sanitation Standards Committee
CIBSE	Chartered Institute of Building Services Engineers
CCC	Carpet Cushion Council
CDA	Copper Development Association
CEA	Canadian Electricity Association
CFFA	Chemical Fabrics & Film Association, Inc.
CGA	Compressed Gas Association
CGSB	Canadian General Standards Board
CIMA	Cellulose Insulation Manufacturers Association
CIPRA	Cast Iron Pipe Research Association
CISCA	Ceilings & Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CPA	Composite Panel Association
CPPA	Corrugated Polyethylene Pipe Association



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CPSC	Consumer Product Safety Commission
CRI	Carpet & Rug Institute (The)
CRSI	Concrete Reinforcing Steel Institute
CSA	Canadian Standards Association
CSI	Cast Stone Institute
CSI	Construction Specifications Institute (The)
CSSB	Cedar Shake & Shingle Bureau
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute)
DASMA	Door and Access Systems Manufacturer's Association International
DHI	Door and Hardware Institute
DOC	U.S. Department of Commerce – National Institute of Standards and Technology
EIA	Electronic Industries Alliance
DOJ	U.S. department of Justice
EIMA	EIFS Industry Members Association
DOL	U.S. Department of labor
EJCDC	Engineers Joint Contract Documents Committee
DOTn	U.S. Department of Transportation
EN	European Committee of Standards
EJMA	Expansion Joint Manufacturers Association, Inc.
ESD	ESD Association
EVO	Efficiency Valuation Organization
FEMA	Federal Emergency Management Agency



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FIBA	Federation Internationale de Basketball Amateur (The International Basketball Federation)
FIVB	Federation Internationale de Volleyball (The International Volleyball Federation)
FMG	FM Global (Formerly: FM - Factory Mutual System)
FMRC	Factory Mutual Research (Now FMG)
FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.
FSA	Fluid Sealing Association
FSC	Forest Stewardship Council
GA	Gypsum Association
GANA	Glass Association of North America
GRI	(Now GSI)
GS	Green Seal
GSI	Geosynthetic Institute
HI	Hydraulic Institute
HI	Hydronics Institute
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)
HPVA	Hardwood Plywood & Veneer Association
HPW	H. P. White Laboratory, Inc.
HUD	U.S. Department of Housing and Urban Development
IAPMO	International Association of Plumbing and Mechanical Officials
IAS	International Approval Services (Now CSA International)
IBF	International Badminton Federation
ICC	International Code Council, Inc.
ICEA	Insulated Cable Engineers Association, Inc.



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ICRI	International Concrete Repair Institute, Inc.
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The)
IESNA	Illuminating Engineering Society of North America
IENT	Institute of Environmental Sciences and Technology
IGCC	Insulating Glass Certification Council
IGMA	Insulating Glass Manufacturers Alliance
ILI	Indiana Limestone Institute of America, Inc.
ISO	International Organization for Standardization
ISSFA	International Solid Surface Fabricators Association
ITS	Intertek
ITU	International Telecommunication Union
KCMA	Kitchen Cabinet Manufacturers Association
LMA	Laminating Materials Association (Now part of CPA)
LPI	Lightning Protection Institute
MBMA	Metal Building Manufacturers Association
MFMA	Maple Flooring Manufacturers Association, Inc.
MFMA	Metal Framing Manufacturers Association
MH	Material Handling (Now MHIA)
MHIA	Material Handling Industry of America
MIA	Marble Institute of America
MPI	Master Painters Institute
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc.



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NAAMM	National Association of Architectural Metal Manufacturers
NACE	NACE International (National Association of Corrosion Engineers International)
NADCA	National Air Duct Cleaners Association
NAGWS	National Association for Girls and Women in Sport
NAIMA	North American Insulation Manufacturers Association
NBGQA	National Building Granite Quarries Association, Inc.
NCAA	National Collegiate Athletic Association (The)
NCMA	National Concrete Masonry Association
NCPI	National Clay Pipe Institute
NCTA	National Cable & Telecommunications Association
NEBB	National Environmental Balancing Bureau
NECA	National Electrical Contractors Association
NeLMA	Northeastern Lumber Manufacturers' Association
NEMA	National Electrical Manufacturers Association
NETA	InterNational Electrical Testing Association
NFHS	National Federation of State High School Associations
NFPA	NFPA (National Fire Protection Association)
NFRC	National Fenestration Rating Council
NGA	National Glass Association
NHLA	National Hardwood Lumber Association
NLGA	National Lumber Grades Authority
NIS	National Institute of Standards and Technology
NOFMA	NOFMA: The Wood Flooring Manufacturers Association (Formerly: National Oak Flooring Manufacturers Association)



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NRCA	National Roofing Contractors Association
NRMCA	National Ready Mixed Concrete Association
NSF	NSF International (National Sanitation Foundation International)
NSSGA	National Stone, Sand & Gravel Association
NTMA	National Terrazzo & Mosaic Association, Inc. (The)
NTRMA	National Tile Roofing Manufacturers Association (Now TRI)
NWWDA	National Wood Window and Door Association (Now WDMA)
OPL	Omega Point Laboratories, Inc. (Acquired by ITS - Intertek)
PCI	Precast / Pre-stressed Concrete Institute
PDCA	Painting & Decorating Contractors of America
PDI	Plumbing & Drainage Institute
PGI	PVC Geomembrane Institute
PLANET	Professional Landcare Network (Formerly: ACLA - Associated Landscape Contractors of America)
PPS	Power Piping Society
PTI	Post-Tensioning Institute
RCSC	Research Council on Structural Connections
RFCI	Resilient Floor Covering Institute
RIS	Redwood Inspection Service
RMI	Rack Manufacturers Institute
RTI	(Formerly: NTRMA - National Tile Roofing Manufacturers Association) (Now TRI)
SAE	SAE International
SCAQMD	South Coast Air Quality Management District
SCS	Scientific Certification System



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SDI	Steel Deck Institute
SDI	Steel Door Institute
SEFA	Scientific Equipment and Furniture Association
SGCC	Safety Glazing Certification Council
SHBI	Steel Heating Boiler Institute
SIA	Security Industry Association
SIGMA	Sealed Insulating Glass Manufacturers Association (Now IGMA)
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
SMPTE	Society of Motion Picture and Television Engineers
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division)
SPIB	Southern Pine Inspection Bureau (The)
SPRI	Single Ply Roofing Industry
SSINA	Specialty Steel Industry of North America
SSPC	SSPC: The Society for Protective Coatings
STI	Steel Tank Institute
SWI	Steel Window Institute
SWRI	Sealant, Waterproofing, & Restoration Institute
TCA	Tile Council of America, Inc.
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance
TMS	The Masonry Society
TPI	Truss Plate Institute, Inc.



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TPI	Turfgrass Producers International
TRI	Tile Roofing Institute (Formerly: RTI - Roof Tile Institute)
UL	Underwriters Laboratories Inc.
ULC	Underwriters Laboratories of Canada
UNI	Uni-Bell PVC Pipe Association
USAV	USA Volleyball
USC	United States Code
USGBC	U.S. Green Building Council
USITT	United States Institute for Theatre Technology, Inc.
WASTEC	Waste Equipment Technology Association
WCLIB	West Coast Lumber Inspection Bureau
WCMA	Window Covering Manufacturers Association (Now WCSC)
WCSC	Window Covering Safety Council (Formerly: WCMA - Window Covering Manufacturers Association)
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association)
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California)
WIC	Woodwork Institute of California (Now WI)
WMMPA	Wood Moulding & Millwork Producers Association
WRI	Wire Reinforcement Institute, Inc.
USEPA	United States Environmental Protection Agency
WSRCA	Western States Roofing Contractors Association
WWPA	Western Wood Products Association



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PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 42 00



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**SECTION 01 50 00
TEMPORARY FACILITIES, SERVICES AND CONTROLS**

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. This section includes the following:
 - 1. Temporary Water System
 - 2. Temporary Sanitary Facilities
 - 3. Temporary Electric Power, Temporary Lighting System, and Site Security Lighting
 - 4. Temporary Heat
 - 5. Dewatering Facilities and Drains
 - 6. Temporary Field Office for Contractor
 - 7. DDC Field Office
 - 8. Material Sheds
 - 9. Temporary Enclosures
 - 10. Temporary Partitions
 - 11. Temporary Fire Protection
 - 12. Work Fence Enclosure
 - 13. Rodent and Insect Control
 - 14. Plant Pest Control Requirements
 - 15. Project Identification Signage
 - 16. Project Construction Sign and Rendering
 - 17. Security Guards/Fire Guards on Site
 - 18. Safety

1.3 RELATED SECTIONS: include without limitation the following:

- A. Section 01 10 00 SUMMARY
- B. Section 01 42 00 REFERENCES
- C. Section 01 54 11 TEMPORARY ELEVATORS AND HOISTS
- D. Section 01 54 23 TEMPORARY SCAFFOLDS AND SWING STAGING
- E. Section 01 77 00 CLOSE OUT PROCEDURES

1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.



<u>Term</u>	<u>Definition</u>
Design Consultant	The entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the Design Consultant may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.
Permanent Enclosure	As determined by the Commissioner, permanent or temporary roofing that is complete, insulated, and weather tight; exterior walls which are insulated and weather tight; and all openings that are closed with permanent construction or substantial temporary closures.

1.5 SUBMITTALS:

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Reports: Submit reports of tests, inspections, meter readings and similar procedures for temporary use.

1.6 PROJECT CONDITIONS:

- A. Temporary Use of Permanent Facilities and Services: The Contractor will be responsible for the operation, maintenance, and protection of each permanent facility and service during its use as a construction facility before Final Acceptance by the City, regardless of previously assigned responsibilities.
- B. The Contractor must install, operate, maintain and protect temporary facilities, services, and controls, including without limitation:
 - 1. Keep temporary services and facilities clean and neat in appearance;
 - 2. Operate temporary services in a safe and efficient manner;
 - 3. Relocate temporary services and facilities as needed as Work progresses;
 - 4. Do not overload temporary services and facilities or permit them to interfere with progress;
 - 5. Provide necessary fire prevention measures; and
 - 6. Do not allow hazardous, dangerous or unsanitary conditions, or public nuisances to develop or persist on-Site.

1.7 NON-REGULAR WORK HOURS (OVERTIME):

- A. The Contractor must provide the temporary services, facilities and controls set forth in this section during non-regular working hours if the Contract Drawings and/or the Specifications indicate that the Work, or specific components thereof, must be performed during non-regular working hours. In such case, all costs for the provision of temporary services, facilities and controls during non-regular working hours will be deemed included in the total Contract price.
- B. The Contractor must provide the temporary services, facilities and controls set forth in this section during non-regular working hours if a change order is issued directing the Contractor to perform the Work, or specific components thereof, during non-regular working hours. In such case, compensation for the provision of temporary services, facilities and controls during non-regular working hours will be provided



through the change order.

1.8 SERVICES BEYOND COMPLETION DATE:

- A. The Contractor must provide the temporary services, facilities and controls set forth in this section until the date on which it completes all required Work at the Site, including all Final Approved Punch List Work, as certified in writing by the Resident Engineer, or earlier if so directed in writing by the Commissioner. The Contractor must provide such temporary services, facilities and controls even if completion of all required Work at the Site occurs after the time fixed for such completion in Schedule A.

PART II – PRODUCTS

2.1 MATERIALS:

- A. The Contractor must provide undamaged materials in serviceable condition and suitable for use intended.
- B. Tarpaulins: Waterproof, fire-resistant UL labeled with flame spread rating of fifteen (15) or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.
- C. Water: Potable and in compliance with requirements of the New York City Department of Environmental Protection (DEP).

2.2 EQUIPMENT:

- A. The Contractor must provide undamaged equipment in serviceable condition and suitable for use intended.
- B. Water Hoses: Heavy-duty abrasive-resistant flexible rubber hoses, one hundred (100) feet (thirty (30) m) long with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.
- C. Electric Power Cords: Grounded extension cords.
 - 1. Provide hard-service cords where exposed to abrasion or traffic.
 - 2. Provide waterproof connectors to connect separate lengths of electric cords where single lengths do not reach areas of construction Activity.
 - 3. Do not exceed safe length-voltage ratio.
- D. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART III –EXECUTION:

3.1 INSTALLATION, GENERAL:

- A. The Contractor must locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. The Contractor must provide each facility ready for use when needed to avoid delay. The Contractor must not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities as approved by the Resident Engineer.



3.2 TEMPORARY WATER SYSTEM:

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.2 A

- A. **TEMPORARY WATER SYSTEM - NEW FACILITIES:** During construction, the Contractor must furnish a Temporary Water System as set forth below.
1. Immediately after the Commissioner has issued an order to start the Work, the Contractor must file an application with DEP for the schedule of charges for water use during construction. The Contractor will be responsible for payment of water charges.
 2. Immediately after the Commissioner has issued an order to start the Work, the Contractor must file an application with DEP's Bureau of Water Supply and obtain a permit to install the temporary water supply system. The system must be installed and maintained for the use of the Contractor and its subcontractors. A copy of the above-mentioned permit must be filed with the Commissioner. The Contractor must provide temporary water main, risers and waste stacks as directed and install on each floor, outlets with two (2) 3/4" hose valve connections over a barrel installed on a steel pan. The Contractor must provide drains from the pans to the stack and house sewer and hose bibs to drain the water supply risers and mains. During winter months, the Contractor must take the necessary precautions to prevent the temporary water system from freezing. The Contractor must provide repairs to the temporary water supply system for the duration of the Project until said temporary system is dismantled and removed.
 3. Disposition of Temporary Water System: The Contractor will be responsible for dismantling the temporary water system when no longer required for the construction operations, or when replaced by the permanent water system installed for the Project, or as otherwise directed by the Resident Engineer. All repair work resulting from the dismantling of the temporary water system will be the responsibility of the Contractor.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.2 B

- B. **TEMPORARY WATER SYSTEM – PROJECTS IN EXISTING FACILITIES:**
1. When approved by the Commissioner, use of existing water system will be permitted for temporary water service during construction, as long as the system is cleaned and maintained in a condition acceptable to the Commissioner. At Substantial Completion, the Contractor must restore the existing water system to conditions existing before initial use.
 2. The Contractor will be responsible for all repairs to the existing water system permitted to be used for temporary water service during construction. The Contractor will be responsible to maintain the existing system in a clean condition on a daily basis, acceptable to the Commissioner.
 3. The Contractor will be responsible for payment of water charges as directed by the Commissioner. Billing will be in accordance with the New York City Water Board Water and Wastewater Rate Schedule.
- C. **WASH FACILITIES:** The Contractor must install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition, including without limitation:
1. Dispose of drainage properly;
 2. Supply cleaning compounds appropriate for each condition; and
 3. Include safety showers, eyewash fountains and similar facilities for the convenience, safety and sanitation of personnel.
- D. **DRINKING WATER FACILITIES:** The Contractor must provide drinking water fountains or containerized tap-dispenser bottled-drinking water units, complete with paper cup supplies. Where power is available, provide



electric water coolers to maintain dispensed water temperature at forty-five (45) to fifty-five (55) deg. F (7 to 13 deg. C).

3.3 TEMPORARY SANITARY FACILITIES:

- A. The Contractor must provide toilets, wash facilities, and drinking water fixtures in compliance with regulations and health codes for type, number, location, operation and maintenance of fixtures and facilities. Provide toilet tissue, paper towels, paper cups and similar disposable materials as appropriate for each facility, and provide covered waste containers for used materials.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.3 B

- B. SELF-CONTAINED TOILET UNITS:

1. The Contractor must provide temporary single-occupant toilet units of the chemical, aerated recirculation, or combustion type for use by all construction personnel. Units must be properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material. Quantity of toilet units must comply with the latest Occupational Safety and Health Administration (OSHA) regulations.
2. Toilets: The Contractor must install separate, self-contained toilet units for male and female personnel. Shield toilets to ensure privacy.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.3 C

- C. EXISTING TOILETS:

1. TOILET FACILITIES: When approved by the Commissioner, the Contractor must arrange for the use of existing toilet facilities by all personnel during the execution of the Work. The Contractor will be responsible to clean and maintain facilities in a condition acceptable to the Resident Engineer and, at Substantial Completion, to restore facilities to the condition at the time of initial use.
2. MAINTENANCE - The Contractor must maintain the temporary toilet facilities in a clean and sanitary manner and make all necessary repairs.
3. NUISANCES - The Contractor must not cause any sanitary nuisance to be committed by its employees or the employees of its subcontractors in or about the Work and must enforce all sanitary regulations of the City and State Health Authorities.

3.4 TEMPORARY ELECTRIC POWER, TEMPORARY LIGHTING SYSTEM, AND SITE SECURITY LIGHTING:

- A. SCOPE: This section sets forth the General Conditions and procedures relating to Temporary Electric Power, Temporary Lighting System, and Site Security Lighting during the construction period.
- B. TEMPORARY ELECTRIC POWER: The Contractor must provide and maintain a temporary electric power service and distribution system of sufficient size, capacity and power characteristics required for construction operations for all required Work by the Contractor and its subcontractors, including but not limited to, power for the temporary lighting system, site security lighting, construction equipment, hoists, temporary elevators and all field offices. temporary electric power must be provided as follows:

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.4 B (1)

1. CONNECTION TO UTILITY LINES:

- a. Temporary electric power service for use during construction must be provided as follows: The Contractor must make all necessary arrangements with the public utility company and pay all charges for the Temporary Electric Power system. The Contractor must include in its total Contract price any charges for temporary electric power, including charges that may be made



by the public utility company for extending its electrical facilities, and for making final connections. The Contractor will make payment directly to the public utility company.

- b. **APPLICATIONS FOR METER:** The Contractor must complete an application to the public utility company and sign all documents necessary for, and pay all charges incidental to, the installation of a watt hour meter or meters for Temporary Electric Power. The Contractor must pay to the public utility company all bills for temporary electric energy used throughout the Work as they become due.
- c. **SERVICE AND METERING EQUIPMENT:** The Contractor must furnish and install, at a suitable location on the Site, approved service and metering equipment for the Temporary Electric Power System, ready for the installation of the public utility company's metering devices. The temporary service mains to and from the metering location must not be less than one hundred (100) Amperes, 3-phase, 4-wire and must be of sufficient capacity to take care of all demands for all construction operations and must meet all requirements of the New York City Electrical Code.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.4 B (2)

- 2. **CONNECTION TO EXISTING ELECTRICAL POWER SERVICE:**
 - a. When approved by the Commissioner, electrical power service for the temporary lighting system and for the operation of small tools and equipment less than ¼ horsepower may be taken from the existing electric distribution system if the existing system is of adequate capacity for the temporary power load. The Contractor must cooperate and coordinate with the facility custodian, so as not to interfere with the normal operation of the facility.
 - b. There will be no charge to the Contractor for the electrical energy consumed.
 - c. The Contractor must provide, maintain and pay all costs for separate temporary electric power for any temporary power for equipment larger than 1/4 horsepower. When directed by the Commissioner, the Contractor must remove its own temporary power system.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.4 B (3)

- 3. **ELECTRICAL GENERATOR POWER SERVICE:**
 - a. When connection to utility lines or existing facility electric service is not available or is not adequate to supply the electric power need for construction operations, the Contractor must provide self-contained generators to provide power beyond that available.
 - b. Pay for all energy consumed in the progress of the Work, exclusive of that available from the existing facility or utility company.
 - c. Provide for control of noise from the generators.
 - d. Comply with the Ultra Low Sulfur Fuel in Non-Road Vehicles requirements as set forth in Article 5.4 of the Contract.
- C. **USE OF COMPLETED PORTIONS OF THE ELECTRICAL WORK:**
 - 1. **USE OF MAIN DISTRIBUTION PANEL:** As soon as the permanent electric service feeders and equipment metering equipment and main distribution panel are installed and ready for operation, the Contractor must have the temporary lighting and power system changed over from the temporary service points to the main distribution panel.
 - 2. **COST OF CHANGE OVER:** The Contractor will be responsible for all costs due to this change over of service and it must also make application to the public utility company for a watt hour meter to be set on the permanent meter equipment.



3. The requirements for temporary electric power service specified herein must be adhered to after change over of service until Final Acceptance of the Project.
4. **NO EXTRA COST:** The operation of the service and switchboard equipment will be under the supervision of the Contractor, but this will in no way be interpreted to mean the acceptance of such part of the installation or relieve the Contractor from its responsibility for the complete Work or any part thereof. There will be no additional charge for supervision by the Contractor.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.4 D

D. TEMPORARY LIGHTING SYSTEM:

1. The Contractor must provide adequate service for the temporary lighting system, or a minimum of one hundred (100) Amperes, 3-phase, 4-wire service for the temporary lighting system, whichever is greater, and make all necessary arrangements with the public utility company and pay all charges by them for the Temporary Lighting System.
2. The Contractor must furnish and connect to the metered service point a Temporary Lighting System to illuminate the entire area where Work is being performed and points adjacent to the Work, with separately fused circuits for stairways and bridges. Control switches for stairway circuits must be located near entrance on ground floor.
3. **ITEMS:** The Temporary Lighting System provided by the Contractor must consist of wiring, fixtures, left-hand double sockets (one (1) double socket for every 400 square feet, with one (1) lamp and one (1) three-prong outlet), lamps, fuses, locked-type guards, pigtails and any other incidental material. Additional details may be outlined in the detailed Specifications for the electrical Work. Changes may be made, provided the full equivalent of those requirements is maintained.
4. The Temporary Lighting System will be progressively installed as required for the advancement of the Work under the Contract.
5. **RELOCATION:** The cost for the relocation or extension of the original Temporary Lighting System, as required by the Contractor or its subcontractors, that is not required due to the normal advancement of the Work, as determined by the Resident Engineer, will be borne by the Contractor.
6. **PIGTAILS:** The Contractor must furnish pigtails with left-hand sockets with locked-type guards and forty (40) feet of rubber covered cable. The Contractor must furnish and distribute a minimum of three (3) complete pigtails to each subcontractor. See the detailed Electrical Specifications for possible additional pigtails required.
7. **LAMPS:** The Contractor must furnish and install one (1) complete set of lamps, including those for the trailers. Broken and burned out lamps in the temporary lighting system, DDC field office, and construction trailers must be replaced by the Contractor. All lamps must be compact fluorescent.
8. **CIRCUIT PROTECTION:** The Contractor must furnish and install Ground Fault Interruption (GFI) protection for the temporary lighting and site security lighting systems.
9. **MAINTENANCE OF TEMPORARY LIGHTING SYSTEM:**
 - a. The Contractor must maintain the Temporary Lighting System in good working order during the scheduled hours established.
 - b. The Contractor must include in its total Contract price all costs in connection with the Temporary Lighting System, including all costs for installation, maintenance and electric power.
10. **REMOVAL OF TEMPORARY LIGHTING SYSTEM:** The temporary lighting system must be removed by the Contractor when authorized by the Commissioner.



11. **HAND TOOLS:** The temporary lighting system must not be used for power purposes, except that light hand tools not larger than 1/4 horsepower may be operated from such system by the Contractor and its subcontractors.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.4 E

E. SITE SECURITY LIGHTING (NEW CONSTRUCTION ONLY):

1. The Contractor must furnish, install and maintain a system of site security lighting, as herein specified, to illuminate the construction Site of the Project, with the system connected to and energized from the Temporary Lighting System. All costs in connection with site security lighting will be deemed included in the total Contract price.
2. It is essential that the site security lighting system be completely installed and operating at the earliest possible date. The Contractor must direct its subcontractors to cooperate, coordinate and exert every effort to accomplish an early complete installation of the site security lighting system. If, after the system is installed and in operation, a part of the system interferes with the Work of any trade, the Contractor will be completely responsible for the expense of removing, relocating, and replacing all equipment necessary to reinstate the system to proper operating conditions.
3. The system must consist of flood lighting by pole-mounted guarded sealed-beam units. Floodlight units must be mounted sixteen (16) feet above grade. Floodlights must be spaced around the perimeter of the Site to produce an illumination level of no less than one (1) foot candle around the perimeter of the Site, as well as in any potentially hazardous area or any other area within the Site that might be deemed by the Resident Engineer to require security illumination. The system must be installed in a manner acceptable to the Resident Engineer. The first lighting unit in each circuit must be provided with a photoelectric cell for automatic control. The photoelectric cell must be installed as per manufacturer's recommendations.
4. All necessary poles must be furnished and installed by the Contractor.
5. The site security lighting must be kept illuminated at all times during the hours of darkness. The Contractor must, at its own expense, keep the system in operation and must furnish and install all material necessary to replace all damaged or burned out parts.
6. The Contractor must be on telephone call alert for maintaining the system during the operating period stated above.
7. All materials and equipment furnished under this section will remain the property of the Contractor and must be removed and disposed of by the Contractor when authorized in writing by the Resident Engineer.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.5

3.5 TEMPORARY HEAT:

A. GENERAL:

1. **Definition:** The provision of Temporary Heat means the provision of heat in order to permit construction to be performed in accordance with the Progress Schedule during all seasons of the year and to protect the Work from the harmful effects of low temperature. In the event the building, or any portion thereof, is occupied during construction, the provision of Temporary Heat will include the provision of heat to permit normal operations in such occupied areas.
 - a. The provision of Temporary Heat must be in accordance with the temperature requirements set forth in sub-section 3.5 C herein.
 - b. The provision of Temporary Heat must include the provision of: 1) all fuel necessary and required, 2) all equipment necessary and required, and 3) all operating labor necessary and required.



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required. Operating labor must mean that minimum force required for the safe day-to-day operation of the system for the provision of Temporary Heat and must include, without limitation, heating maintenance labor and/or fire watch as required by New York City Fire Department (FDNY) regulations. Operating labor may be required seven (7) days per week and during non-regular working hours, for the period of time required by seasonal weather conditions.

- c. In the event the building, or any portion thereof, is occupied and the Project involves the replacement, modification, and/or shut down of the permanent heating system, or any key component thereof, and such system is a combined system which furnishes domestic hot water for the building occupants, the provision of Temporary Heat must include the provision of domestic hot water at the same temperature as the system which is being replaced. Domestic hot water must be provided in accordance with the phasing requirements set forth in the Contract Documents.
2. Responsibility: The Contractor's responsibility for the provision of Temporary Heat, including all expenses in connection therewith, is as set forth below:
 - a. Projects Involving enclosure of the building:
 - 1) Prior to Enclosure: Until the Commissioner determines that the building has been enclosed, as set forth in sub-section 3.5 B, the Contractor is responsible for the provision of Temporary Heat.
 - 2) Post Enclosure: Once the Commissioner determines that the building, or any portion thereof, has been enclosed, as set forth in sub-section 3.5 B, the Contractor is responsible for the provision of Temporary Heat by one or more of the following means: 1) by an existing heating system (if any), 2) by a permanent heating system which is being installed as part of the Project, or 3) by a temporary heating system(s).
 - 3) The Contractor must, within two (2) weeks of the kick-off meeting, submit to DDC for review its proposed plan to provide Temporary Heat. Such plan is subject to approval by the Resident Engineer. The Contractor must provide Temporary Heat in accordance with the approved plan until written acceptance by the Commissioner of the Work of all Contractors, including punch list Work, unless directed otherwise in writing by the Commissioner. The responsibility of the Contractor provided for herein is subject to the exception set forth in sub-section 3.5 A.2 (b) herein.
 - b. Projects not involving enclosure of the building:
 - 1) If the Project involves the installation of a new permanent heating system if one did not exist previously, or the replacement, modification, and/or shut down of the existing permanent heating system, or any key component thereof, the Contractor will be responsible for the provision of Temporary Heat, except as otherwise provided in sub-section 3.5 H.3(b).2 herein.
 - 2) If the Project does not involve the installation of a new permanent heating system if one did not exist previously, or the replacement, modification, and/or shut down of the existing permanent heating system, or any key component thereof, there is no Contractor responsibility of the provision of Temporary Heat, unless otherwise specified in the Contract Documents. However, if the Commissioner, pursuant to sub-section 3.5 H.3 (b).1 herein, determines that the provision of Temporary Heat is necessary due to special and/or unforeseen circumstances, the Contractor will be responsible for the provision of Temporary Heat and must be paid for the same in accordance with sub-section 3.5 H.3 (b).1 herein.



B. ENCLOSURE OF STRUCTURES:

1. Notification: The Contractor must notify all its subcontractors and the Resident Engineer at least thirty (30) Days prior to the anticipated date that the building(s) will be enclosed.
2. Commissioner Determination: The Commissioner will determine whether the building, or any portion thereof, has been enclosed. As indicated in sub-section 3.5 A.2 above, once the building has been enclosed, the Contractor will be responsible for the provision of Temporary Heat. The Commissioner's determination with respect to building enclosure will be based upon all relevant facts and circumstances, including without limitation, 1) whether the building meets the criteria set forth in Paragraph 3 below, and 2) whether the openings in the building, such as doorways and windows, have been sufficiently covered so as to provide reasonable heat retention and protection from the elements.
3. Criteria for enclosure:
 - a. Roof Area:
 - 1) A building will be considered to be roofed when the area to be roofed is covered by a permanent structure and all openings through the permanent structure are covered and protected by temporary covers as described in Paragraph (c) below.
 - 2) Intermediate floor structures of multi-floor buildings will be considered to be roofed subject to the same requirements of the building roof.
 - 3) The final roofing system need not be in place for the building or structure to be determined to be enclosed, provided, however, all openings through the permanent structure covering the roof must be covered and protected by temporary covers, as described in Paragraph (c) below.
 - b. Walls: For the walls to be determined to be enclosed, permanent exterior wall elements or facing material must be in place and all openings must be covered and protected by temporary covers, as described in Paragraph (c) below.
 - c. Temporary Covers: In order to be acceptable, temporary covers must be securely fixed to prevent the entrance of rain, snow and direct wind. The minimum material requirements for temporary covers are as follows: 1) minimum ten (10) millimeter plastic, 2) minimum twelve (12) ounce waterproof canvas tarpaulins, or 3) a minimum three-eighths (3/8) inch thickness exterior grade plywood.
 - d. Temporary covers for openings will be the responsibility of the Contractor and such Work will be deemed included in the Contract price.

C. TEMPERATURE REQUIREMENTS:

1. Unoccupied Buildings: The temperature requirement for the provision of Temporary Heat in unoccupied buildings will be the GREATER of the following: 1) fifty (50) degrees Fahrenheit, or 2) the temperature requirement for the particular type of Work set forth in the Contract Documents.
2. Occupied Buildings: The temperature requirement for the provision of Temporary Heat in occupied buildings, or portions thereof, will be the GREATER of the following: 1) sixty-eight (68) degrees Fahrenheit, or 2) the temperature requirement for the particular type of Work set forth in the Contract Documents.

D. DURATION:

1. The Contractor must be required to provide Temporary Heat until Final Acceptance, including all punch list work, as certified in writing by the Resident Engineer, or earlier if so directed in writing by the Commissioner. The Contractor must be responsible for the provision of Temporary Heat for the time specified herein, regardless of any delays in completion of the Project, including delays that



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result in the commencement of the provision of Temporary Heat during a season that is later than that which may have been originally anticipated. The Contractor must include in its total Contract price all expenses in connection with the provision of Temporary Heat in accordance with the requirements specified herein.

2. The total Contract duration is set forth in Schedule A of the Addendum. The table set forth below indicates the number of full heating seasons that are deemed included in various Contract durations, which are specified in CCDs. At a minimum, a full heating season must extend from October 15th to April 15th.

<u>Contract Duration</u>	<u>Full Heating Seasons Required</u>
up to 360 CCD	1 full heating season
360 to 720 CCD	2 full heating seasons
more than 720 CCD	3 full heating seasons

E. METHOD OF TEMPORARY HEAT:

1. The method of temporary heat must be in conformance with the New York City Fire Code and with all applicable laws, rules, and regulations. Prior to implementation, such method must be subject to the written approval of the Commissioner.
2. The method of temporary heat must:
 - a. Not cause the deposition of dirt or smudges upon any finished Work or cause any defacement or discoloration to the finished Work.
 - b. Not be injurious or harmful to people or materials.
 - c. Portable fueled heating devices or equipment will NOT be allowed for use as temporary heat other than construction-related curing or drying in conformance with the NYC Fire Code.
3. No open fires will be permitted.

F. TEMPORARY HEATING SYSTEM:

1. The temporary system for the provision of Temporary Heat provided by the Contractor following enclosure of the building must be complete, including, subject to provisions of paragraph E above, boilers pumps, radiators, space heaters, water and heating piping, insulation and controls. The temporary system for the provision of Temporary Heat must be capable of maintaining the minimum temperature requirements set forth in Paragraph C above.

G. COORDINATION:

1. The Contractor, in the provision of Temporary Heat, must coordinate its operations in order to insure sufficient and timely performance of all required Work, including Work performed by trade subcontractors. The Contractor must supply and pay for all water required and used in the building for the operation of the heating system(s) for the purpose of Temporary Heat. The Contractor must include all expenses in connection with the supply of water for Temporary Heat in its total Contract price. During the period in which Temporary Heat in an enclosed building is being furnished and maintained, the Contractor must provide proper ventilating and drying, open and close the windows and other openings when necessary for the proper execution of the Work and when directed by DDC. The Contractor must maintain all permanent or temporary enclosures at its own expense.

H. USE OF PERMANENT HEATING SYSTEMS:

1. Use of Permanent Heating System for Temporary Heat after Building Enclosure:



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- a. The Contractor must provide all labor and materials to promptly furnish and set all required equipment, convectors and/or radiators, piping, valves, fitting, etc., in ample time for their use for the provision of Temporary Heat after enclosure of the building.
 - b. New portions of the permanent heating system that are used for furnishing Temporary Heat must be left in near-perfect condition when delivered to the City for operation. Any repairs required, other than for ordinary wear and tear on the equipment, must be made by the Contractor at his/her expense. The starting date for the warranty or guarantee period for such equipment must be the date of Substantial Completion acceptance.
 - c. In the event that the Contractor does not advance the installation of the permanent heating system in sufficient time to permit its use for Temporary Heat as determined by DDC, the Contractor must furnish and install a separate system for the provision of Temporary Heat as required to maintain the minimum temperature requirements set forth in Paragraph C above.
2. All equipment for the system for the provision of Temporary Heat must be placed so as to comply with the requirements specified hereinbefore, and must be connected, disconnected and suitably supported and located so as to permit construction Work, including finish Work such as wall plastering and painting, to proceed. The installation of the system for the provision of Temporary Heat by the Contractor, including the placing of ancillary system equipment, must be coordinated with the operations of all trade subcontractors so as to insure sufficient and timely performance of the Work. Once the permanent heating system is operating properly, the Contractor must remove all portions of the system for Temporary Heat not part of the permanent heating system.
3. Temporary Heat Allowance for Special Conditions or and/or Unforeseen Circumstances:
 - a. The City may establish an Allowance in the Contract for payment of costs and expenses in connection with the provision of Temporary Heat as set forth herein. If established, the City will include an amount for such Allowance on the Bid Form, and the Contractor must include such Allowance amount in its total Contract price. The Contractor will only be entitled to payment from this Allowance under the conditions and in accordance with the requirements set forth below. In the event this Allowance or any portion thereof remains unexpended at the conclusion of the Contract, such Allowance must remain the sole property of the City. Should the amount of the Allowance be insufficient to provide payment for the expenses specified below, the City will increase the amount of the Allowance.
 - b. The Allowance set forth herein may be utilized only under the conditions set forth below.
 1. In the event the Project does not involve the installation of a new permanent heating system if one did not exist previously, or the replacement, modification, and/or shut down of the existing permanent heating system, or any key component thereof, and the Commissioner determines that the provision of Temporary Heat is necessary due to special and/or unforeseen circumstances, the Contractor must be responsible for the provision of Temporary Heat, as directed by the Commissioner. The City must pay such Contractor for all costs for labor, material, and equipment necessary and required for the same. Payment must be made in accordance with Article 26 of the Contract, except that the cost of fuel must be as set forth in Paragraph (c) below.
 2. In the event the Commissioner determines that there is a need for maintenance of the permanent heating system by the Contractor after Final Acceptance by the Commissioner of the Work, and that the need for such maintenance is not the fault of the Contractor, the Contractor must provide the required maintenance of the permanent heating system for the period of time directed by the Commissioner. The City will pay the Contractor for the cost of direct labor and fuel necessary and required in connection with such maintenance, excluding the cost of any foremen or other supervision. Payment must be made in accordance with Article 26 of the Contract, except that the cost of fuel must be as set forth in Paragraph (c) below.



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- c. Payment for Fuel Costs: Payment from the Allowance set forth herein for the cost of fuel necessary and required to operate the system for the provision of Temporary Heat, or to maintain the permanent heating system under the conditions set forth in Paragraph b above, must be limited to the direct cost of such fuel. The Contractor will not be entitled to any overhead and/or profit for such fuel costs. In order to receive payment for such fuel costs, the Contractor must present original invoices for the same. DDC reserves the right to furnish the required fuel.

I. RELATED ELECTRICAL WORK:

1. The Contractor must be responsible for providing the items set forth below and must include all expenses in connection with such items in its total Contract price. The Contractor must provide such items promptly when required and must in all respects coordinate its Work with the Work performed by trade subcontractors in order to facilitate the provision of Temporary Heat.
 - a. The Contractor must provide all labor, materials, equipment and power necessary and required to furnish and maintain any temporary or permanent electrical connections to all equipment specified to be connected as part of the work of the Contractor's Contract.
 - b. The Contractor must supply and pay for all power necessary and required for the operation of the system for the provision of Temporary Heat and/or the permanent heating system used for Temporary Heat. Such power must be provided by the Contractor for the duration the Contractor is required to provide Temporary Heat, as set forth in sub-section 3.5 D herein.
2. In providing the items set forth in Paragraph 1 above, the Contractor is advised that labor may be required seven (7) days a week and/or during non-regular working hours for the period of time required by seasonal weather conditions.

J. RELATED PLUMBING WORK:

1. The Contractor must be responsible for providing all labor, materials, and equipment necessary and required to furnish and maintain all temporary or permanent connections to all equipment or plumbing outlets specified to be provided as part of the Work of this Contract. The Contractor must include all expenses in connection with such items of Work in its total Contract price. The Contractor must provide such items of Work promptly when required and must in all respects coordinate its Work with the Work performed by trade subcontractors in order to facilitate the provision of Temporary Heat.
2. In the event portions of the permanent plumbing equipment furnished by the Contractor as part of the Work of this Contract are used for the provision of Temporary Heat either during construction or prior to acceptance by the City of the complete plumbing system, the Contractor will be responsible to provide such plumbing equipment to the City in near-perfect condition and must make any repairs required, other than for ordinary wear and tear on the equipment, at the Contractor's expense. The starting date for warranty and/or guarantee period for such plumbing equipment must be the date of Substantial Completion by the City.
3. For Projects requiring the installation of new and/or modified gas service, as well as associated meter installations, the Contractor must promptly perform all required filings and coordination with the utility companies in order to expedite the installation, testing, and approval of the gas service and associated meter(s).

3.6 STORM WATER CONTROL, DEWATERING FACILITIES AND DRAINS:

A. PUMPING:

1. Comply with requirements of authorities having jurisdiction. Maintain Project Site, excavations, and construction free of water. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of storm water from heavy rainfall.



2. Contractor must furnish and install all necessary automatically operated pumps of adequate capacity with all required piping to run-off agencies, so as to maintain the excavation, cellar floor, pits and exterior depressions and excavations free from accumulated water during the entire period of construction and up to the date of Final Acceptance of Work of the Contract.
3. All pumps must be maintained at all times in proper working order.
4. Dispose of rainwater in a lawful manner that will not result in flooding the Project or adjoining properties nor endanger permanent Work or temporary facilities.
5. Remove snow and ice as required to minimize accumulations.

3.7 TEMPORARY FIELD OFFICE FOR CONTRACTOR:

- A. The Contractor must establish a temporary field office for its own use at the Site during the period of construction, at which readily available copies of all Contract Documents must be kept.
- B. The field office must be located where it will not interfere with the progress of any part of the Work or with visibility of traffic control devices.
- C. CONTRACTOR'S REPRESENTATIVE: There must be a responsible and competent representative of the Contractor in charge of the office who is duly authorized to receive orders and directions and to put them into effect.
- D. Arrangements must be made by the Contractor whereby its representative may be readily available by telephone.
- E. All temporary structures must be of substantial construction and neat appearance, and must be painted a uniform gray unless otherwise directed by the Commissioner.
- F. CONTRACTOR'S SIGN: The Contractor must post and keep posted on the outside of its field office, office, exterior fence, or wall at Site of Work, a legible sign giving the full name of the company, address of the company and telephone number(s) of responsible representative(s) of the firm who can be reached in the event of an emergency at any time.
- G. ADVERTISING PRIVILEGES: The City reserves the right to all advertising privileges. The Contractor must not cause any signs of any kind to be displayed at the Site unless specifically required herein or authorized by the Commissioner.

3.8 DDC FIELD OFFICE:

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.8 A

- A. OFFICE SPACE IN EXISTING BUILDING:
 1. The Resident Engineer will arrange for office space for sole use in the building where Work is in progress. The Contractor must provide and install a lockset for the door to secure the equipment in the room. The Contractor must provide two (2) keys to the Resident Engineer. After completion of the Project the Contractor must replace the original lockset on the door and ensure its proper operation.
 2. In addition to equipment specified in sub-section 3.8 D, the Contractor must provide, for exclusive use of the DDC Field Office, the following:
 - a. Two (2) single pedestal desks, 42" x 32"; two (2) swivel chairs with arms and three (3) side chairs without arms to match desk. Two metal (2) lockers, single units, 15" x 18" x 78" overall including 6" legs. Lockers to have flat key locks with two (2) keys each, General Steel products or approved equal. Two (2) full ball bearing suspension four (4) drawer vertical legal filing cabinets with locks, approximately 52"H x 28 ½"D x 18"W.



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- b. One (1) 9000 B.T.U air conditioner or as directed by Commissioner. Wiring for the air conditioner must be minimum No. 12 AWG fed from individual circuits in the fuse box.
 - c. One (1) folding conference table, 96" x 30" and ten (10) folding chairs.
 - d. Two (2) metal wastebaskets.
 - e. One (1) fire extinguisher, one (1) quart vaporizing liquid type, brass, wall mounted by Pyrene No. C21 or approved equal.
 - f. One (1) Crystal Springs water cooler with bottled water, Model No. LP14058 or approved equal to be furnished for the duration of the Project as required.
3. The Contractor must provide one (1) telephone, where directed and must pay all costs for telephone service for calls within the New York City limits for the duration of the Project.
 4. All furniture and equipment, except computer equipment specified in sub-section 3.8 D.3, must remain the property of the Contractor.
 5. Computer workstation quantities must be provided as specified in sub-section 3.8 B 3-a for DDC Managed Projects, or sub-section 3.8 B 3-b for CM Managed Projects.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.8 B

B. DDC FIELD OFFICE TRAILER:

1. **GENERAL:** The Contractor must, for the time frame specified herein, provide and maintain at its own cost and expense a DDC Construction Field Office and all related items as specified herein [hereinafter collectively referred to as the "DDC Field Office"] for the exclusive use of the Resident Engineer. The DDC Field Office must be located at the Project Site and must be solely dedicated to the Project. Provision of the DDC Field Office must commence within thirty (30) Days from Notice to Proceed (NTP) and must continue through forty-five (45) Days after Substantial Completion of the required construction at the Project Site. The Contractor must remove the DDC Field Office forty-five (45) Days after Substantial Completion of the required construction, or as otherwise directed in writing by the Commissioner.
2. **TRAILER:** The Contractor must provide at its own cost and expense a mobile office trailer for use as the DDC Field Office. The Contractor must install and connect all utility services to the trailer within thirty (30) Days from NTP. The trailer must have equipment in compliance with the minimum requirements hereinafter specified. Any permits and fees required for the installation and use of said trailer must be borne by the Contractor. The trailer including furniture and equipment therein, except computer equipment specified in sub-section 3.8D.3 herein, must remain the property of the Contractor.
3. Trailer must be an office-type trailer of the size specified herein, with exterior stairs at entrance. Trailer construction must be minimum 2 x 4 wall construction fully insulated with paneled interior walls, pre-finished gypsum board ceilings and vinyl tile floors.



**REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.8.B.3a or
SUB-SECTION 3.8.B.3b.**

- a. DDC Managed Project Trailer: DDC Field Office Trailer Size, Layout and Computer Workstation:
 - 1) Overall length: 32 Feet
Overall width: 10 Feet
 - 2) Interior Layout:
Provide one (1) general office/conference room area and one (1) private office at one end of the trailer. Provide equipment and amenities as specified in sub-section 3.8.B herein.
 - 3) Computer Workstation: Provide one (1) complete computer workstation, as specified in sub-section 3.8.D herein, in the private office area as directed by the Resident Engineer.
- b. CM Managed Project Trailer: DDC Field Office Trailer Size, Layout and Computer Workstation:
 - 1) Overall length: 50 Feet
Overall width: 10 Feet
 - 2) Interior Layout:
Provide one (1) large general office/conference room in the center of the trailer and two (2) private offices, one (1) each at either end of the trailer. Provide equipment and amenities as specified in sub-section 3.8.B herein.
 - 3) Computer Workstation:
Provide three (3) complete computer workstations as specified in sub-section 3.8.D herein. Provide one (1) each complete computer workstation in each private office and one (1) complete computer workstation at the secretarial position as directed by the Resident Engineer.
4. The exterior of the trailer must be lettered with black block lettering of the following heights with white borders:

CITY OF NEW YORK	2-1/2"
DEPARTMENT OF DESIGN AND CONSTRUCTION	3-3/4"
DIVISION OF PUBLIC BUILDINGS	3-1/2"
DDC FIELD OFFICE	2-1/2"

NOTE: In lieu of painting letters on the trailer, the Contractor may substitute a sign constructed of a good quality weatherproof material with the same type and size of lettering above.
5. All windows and doors must have aluminum insect screens. Provide wire mesh protective guards at all windows.
6. The interior must be divided by partitions into general and private office areas as specified herein. Provide a washroom located adjacent to the private office and a built-in wardrobe closet opposite the washroom. Provide a built-in desk in the private office(s) with fixed overhead shelf and clearance below for two (2) file cabinets.
7. Provide a built-in drafting or reference table, located in the general office/conference room, at least sixty (60) inches long by thirty-six (36) inches wide with cabinet below and wall type plan rack at least forty-two (42) inches wide.
8. The washroom must be equipped with a flush toilet, wash basin with two (2) faucets, medicine cabinet, complete with supplies and a toilet roll tissue holder. Plumbing and fixtures must be



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approved house type, with each appliance trapped and vented and a single discharge connection. Five (5) gallon capacity automatic electric heater for domestic hot water must be furnished.

9. HVAC: The trailer must be equipped with central heating and cooling adequate to maintain a temperature of seventy-two (72) degrees during the heating season and seventy-five (75) degrees during the cooling season when the outside temperature is five (5) degrees F. winter and eighty-nine (89) degrees F. summer.
10. Lighting must be provided via ceiling mounted fluorescent lighting fixtures to a minimum level of fifty (50) foot candles in the open and private office(s) along with sufficient lighting in the washroom. Broken and burned out lamps must be replaced by the Contractor. A minimum of four (4) duplex convenience outlets must be provided in the open office and two (2) each in the private office(s). These outlets must be in addition to special outlet requirements for computer stations, copiers, HVAC unit, etc.
11. Electrical service switch and panel must be adequately sized for the entire trailer load. Provide dedicated circuits for HVAC units, hot water heater, copiers and other equipment as required. All wiring and installation must conform to the New York City Electrical Code.
12. The following movable equipment must be furnished:
 - a. Two (2) single pedestal desks, 42" x 32"; two (2) swivel chairs with arms and three (3) side chairs without arms to match desk. Two (2) full ball bearing suspension four (4) drawer vertical legal filing cabinets with locks and two (2) full ball bearing two (2) drawer vertical legal filing cabinets in each private office located below built-in desk.
 - b. One (1) folding conference table, 96" x 30" and ten (10) folding chairs.
 - c. Three (3) metal wastebaskets.
 - d. One (1) fire extinguisher one (1) quart vaporizing liquid type, brass, wall mounted by Pyrene No. C21 or approved equal.
 - e. One (1) Crystal Springs water cooler with bottled water, Model No. LP14058 or approved equal to be furnished for the duration of the Contract as required.
13. TRAILER TEMPORARY SERVICE: Plumbing and electrical Work required for the trailer will be furnished and maintained as below.
 - a. PLUMBING WORK: The Contractor must provide temporary water and drainage service connections to the DDC Field Office trailer for a complete installation. Provide all necessary soil, waste, vent and drainage piping.

Contractor to frost-proof all water pipes to prevent freezing.

 - 1) REPAIRS, MAINTENANCE: The Contractor must provide repairs for the duration of the Project until the trailer is removed from the Site.
 - 2) DISPOSITION OF PLUMBING WORK: At the expiration of the time limit set forth in subsection 3.8 B 1 herein, the temporary water and drainage connections and piping to the DDC Field Office trailer must be removed by the Contractor and must be plugged at the mains. All piping must become the property of the Contractor for plumbing Work and must be removed from the Site, all as directed. All repair Work due to these removals must be the responsibility of the Contractor.
 - b. ELECTRICAL WORK:
 - 1) The Contractor must furnish, install and maintain a temporary electric feeder to the DDC Field Office trailer immediately after it is placed at the job Site.
 - 2) The temporary electrical feeder and service switch/fuse must be adequately sized



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based on the trailer load and installed per the New York City Electrical Code and complying with utility requirements.

- 3) Make all arrangements and pay all costs to provide electric service.
- 4) The Contractor must pay all costs for current consumed and for maintenance of the system in operating condition, including the furnishing of the necessary bulb replacements lamps, etc., for the duration of the Project and for a period of forty-five (45) Days after the date of Substantial Completion.
- 5) Disposition of Electric Work: At the expiration of the time limit set forth, the temporary feeder, safety switch, etc., must be removed and disposed of as directed.
- 6) All repair Work due to these removals must be the responsibility of the Contractor.

c. **MAINTENANCE**

- 1) The Contractor must provide and pay all costs for regular weekly janitor service and furnish toilet paper, sanitary seat covers, cloth towels and soap and maintain the DDC Field Office in first-class condition, including all repairs, until the trailer is removed from the Site.
- 2) Supplies: The Contractor must be responsible for providing (1) all office supplies, including without limitation, pens, pencils, stationery, filtered drinking water and sanitary supplies, and (2) all supplies in connection with required computers and printers, including without limitation, an adequate supply of blank CD's/DVD's, storage boxes for blank CDs/DVDs, and paper and toner cartridges for the printer.
- 3) Risk of Loss: The entire risk of loss with respect to the DDC Field Office and equipment must remain solely and completely with the Contractor. The Contractor must be responsible for the cost of any insurance coverage determined by the Contractor to be necessary for the field office.
- 4) At forty-five (45) Days after the date of Substantial Completion, or sooner as directed by the Commissioner, the Contractors must have all services disconnected and capped to the satisfaction of the Commissioner. All repair Work due to these removals must be the responsibility of the Contractor.

d. **TELEPHONE SERVICE:** The Contractor must provide and pay all costs for the following telephone services for the DDC Field Office trailer:

- 1) Separate telephone lines for one (1) desk phone in each private office.
- 2) One (1) wall phone (with six (6) foot extension cord) at plan table.
- 3) Separate telephone lines for the fax machine and internet access in each private office. Telephone service must include voice mail. All electronic voicemail messages must be automatically forwarded as email attachments, to allow for the voicemails to be played remotely.
- 4) A remote bell located on outside of trailer
- 5) The telephone service must continue until the trailer is removed from the Site.

e. **PERMITS:** The Contractor must make the necessary arrangements and obtain all permits and pay all fees required for this Work.

- C. **RENTED SPACE:** The Contractor has the option of providing, at its cost and expense, rented office or store space in lieu of trailer. Said space must be in the immediate area of the Project and have adequate plumbing, heating and electrical facilities. Space chosen by the Contractor for the DDC Field Office must be approved by the Commissioner before the area is rented. All insurance, maintenance and equipment,



including computer workstations specified in sub-section 3.8 D in quantities required as specified in sub-section 3.8 B 3 for the DDC Field Office trailer, must also apply to rented spaces.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.8 D

D. ADDITIONAL EQUIPMENT FOR THE DDC FIELD OFFICE:

1. Photocopying Machine: Stand-alone, heavy duty, electric, dry-process color photocopying type with color scan and send capability via email, a minimum production rate of seventy (70) pages per minute and an adequate supply of copy paper, toner, etc. The machine must be capable of duplex copying paper sizes of 8-1/2 x 11 inches, 8-1/2 x 14 inches and 11 x 17 inches, and have separate trays for each paper size. It must have a document feeder, collator, stapler, and the capability to reduce/enlarge copies between each paper size. The supply of each size copy paper, toner, etc. must be replenished and the machines must be maintained for the duration of the Contract by the Contractor as required by the Resident Engineer. Make and model can be Minolta, Canon, IBM, Epson, or an approved equivalent, and must be networked to the office computers for printing capability. Copier must remain at job Site until the DDC Field office trailer is removed from the Site.
2. The Contractor must furnish a fax machine and a telephone answering machine at commencement of the Project for the exclusive use of the DDC Field Office. All materials must be new, sealed in manufacturer's original packaging and must have manufacturers' warranties. All items must remain the property of the City of New York at the completion of the Project.
3. COMPUTER WORKSTATION: The Contractor must provide one (1) complete computer workstation, in quantities specified in sub-section 3.8.B.3, as specified herein:
 - a. Hardware/Software Specification:
 - 1) Computer Equipment: Computers must be provided for all Contracts that have a total Consecutive Calendar Days (CCD) for construction duration, as set forth in Schedule "A", of 180 CCD's or greater. Contracts of lesser duration must not require computers.
 - 2) Computers furnished by the Contractor for use by City Personnel for the duration of the Contract must be in accordance with the Specific Requirements contained herein, must remain the property of the City of New York at the completion of the Project, and must meet the following minimum requirements:
 - 3) Personal Computer(s) – Each Workstation Configuration.
 - a) Make and Model: Dell; HP; Gateway; Acer; or, an approved equivalent. (Note: an approved equivalent requires written approval of the DDC Assistant Commissioner of Information Technology Services (ITS)).
 - b) Processor: i5-2400 (6MB Cache, 3.1GHz) or faster computer - Single Processor.
 - c) System RAM: Minimum of 4GB (Gigabytes) Dual Channel DDR3 SDRAM at 1333MHz – 2 DIMMSs.
 - d) Hard Disk Drive(s): 500 GB (Gigabytes) Serial ATA (7200RPM) w/DataBurst Cache, or larger.
 - e) CD-RW: Internal CD-RW, 48x Speed or faster.
 - f) 16xDVD+/-RW: DVD Burner (with double layer write capability) 16x Speed or faster.



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- g) I/O Ports: Must have at least one (1) Serial Port, one (1) Parallel Port, and three (3) USB Ports.
 - h) Video Display Card: HD Graphics (VGA, HDMI) with a minimum of 64 MB of RAM.
 - i) Monitor: 22" W, 23.0 Inch VIS, Widescreen, VGA/DVI LCD Monitor.
 - j) Available Exp. Slots: System as configured above must have at least two (2) full size PCI Slots available.
 - k) Network Interface: Integrated 10/100/1000 Ethernet card.
 - l) Other Peripherals: Optical scroll Mouse, 101 Key Keyboard, Mouse Pad and all necessary cables.
 - m) Software Requirement: Microsoft Windows 7 Professional SP1, 32 bit; Microsoft Office Professional 2010 or 2013; Microsoft Project 2010; Adobe Acrobat reader; Anti-Virus software package with 2 year updates subscription; and, either Auto Cad LT or Microsoft Visio Standard Edition, as directed by the Resident Engineer.
- 4) DDC Field Office Specs: DDC Field Offices requiring computers must be provided with the following:
- a) One (1) broad-band internet service account. Wideband Internet connectivity at a minimum throughput of fifteen (15) Mbps download and five (5) Mbps upload is required at each field office location with 1-5 staffers. For larger field offices see table below for minimum required upload speeds. Telephone service should be bundled together with Internet connectivity. Because of throughput requirements Verizon FIOS is the preferred connectivity provider where available.

Office Personnel #	Upload Speeds (<i>Minimum</i>)
1 – 5	5 Mbps
6 – 10	10 Mbps
11 – 15	15 Mbps
16 – 20 ...	20 Mbps

This account will be active for the life of the Project. The e-mail name for the account must be the DDC Field Office/Project Id (preferably Gmail or Outlook e.g. ABC1234@gmail.com).

- b) One (1) 600 DPI HP Color Laser Jet Printer (twelve (12) pages per minute or faster) with one (1) Extra Paper (Legal Size) (Not required if photocopying machine prints in color).
 - c) All necessary cabling for equipment specified herein
 - d) Storage Boxes for Blank CD's
 - e) Printer Table
 - f) UPS/Surge Suppressor combo
 - g) Ten (10) USB Thumb (or Flash) Drives – sixteen (16) GB each
- 5) All computers required for use in the DDC Field Office must be delivered, installed, and



setup in the Field Office by the Contractor.

- 6) All Computer Hardware must come with a three (3) year warranty for on-site repair or replacement. Additionally, and notwithstanding any terms of the warranty to the contrary, the Contractor is responsible for rectifying all computer problems or equipment failures within one (1) business day.
- 7) An adequate supply of blank CDs/DVDs, and paper and toner cartridges for the printer must be provided by the Contractor and must be replenished by the Contractor as required by the Resident Engineer.
- 8) It is the Contractor's responsibility to ensure that electrical service and phone connections are also available at all times; that is, the Field Office Computer(s) is to be powered and turned on twenty-four (24) hours each Day.
- 9) Broadband connectivity is preferred at each field office location. Please take into consideration that an extra phone line dedicated to the modem must be ordered as part of the Contract unless Internet broadband connectivity, via Cable or DSL, is available at the planned field office location. Any questions regarding this policy should be directed to the Assistant Commissioner of ITS at 718-391-1761.

E. HEAD PROTECTION (HARD HATS):

1. The Contractor must provide a minimum of ten (10) standard protective helmets for the exclusive use of DDC personnel and their visitors. Helmets must be turned over to the Resident Engineer and kept in the DDC Field Office.
2. Upon completion of the Project, the helmets must become the property of the Contractor.

3.9 MATERIAL SHEDS:

- A. Material sheds used by the Contractor for the storage of its materials must be kept at locations which will not interfere at any time with the progress of any part of the Work or with visibility of traffic control devices.
- B. The Contractor must store combustible materials apart from the facility.

3.10 TEMPORARY ENCLOSURES:

- A. The Contractor must provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather tight enclosure for building exterior.
- B. Where heating or cooling is needed and Permanent Enclosure is not complete, the Contractor must insulate temporary enclosures.

3.11 TEMPORARY PARTITIONS:

- A. The Contractor must provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate occupied tenant areas from fumes and noise, including, but without limitation:
 1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant plywood on construction operations side.
 2. Construct dustproof partitions with 2 layers of 3-mil (0.07-mm) polyethylene sheet on each side. Cover floor with two (2) layers of 3-mil (0.07-mm) polyethylene sheet, extending sheets eighteen (18) inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant plywood.



- a. Construct vestibule and airlock at each entrance through temporary partition with not less than forty-eight (48) inches (1219 mm) between doors. Maintain water-dampened foot mats in vestibule.
3. Insulate partitions to provide noise protection to occupied areas.
4. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
5. Protect air-handling equipment.
6. Weather strip openings.
7. Provide walk-off mats at each entrance through temporary partition.

3.12 TEMPORARY FIRE PROTECTION:

- A. The Contractor must install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with National Fire Protection Association (NFPA) Standard 241.
- B. Smoking in all areas is prohibited.
- C. The Contractor must supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
- D. The Contractor must develop and supervise an overall fire-prevention and protection program for personnel at Project Site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
- E. The Contractor must provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.13

3.13 WORK FENCE ENCLOSURE:

- A. The Contractor must furnish, erect and maintain a wood construction or chain-link fence to the extent shown on the Contract Drawings or required by the Work enclosing the entire Project on all sides. All materials used must be new. Any permit required for the installation and use of said fence and costs must be borne by the Contractor.
- B. WOOD FENCE must be seven (7) feet high with framing construction of yellow pine, using 4" x 4" approved preservative-treated posts on not more than 6'-0" centers, with three (3) rails of at least 2" x 4" size to which must be secured minimum 1/2 inch thick exterior grade plywood. Posts must be firmly fixed in the ground at least 30" and thoroughly braced. Top edge of fence must be trimmed with a rabbeted edge mould. Provide on the street traffic sides of fence, observation openings as directed.
 1. GATES: The Contractor must provide an adequate number of double gates, complete with hardware, located as approved by the Resident Engineer. Double gates must have a total clear opening of 14'-0" with two (2) 7'-0" hinged swinging sections. Hanging posts must be 6" x 6" and must extend high enough to receive and be provided with tension or sag rods for the swinging sections.
 2. PAINTING: The fence and gates must be entirely painted on the street and public sides with one (1) coat of exterior primer and one (1) top coat of exterior grade acrylic-latex emulsion paint. Black stenciled signs reading "POST NO BILLS" must be painted on fence with three (3) inch high letters on twenty-five (25) foot spacing for the entire length of fence on street traffic sides. Signs must be stenciled five (5) feet above the sidewalk.



- C. CHAIN-LINK FENCING must be minimum two (2) inch thick, galvanized steel, chain-link fabric fencing; eight (8) feet high with galvanized steel pipe posts; minimum 2-3/8-inch Outside Diameter (OD) line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top and bottom rails. Fence must be accurately aligned and plumb, adequately braced and complete with gates, locks and hardware as required. Under no condition must fencing be attached or anchored to existing construction or trees.
- D. ADDITIONAL REQUIREMENTS:
 - 1. It must be the obligation of the Contractor to remove all posters, advertising signs, and markings, etc., immediately.
 - 2. Should the fencing be required to be relocated during the course of the Contract, it must be done by the Contractor at no additional cost to the City.
 - 3. Where sidewalks are used for "drive over" purposes for Contractor vehicles, a suitable wood mat or pad must be provided for protection of sidewalks and curbs.
 - 4. Where required, make provision for fire hydrants, lampposts, etc.
 - 5. REMOVAL: When directed by the Resident Engineer, the fence must be removed.

3.14 RODENT AND INSECT CONTROL:

- A. DESCRIPTION: The Contractor must provide all labor, materials, plant and equipment, and incidentals required to survey and monitor rodent activity and to control any infestation or outbreak of rodents, rats, mice, water beetles, roaches and fleas within the Project area. Special attention should be paid to the following conditions or areas:
 - 1. Wet areas within the Project area, including all temporary structures.
 - 2. All exterior and interior temporary toilet structures within the Project area.
 - 3. All Field Offices and shanties within the Project area of all subcontractors and DDC.
 - 4. Wherever there is evidence of food waste and/or discarded food or drink containers, in quantity, that would cause breeding of rodents or the insects herein specified.
 - 5. Any other portion of the Site requiring such special attention.
- B. MATERIALS:
 - 1. All materials must be approved by the New York State Department of Environmental Conservation (DEC) and comply with the New York City Health Code, OSHA and the laws, ordinances and regulations of state and federal agencies pertaining to such chemical and/or materials.
- C. PERSONNEL:
 - 1. All pest control personnel must be supervised by an exterminator licensed in categories 7A and 8.
- D. METHODS:
 - 1. Application and dosage of all materials must be done in strict compliance with the manufacturer's recommendations.
 - 2. Any unsanitary conditions, such as uncollected garbage or debris, resulting from all Contractor's activities, which will provide food and shelter to the resident rodent population must be corrected by the Contractor immediately after notification of such condition by the Resident Engineer.
- E. RODENT CONTROL WORK:
 - 1. In wetlands, woodlands, and areas adjacent to a stream, special precautions must be taken to protect water quality and to ensure the safety of other wildlife. To prevent poisoned bait from entering streams, no poisoned bait must be used in areas within seventy-five (75) feet of all stream banks.



Live traps must be used in these seventy-five (75) foot buffer zone areas and within wetland and woodland areas.

2. In areas outside the seventy-five (75) foot zone of protection adjacent to streams, and in areas outside wetlands and woodlands, tamper proof bait stations with poisoned bait must be placed during the period of construction and any consumed or decomposed bait must be replenished as directed.
3. At least one (1) month prior to initiation of the construction Work, and periodically thereafter, live traps and/or rodenticide bait in tamper proof bait stations, as directed above, must be placed at locations that do not allow access to pets, human beings, children and other non-target species, particularly wildlife (for example-birds) in the Project area.
4. The Contractor must be responsible for collecting and disposing of all trapped and poisoned rodents found in live traps and tamper-proof bait stations. The Contractor must also be responsible for posting and maintaining signs announcing the baiting of each particular location.
5. The Contractor must be responsible for the immediate collection and disposal of any visible rodent remains found on streets or sidewalks within the Project area.
6. It is anticipated that public complaints will be addressed to the Commissioner. The Contractor, where directed by the Commissioner, must take appropriate actions, like baiting, trapping, proofing, etc., to remedy the source of complaint within the next six (6) hours of normal working time which is defined herein for the purposes of this section as 7 A.M. to 6 P.M. on Mondays through Saturdays.
7. Emergency service during the regular workday hours (Monday through Friday) must be rendered within twenty-four (24) hours, if requested by the Commissioner, at no additional cost to the City.

F. EDUCATION & NOTICES:

1. The Contractor must post notices on all Construction Bulletin Boards advising workers, employees, and residents to call the DDC Field Office to report any infestation or outbreak of rodents, rats, mice, water beetles, roaches and fleas within the Project area. The Contractor must provide and distribute literature pertaining to Integrated Pest Management (IPM) techniques of rodent control to affected businesses and superintendents of nearby residential buildings to ensure their participation in maintaining their establishments free of unsanitary conditions, harborage removal and rodent proofing.
2. Prior to application of any chemicals, the Contractor must furnish to the Commissioner copies or sample labels for each pesticide, antidote information, and Material Data Safety Sheets (MSDS) for each chemical used.

G. RECORDS

1. The Contractor must keep a record of all rodent and waterbug infestation surveys conducted and make available, upon request, to the Commissioner. The findings of each survey must include, but not be limited to, recommended IPM techniques, like baiting, trapping, proofing, etc., proposed for rodent and waterbug pest control.
2. The Contractor must maintain records of all locations baited along with the type and quantity of rodenticide and insecticide bait used.

3.15 PLANT PEST CONTROL REQUIREMENTS AND TREE PROTECTION REQUIREMENTS:

- A. Plant Pest Control Requirements: The Contractor and its subcontractors, including the Certified Arborist described below, must comply with all federal and New York State laws and regulations concerning Asian Longhorned Beetle (ALB) management, including protocols for ALB eradication and containment promulgated by the New York State Department of Agriculture and Markets (NYSDAM). The Contractor is referred to: (1) Part 139 of Title 1 NYCRR, Agriculture and Markets Law, Sections 18, 164 and 167, as amended, and (2) State Administrative Procedure Act, Section 202, as amended.



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1. All tree Work performed within the quarantine areas must be performed by NYSDAM certified entities. Transportation of all host material, living, dead, cut or fallen, inclusive of nursery stock, logs, green lumber, stumps, roots, branches and debris of a half inch or more in diameter from the quarantine areas is prohibited unless the Contractor or its subcontractor performing tree Work has entered into a compliance agreement with NYSDAM. The terms of said compliance agreement must be strictly complied with. Any host material so removed must be delivered to a facility approved by NYSDAM. For the purpose of this Contract, host material must be ALL species of trees.
 2. Any host material that is infested with the ALB must be immediately reported to NYSDAM for inspection and subsequent removal by either State or City contracts, at no cost to the Contractor.
 3. Prior to commencement of tree Work, the Contractor must submit to the Commissioner a copy of a valid ALB compliance agreement entered into with NYSDAM and the Contractor or its subcontractor performing tree Work. If any host material is transported from the quarantine area the Contractor must immediately provide the Commissioner with a copy of the New York State 'Statement of Origin and Disposition' and a copy of the receipt issued by the NYSDAM approved facility to which the host materials are transported.
 4. Quarantine areas, for the purpose of this Contract, must be defined as all five boroughs of the City of New York. In addition, prior to the start of any tree Work, the Contractor must contact the NYC Department of Parks & Recreation's (DPR) Director of Landscape Management at (718) 699-6724, to determine the limits of any additional quarantine areas that may be in effect at the time when tree Work is to be performed. The quarantine area may be expanded by federal and state authorities at any time and the Contractor is required to abide by any revisions to the quarantine legislation while working on this Contract. For further information please contact: NYSDAM (631) 288-1751.
- B. Tree Protection Requirements: The Contractor must retain a Certified Arborist, as defined by DPR regulations, to provide the services described below.
1. Surveys and Reports: The Certified Arborist must, at the times indicated below, conduct a survey and prepare a plant material assessment report which includes: (1) identification, by species and pertinent measurements, of all plant material located on the Project Site, or in proximity to the Project Site, as described below, including all trees, significant shrubs and/or planting masses; (2) identification and plan for the containment of plant pests and pathogens, including the ALB, as described in paragraph A above; and (3) evaluation of the general health and condition of any infected plant material.
 2. Frequency of Reports: The Certified Arborist must conduct a survey and provide a plant material assessment report at two (2) points in time: (1) prior to the commencement of construction Work; and (2) at the time of Substantial Completion. In addition, for projects exceeding twenty-four (24) months in duration, the Certified Arborist must conduct a survey and prepare a report at the midpoint of construction. Copies of each plant material assessment report must be submitted to the Resident Engineer within two (2) weeks of the survey.
 3. Proximity to Project Site: Off-site trees, significant shrubs and/or planting masses must be considered to be located in proximity to the Project Site under the circumstances described below.
 - a. The tree trunk, significant shrub, or primary cluster of stems in a planting mass is within fifty (50) feet of the project's Contract Limit Lines (CLLs) or Property Lines (PLs).
 - b. Any part of the tree or shrub stands within fifty (50) feet of: (a) a path for Site access for vehicles and/or construction equipment; or (b) scaffolding to be erected for construction activity, including façade remediation projects.
 - c. The Certified Arborist determines that the critical root zone (CRZ) of an off-site tree, significant shrub, or primary cluster of stems in a planting mass extends into the Project Site, whether or not that plant material is located within the fifty (50) foot inclusionary perimeter as outlined above.



4. Tree Protection Plan: The Certified Arborist must prepare, and the Contractor must implement, a Tree Protection Plan for all trees that may be affected by any construction Work, excavation or demolition activities, including without limitation: (1) on-site trees, (2) street trees, as defined below, (3) trees under DPR jurisdiction as determined by the NYC Department of Transportation, and (4) all trees that are located in proximity to the Project Site, as defined above. The Tree Protection Plan must comply with the DPR rules, regulations and specifications. The Contractor is referred to Chapter 5 of Title 56 of the Official Compilation of the Rules of the City of New York. Copies of the Tree Protection Plan must be submitted to the Resident Engineer prior to the commencement of construction. Implementation of the Tree Protection Plan for street trees and trees under DPR jurisdiction must be in addition to any tree protection requirements specified or required for the Project Site. For the purpose of this article, a “street tree” means the following: (1) a tree that stands in a sidewalk, whether paved or unpaved, between the curb lines or lateral lines of a roadway and the adjacent property lines of the Project Site, or (2) a tree that stands in a sidewalk and is located within fifty (50) feet of the intersection of the Project’s Site’s PL with the street frontage property line.
- C. No Separate Payment: No separate payment must be made for compliance with Plant Pest Control Requirements or Tree Protection Requirements. The cost of compliance with Plant Pest Control Requirements and Tree Protection Requirements must be deemed included in the Contractor’s bid for the Project.

3.16 PROJECT IDENTIFICATION SIGNAGE:

- A. The Contractor must provide, install and maintain Project identification and other signs where indicated to inform public and individuals seeking entrance to the Project.
- B. In order to properly convey notice to persons entering upon a City construction Site, the Contractor must furnish and install a sign at the entrance (gates) as follows:

**NO TRESPASSING
AUTHORIZED PERSONNEL ONLY**

- C. If no construction fence exists at the Site, this notice must be conveyed by incorporating the above language into safety materials (barriers, tape, and signs).
- D. Provide temporary, directional signs for construction personnel and visitors.
- E. Maintain and touch up signs so that they are legible at all times.

3.17 PROJECT CONSTRUCTION SIGN AND RENDERING:

- A. PROJECT SIGN:
 1. Responsibility: The Contractor must produce and install one (1) Project sign which must be posted and maintained upon the Project Site at a place and in a position directed by the Commissioner. The Contractor must protect the sign from damage during the continuance of Work under the Contract and must do all patching of lettering, painting and bracing thereof necessary to maintain the sign in first class condition and in proper position. Prior to fabrication, the Contractor must submit an 8-1/2” x 11” color match print proof from the sign manufacturer of the completed sign for approval by the Commissioner.
 2. Sign Quality: The Contractor must provide all materials required for the production of the sign as specified herein. Workmanship must be of the best quality, free from defects and must be produced in a timely manner.



3. Schedule: Upon Project mobilization, the Contractor must commence production and installation of the sign.
4. Removal: At the completion of all Work under the Contract, the Contractor must remove and dispose of the Project sign away from the Site.
5. Sign construction:
 - a. Frame: The frame must be from quality dressed 2"x2" pine, fire retardant, pressure treated lumber, that surrounds the inside back edge of the sign. The sign must have one (1) intermediate vertical and two (2) diagonal supports, glued and screwed for rigidity. Frame must be painted white with two (2) coats of exterior enamel paint, prior to mounting of sign panel.
 - b. Edging: U-shaped, twenty-two (22) gauge aluminum edging, with a white enameled finish to match sign background, must run around entire edging of sign panel and frame. Corners must be mitered for a tight fit. Channel dimensions must be 1" inch (overlap to sign panel face) x 1 3/4" (or as required across frame depth) x 1" (back overlap).
 - c. Sign Panel: 4' x 8' panel must be constructed in one (1) piece of fourteen (14) gauge (.0785") 6061-T6 aluminum. This panel must be pre-finished both sides with a glossy white baked-on enamel finish and be flush with edge of 2" x 2" wood frame. Samples must be submitted for approval.
 - d. Fastening: Fasten sign panel to wood frame using cadmium plated no. 8 sheet metal screws at 1/2" below edge of panel and 8" on center. The U-shaped aluminum channel must be applied over the wood frame edge and fastened with cadmium plated no. 8 sheet metal screws at 12" on center around the entire perimeter.
6. Sign Graphics:
 - a. A digital file of the Project sign will be provided to the Contractor by the Commissioner's representative for printing. The Commissioner's representative must insert the Project name and names and titles of personnel (three (3) or more) and any other required information associated with the Project. All signs may include a second panel for a Project rendering as described in sub-section 3.17.B herein.
 - b. The digital file must be reproduced at the Sign Panel size of 4' x 8' on 3M High Performance Vinyl or approved equal. The 3M High Performance Vinyl or equivalent must be guaranteed for nine (9) years. Guarantee must cover fading, peeling, chipping or cracking. The sign manufacturer is required to maintain all specified Pantone Matching System (PMS) type and other composition elements represented in the digital file of the Project sign.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.17 B

B. PROJECT RENDERING:

1. Responsibility: In addition to the Project sign, the Contractor must furnish and install one (1) sign showing a rendering of the Project. A digital file of the Project rendering will be provided to the Contractor by the Commissioner's representative. From an approved image file provided by DDC, the Project rendering is to be sized, printed, and mounted in an identical manner as described in sub-section 3.17.A above for the Project sign. A color match print proof from the sign manufacturer of the rendering sign printed from the supplied file is to be submitted to DDC for approval before fabrication. The rendering sign is to be posted at the same height as the Project sign. Where possible, the rendering sign must be mounted with a perfect match of the short sides of the rectangle so that the rendering sign and the Project sign together will create one long rectangle.
2. Removal: At the completion of all Work under the Contract, the Contractor must remove and dispose of the Project rendering away from the Site.



REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.18

3.18 SECURITY GUARDS/FIRE GUARDS ON SITE:

A. SECURITY GUARDS (WATCHMEN):

1. The Contractor must provide a competent security guard service on the Site, beginning on the date on which the Contractor commences actual construction Work, or on such earlier date on which there is activity at the Site related to the Work, including without limitation, delivery of materials or construction set-up. The Contractor must continue to provide such security guard service until the date on which it completes all required Work at the Site, including all punch list Work, as certified in writing by the Resident Engineer, or earlier if so directed in writing by the Commissioner. Throughout the specified time period, there must be no less than one (1) security guard on duty every day, including Saturdays, Sunday and holidays, twenty-four (24) hours a day, except between the hours of 8:00 A.M. and 4:00 P.M. on any day which is a regular working day for a majority of the trade subcontractors. This exception during the working day must not apply after the finishing painting of the plaster Work is commenced; thereafter, not less than one (1) security guard must be on duty continuously, twenty-four (24) hours a day.
2. Every security guard must be required to hold a "Certificate of Fitness" issued by FDNY. Every security guard must, during his/her tour of duty, perform the duties of fire guard in addition to his/her security obligations.
3. Should the Commissioner find that any security guard is unsatisfactory, such guard must be replaced by the Contractor upon the written demand of the Commissioner.
4. Each security guard furnished by the Contractor must be instructed by the Contractor to include in his/her duties the entire construction Site including the Field Office, temporary structures, and equipment, materials, etc.
5. Should the Contractor or any other subcontractor consider the security requirements outlined above inadequate, the Contractor must provide such additional security as it thinks necessary, after obtaining the written consent of the Commissioner. The additional cost of such approved increased protection will be paid by the Contractor.
6. Nothing contained in this sub-section must diminish in any way the responsibility of the Contractor and each subcontractor for its own Work, materials, tools, equipment, nor for any of the other risks and obligations outlined hereinbefore in this Article.

- B. COSTS:** The Contractor must employ security guards/fire guards throughout the specified time period, except as otherwise modified by the detailed Specifications and as approved by the Commissioner, for the purpose of safeguarding and protecting the Site. All costs for security guards/fire guards must be borne by the Contractor.

- C. RESPONSIBILITY:** The Contractor and its subcontractors will be responsible for safeguarding and protecting their own work, materials, tools and equipment.

3.19 SAFETY:

- A.** The Contractor, in compliance with requirements of Section 01 35 26, SAFETY REQUIREMENTS PROCEDURES, must provide and maintain all necessary temporary closures, guard rails, and barricades to adequately protect all workers and the public from possible injury. Any removal of these items, during the progress of the Work, must be replaced by the Contractor at no additional cost to the City.

END OF SECTION 01 50 00



**SECTION 01 54 11
TEMPORARY ELEVATORS AND HOISTS**

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. This section includes the following:
 - 1. Temporary Use, Operation and Maintenance of Elevators during Construction
 - a. For new buildings up to and including fifteen (15) stories
 - b. For new buildings over fifteen (15) stories
 - c. For existing buildings
 - 2. Temporary Construction Hoists and Hoistways (For Material and Personnel)

1.3 RELATED SECTIONS: include without limitation the following:

- A. Section 01 10 00 SUMMARY
- B. Section 01 42 00 REFERENCES
- C. Section 01 50 00 TEMPORARY FACILITIES AND CONTROLS
- D. Section 01 54 23 TEMPORARY SCAFFOLDS AND SWING STAGING
- E. Section 01 77 00 CLOSE OUT PROCEDURES

PART II – PRODUCTS (Not Used)

PART III – EXECUTION

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.1

3.1 TEMPORARY USE, OPERATION AND MAINTENANCE OF ELEVATORS DURING CONSTRUCTION FOR NEW BUILDINGS UP TO AND INCLUDING FIFTEEN (15) STORIES:

- A. **INSTALLATION:** The Contractor must install, complete, operate, and maintain in good working order, as indicated herein, one (1) selected main elevator for the transport of employees of the Contractor and/or its subcontractors, representatives of DDC, and other governmental agencies having jurisdiction of Work at the Project. The Contractor must furnish, install, and maintain such elevator in good working order, including all necessary hoisting ropes, governor cables, traveling conductor cables, operating devices, temporary hand reset target annunciators, temporary signal devices, and all other permanent or temporary parts. The installation, operation and maintenance of the temporary elevator and all equipment and/or parts utilized in connection therewith must be in accordance with the rules and regulations of all agencies and/or entities having jurisdiction over elevators in temporary use.
- B. **RESPONSIBILITY:** The Contractor must be responsible for any injury to persons or damage to property arising out of the temporary elevator and all equipment and/or parts utilized in connection therewith.
- C. **COSTS:** The Contractor must be responsible for all costs in connection with the temporary elevator, including without limitation:



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1. Installing and operating the temporary elevator;
2. Maintaining the temporary elevator in clean and proper operating condition, including the cost of lubricants and/or parts for such maintenance;
3. Performing all Work in pits, shaft ways and machine rooms necessary for the operation of the temporary elevator;
4. Replacing the temporary elevator or any equipment or parts utilized in connection therewith, if required, due to damage, destruction, or excessive wear or corrosion, except for the replacement of hoisting ropes as set forth below;
5. Performing all required electrical Work in connection with the temporary elevator;
6. Providing all electric power required to operate the temporary elevator;
7. Providing all necessary conduit and wiring connections for the proper operation and signaling of the temporary elevator; and
8. Providing all labor for the operation and maintenance of the temporary elevator, including on an overtime basis if necessary.

The total Contract price must include all costs in connection with the temporary elevator, including without limitation, the costs specified herein.

- D. **COMMENCEMENT OF SERVICE:** The Contractor must begin to provide temporary elevator service using the selected main passenger elevator no later than eight (8) weeks (forty (40) Days) after the machine room roof slab, or that portion of it surrounding the elevator shaft, has been placed. No later than three (3) weeks (fifteen (15) Days) after the machine room roof slab has been placed, or that portion of it surrounding the elevator shaft, the following Work must be completed:
1. The shaft must be completely enclosed by either a permanent or temporary enclosure meeting all building code requirements.
 2. The machine room must be completely watertight either by permanent or temporary construction. Beams or other devices, either permanent or temporary, must be provided to enable the safe and practicable hoisting of the elevator machinery for installation.
 3. On all floors at the shaft way entrances to the elevator, the Contractor must install solid substantial frames, either sliding or swing doors with substantial hardware and door locks, and any necessary approved wire mesh barricades for adjacent shaft ways.
 4. The Contractor must furnish and install solid, substantial enclosures at front, back, sides and top of car platform enclosure, with an emergency exit at the top of car and a substantial temporary door or gate on the front of the elevator entrance.
- E. **ELECTRICAL INSTALLATION:** The Contractor, no later than twenty (20) Days after the machine room roof slab or that portion of it surrounding the elevator has been placed, must furnish and install temporary or permanent power and light feeders as required for the elevator used for temporary service. Additionally, the Contractor must connect such feeders to the terminals on the starter panels or controllers in the machine room to the low voltage transformers and car light outlets in the center of the shaft way and for the car control and signal traveling cables. The Contractor must make all these required connections as soon as the equipment is declared ready for such connections by the Resident Engineer.
- F. **REMOVAL:** As directed by the Commissioner and when elevators for permanent use have been installed and are in proper condition for service, the Contractor must remove the temporary enclosures and all temporary elevator equipment and promptly proceed with the installation of the permanent equipment as required under the Contract.



- G. **INSPECTION:** Before temporary elevator equipment is removed, a joint inspection of the equipment must be made by the Contractor and the Commissioner to determine the condition of this equipment upon the discontinuation of its temporary use. If this inspection deems it necessary, the Contractor must furnish and install new governor and compensating ropes, traveling cables, controller parts, etc. The car and counterweight safeties must be thoroughly cleaned of all dirt and all foreign matter, then properly lubricated and placed in good operating condition to the satisfaction of the Commissioner. If it is determined and ordered by the Commissioner that new hoist ropes are required, such ropes must be installed and payment will be made in accordance with Article 26 of the Contract.
- H. **REPLACEMENT:** The Contractor must furnish and install new equipment or parts for any equipment or parts of the temporary elevator installation that have been damaged, destroyed, or that indicate excessive wear or corrosion, except for the replacement of hoisting ropes. All shaft ways, pits, motor rooms and sheave spaces used for temporary operation of elevators must be thoroughly cleaned. Where lubricated rails are used they must be washed down. If roller guides are used, all rust, dirt, etc., must be moved from the rails. The full cost of parts replacement, cleaning, etc., must be borne by the Contractor except for the replacement of hoisting ropes.
- I. **LIMITATIONS ON USE:** The temporary elevator must not be used during its operation for the hoisting of materials or the removal of rubbish, but must be limited only to the transportation of employees of the Contractor and/or its subcontractors, representatives of DDC, and other governmental agencies having jurisdiction of work at the Project. However, the Resident Engineer may grant special permission at specified times to the Contractor and/or its subcontractors to hoist materials, which in the Resident Engineer's opinion will not overload or damage the elevator installation. In the event of any damage to the temporary elevator, the Contractor must notify the Resident Engineer within twenty-four (24) hours after such damage has occurred. As indicated above, the Contractor must be responsible for the replacement of any equipment or parts of the temporary elevator that have been damaged.
- J. **LIQUIDATED DAMAGES:** The Contractor will be charged at the rate of one hundred dollars (\$100) per Day for each Day it fails to provide the temporary elevator service described in this section beginning with the forty-first (41st) Day after the machine room roof slab, or that portion of it surrounding the elevator shaft, has been placed and stripped. This charge will be deducted from any amount due and owing to the Contractor.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.2

3.2 TEMPORARY USE, OPERATION AND MAINTENANCE OF ELEVATORS DURING CONSTRUCTION FOR NEW BUILDING OVER FIFTEEN (15) STORIES:

- A. **INSTALLATION:** The Contractor must install, complete, operate, and maintain in good working order, as indicated herein, two (2) selected main elevators for the transport of employees of the Contractor and/or its subcontractors, representatives of DDC, and other governmental agencies having jurisdiction of work at the Project. The Contractor must furnish, install, and maintain such elevators in good working order, including all necessary hoisting ropes, governor cables, traveling conductor cables, operating devices, temporary hand reset target annunciators, temporary signal devices, and all other permanent or temporary parts. The installation, operation, and maintenance of the temporary elevators and all equipment and/or parts utilized in connection therewith must be in accordance with the rules and regulations of all agencies and/or entities having jurisdiction over elevators in temporary use. The two (2) elevators must not be operated simultaneously.
- B. **RESPONSIBILITY:** The Contractor must be responsible for any injury to persons or damage to property arising out of the temporary elevators and all equipment and/or parts utilized in connection therewith.
- C. **COSTS:** The Contractor must be responsible for all costs in connection with the temporary elevators, including without limitation:
 - 1. Installing and operating the temporary elevators;



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2. Maintaining the temporary elevators in clean, proper operating condition, including the cost of lubricants and/or parts for such maintenance;
3. Performing all Work in pits, shaft ways and machine rooms necessary for the operation of the temporary elevators;
4. Replacing the temporary elevators or any equipment or parts utilized in connection therewith, if required due to damage, destruction, or excessive wear or corrosion, except for the replacement of hoisting ropes as set forth below;
5. Performing all required electrical Work in connection with the temporary elevators;
6. Providing all electric power required to operate the temporary elevators;
7. Providing all necessary conduit and wiring connections for the proper operation and signaling of the temporary elevators; and
8. Providing all labor for the operation and maintenance of the temporary elevators, including on an overtime basis if necessary.

The total Contract price must include all costs in connection with the temporary elevators, including without limitation, the costs specified herein.

- D. **LOW RISE ELEVATOR:** The Contractor must begin to provide temporary elevator service using one (1) selected main passenger elevator no later than six (6) weeks (thirty (30) Days) after the twelfth (12th) floor slab, or that portion of it surrounding the elevator shaft, has been placed and stripped. No later than one (1) week, (five (5) Days), after the twelfth (12th) floor slab, or that portion of it surrounding the elevator shaft, has been placed and stripped, the following Work must have been completed:
1. The shaft must be completely enclosed up to the twelfth (12th) floor by either the permanent or a temporary enclosure meeting the requirements of the law.
 2. A temporary machine room enclosure must be provided at the eleventh (11th) floor and must be completely watertight either by permanent or temporary construction. Beams or other devices, either permanent or temporary, must be provided which will enable the safe and practicable hoisting of the elevator machinery for installation.
 3. The Contractor must install on all floors up to and including the ninth (9th) floor at the shaft entrances to the elevator, solid substantial wood frames, either sliding or swing doors with substantial hardware and door locks, and any necessary approved wire mesh barricades for adjacent shaft ways.
 4. The Contractor must furnish and install solid substantial enclosures at front, back, sides and top of car platform enclosure, with an emergency exit at top of car, except that the portion of the front at the elevator entrance must be provided with a substantial temporary door or gate.
- E. **ELECTRICAL INSTALLATION:** The Contractor must, no later than ten (10) Days after the twelfth (12th) floor slab or that portion of it surrounding the elevator has been poured and stripped, furnish and install temporary or permanent power and light feeders as required for the elevator used for temporary service. The Contractor must connect such feeders to the terminals on the starter panels or controllers in the temporary machine room to the low voltage transformers, car light outlets in the center of the shaftway, and for the car control and signal traveling cables. The Contractor must make all these required connections as soon as the equipment is declared ready for such connections by the Resident Engineer.
- F. **HIGH RISE ELEVATOR:** The Contractor must begin to provide temporary elevator service to all floors using a selected main passenger elevator no later than eight (8) weeks (forty (40) Days) after the machine room roof slab, or that portion of it surrounding the elevator shaft has been placed. No later than three (3) weeks (fifteen (15) Days) after the machine room roof slab, or that portion of it surrounding the elevator shaft has been placed, the following Work must have been completed:
1. The shaft must be completely enclosed by either the permanent or temporary enclosure, meeting the



requirements of the law.

2. The machine room must be completely watertight either by permanent or temporary construction. Beams or other devices, either permanent or temporary, must be provided to enable the safe and practicable hoisting of the elevator machinery for installation.
 3. The Contractor must install on all floors at the shaft way entrances to the elevator solid substantial frames, either sliding or swing doors with substantial hardware and door locks, and any necessary approved wire mesh barricades for adjacent shaft ways.
 4. The Contractor must furnish and install solid substantial enclosures at front, back, sides and top of car platform enclosure, with an emergency exit at top of car, except that the portion of the front at the elevator entrance must be provided with a substantial temporary door or gate.
- G. **ELECTRICAL INSTALLATION:** The Contractor must, not later than twenty (20) Days after the machine room slab or that portion of it surrounding the elevator shaft has been placed, furnish and install temporary or permanent power and light feeders as required for the high-rise elevator to be used for temporary service. The Contractor must connect such feeders to the terminals on the motor-generator starter panels, or controllers in the machine room, to the signal circuits low voltage transformers for the annunciators and car light outlets in the center of shaft way. The Contractor must make all these required connections as soon as the equipment is declared ready for such connections by the Resident Engineer.
- H. When the high-rise elevator is completed and ready for temporary operation, the low-rise temporary elevator must be shut down.
- I. **REMOVAL:** When directed by the Commissioner and one (1) or more elevators for permanent use have been installed and are in condition for service, the Contractor must remove the temporary enclosures, all temporary elevator equipment, and promptly proceed with the installation of the permanent equipment as required under the Contract.
- J. **INSPECTION:** Before temporary elevator equipment is removed, a joint inspection of the equipment must be made by the Contractor and the Commissioner to determine the condition of this equipment upon the discontinuation of its temporary use. If this inspection determines it necessary, the Contractor must furnish and install new governor and compensating ropes, new traveling cables, new controller parts, etc. The car and counterweight safeties must be thoroughly cleaned of all dirt and all foreign matter, then properly lubricated and placed in good operating condition to the satisfaction of the Commissioner. If it is determined and ordered by the Commissioner that new hoist ropes are required, such ropes must be installed and payment will be made in accordance with Article 26 of the Contract.
- K. **REPLACEMENT:** The Contractor must furnish and install new equipment or parts for any equipment or parts of the temporary elevator installations that have been damaged, destroyed, or that indicate excessive wear or corrosion, except the replacement of hoisting ropes. All shaft ways, pits, motor rooms and sheaves spaces used for temporary operation of elevators must be thoroughly cleaned down. Where lubricated rails are used they must be washed down; if roller guides are used, all rust, dirt, etc., must be removed from the rails. The full cost of parts replacement cleaning, etc., must be borne by the Contractor except for the replacement of hoisting ropes.
- L. **LIMITATIONS ON USE:** The temporary elevators must not be used during their operation for the hoisting of materials or the removal of rubbish, but must be limited only to the transportation of employees of the Contractor and/or its subcontractors, representatives of DDC, and other governmental agencies having jurisdiction of Work at the Project. However, the Resident Engineer may grant special permission at specified times to the Contractor and/or its subcontractors to hoist materials, which in the Resident Engineer's opinion will not overload or damage the elevator installation, but only after such times as all plastering has been completed from the second floor up. In the event of any damage to the temporary elevator, the Contractor must notify the Resident Engineer within twenty-four (24) hours after such damage has occurred. As indicated above, the Contractor must be responsible for the replacement of any equipment or parts of the temporary elevator that have been damaged.



- M. **LIQUIDATED DAMAGES:** The Contractor will be charged at the rate of one hundred dollars (\$100) per Day for each Day it fails to provide the temporary elevator service described in this Section beginning with the thirty-first (31st) Day after the twelfth (12th) floor slab, or that portion of the twelfth (12th) floor slab surrounding the elevator shaft, has been placed and stripped. This charge will be deducted from any amount due and owing to the Contractor.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.3

3.3 TEMPORARY USE, OPERATION AND MAINTENANCE OF ELEVATORS DURING CONSTRUCTION FOR EXISTING BUILDINGS:

- A. The Contractor may use, at the Commissioner's discretion, one (1) selected elevator in the building for temporary operation by the Contractor for the transportation of employees of the Contractor and/or its subcontractors, representatives of DDC, and other governmental agencies having jurisdiction over the Work at the Project. The operation of the temporary elevator and all equipment and/or parts utilized in connection therewith must be in accordance with the rules and regulations of all agencies and/or entities having jurisdiction over elevators in temporary use.
- B. **RESPONSIBILITY:** The Contractor must be responsible for any injury to persons or damage to property arising out of the temporary elevator and all equipment and/or parts utilized in connection therewith.
- C. **REPLACEMENT:** The Contractor must furnish and install new equipment or parts for any equipment or parts of the elevator for temporary operation that have been damaged, destroyed, or that indicate excessive wear or corrosion, except the replacement of hoisting ropes. All shaft ways, pits, motor rooms and sheave spaces used for temporary operation of elevators must be thoroughly cleaned down. Where lubricated rails are used they must be washed down, if roller guides are used, all rust, dirt, etc., must be moved from the rails. The full cost of parts replacement, cleaning, etc., must be borne by the Contractor except for the replacement of hoisting ropes. If it is determined and ordered by the Commissioner that new hoist ropes are required, such ropes must be installed and payment will be made in accordance with Article 26 of the Contract.
- D. **LIMITATIONS ON USE:** The temporary elevator must not be used during its operation for the hoisting of materials or the removal of rubbish, but must be limited only to the transportation of employees of the Contractor and/or its subcontractors, representatives of DDC, and other governmental agencies having jurisdiction of Work at the Project. However, the Resident Engineer may grant special permission at specified times to the Contractor and/or its subcontractors to hoist materials, which in the Resident Engineer's opinion will not overload or damage the elevator installation. In the event of any damage to the temporary elevator, the Contractor must notify the Resident Engineer within twenty-four (24) hours after such damage has occurred. As indicated above, the Contractor must be responsible for the replacement of any equipment or parts of the temporary elevator that have been damaged.
- E. **LIQUIDATED DAMAGES:** The Contractor will be charged at the rate of one hundred dollars (\$100) per Day for each Day it fails to provide elevator services described in this section beginning with fifteen (15) Days from Notice to Proceed (NTP). This charge will be deducted from any amount due and owing to the Contractor.

3.4 TEMPORARY HOISTS AND HOISTWAYS (FOR MATERIAL AND PERSONNEL):

- A. **RESPONSIBILITY:** The Contractor must provide adequate numbers of material hoists for the most expeditious performance of all parts of the Work including the Work of all its subcontractors.
- B. **LOCATIONS:** No hoists must be constructed at such locations as to interfere with, or affect the construction of, floor arches or the Work of subcontractors. The hoists may be located at the exterior sides of the structure or in the courtyard and extend upward adjacent to the line of window openings. The hoists must be located a sufficient distance from the exterior walls and be so protected as to prevent any of the permanent Work from being damaged, stained or marred.



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- C. ELEVATOR SHAFT: Wherever possible, one or more of the permanent elevator shafts may be used as temporary hoistways, providing such use complies with the requirements of the Building Code of the City of New York, has been approved by the Commissioner, and does not interfere with the progress of the Work.
- D. PROTECTION FOR INTERIOR HOISTS: All interior material hoistways must be enclosed on each floor and must be adequately protected with appropriate safety guards. In no event must the protection be less than that required by law.

END OF SECTION 01 54 11



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**SECTION 01 54 23
TEMPORARY SCAFFOLDING AND PLATFORMS**

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].
- B. SECTION 01 35 26 SAFETY REQUIREMENTS PROCEDURES.
- C. The Contractor must comply with the requirements of “*The City of New York Department of Design and Construction Safety Requirements*”. This document is included in the Information for Bidders.

1.2 SUMMARY:

- A. This Section includes administrative and general procedural requirements for Temporary Scaffolding and Platforms, including:
 - 1. Conformance
 - 2. Responsibility
 - 3. Jobsite Documentation and Submittals
 - 4. Inspections
- B. This Section governs ALL scaffold used on DDC Project site(s), including but not limited to, Suspended Scaffold, Supported Scaffold, and Sidewalk Sheds.

1.3 CONFORMANCE:

- A. Unless otherwise indicated, the Contractor is responsible for providing, erecting, installing, and maintaining all temporary scaffolding and platforms which must comply with requirements of Chapter 33 (Safeguards During Construction or Demolition) of the New York City (NYC) Building Code, NYC Local Law 52 of 2005, OSHA Construction Standard 1926 Subpart L, and furnishing the items and personnel set forth in this Section.

1.4 RESPONSIBILITY:

- A. Jobsite Safety Coordinator: The Contractor must designate and employ a Jobsite Safety Coordinator, who must be a competent person, who must have a daily presence on the Project site during scaffold use. This designee must possess and maintain a valid New York City Department of Buildings (DOB) supported scaffold certificate of completion. An alternate must also be designated in the event that the Jobsite Safety Coordinator is absent. The Jobsite Safety Coordinator must:
 - 1. Verify completeness of documentation and submittals (as described below);
 - 2. Verify that inspections are performed, including pull tests (see below), reports are filed and reported deficiencies are corrected;
 - 3. Monitor trades using scaffold;
 - 4. Limit access to scaffold areas that are tagged for non-use;
 - 5. Inform trades of scaffold load limitations;
 - 6. Monitor loading of decks;
 - 7. Verify that any ties that are temporarily removed are properly restored in the same shift;
 - 8. Verify that outriggers and planks that are moved are properly set up and secured;
 - 9. Verify that all scaffold decks in use have proper access/egress;
 - 10. Verify that all open sides of decks in excess of 14 inches have proper guardrails and toe-boards;



11. Notify appropriate parties, including but not limited to the Resident Engineer, site safety coordinator / monitor, site safety consultant, scaffold users, contractor and the scaffold engineer, of misuses, non-conformances, hazards and accidents; and,
 12. Keep a log of significant actions and events connected with the scaffolding.
- B. The Contractor will be responsible for erecting, maintaining, and dismantling the scaffolding and/or sidewalk shed in conformance with requirements of the NYC Building Code, OSHA and the Contract Documents, including the Specifications. The Contractor must also be guided by generally accepted standards of scaffold industry practice as promulgated by the Scaffold Industry Association.
- C. The Contractor must require the subcontractor responsible for erecting the scaffolding to engage a Scaffold Engineer, licensed as a professional engineer by the State of New York. The Scaffold Engineer will be responsible to ensure the following: (1) that the installation design is in compliance with requirements of the NYC Building Code and OSHA, (2) that the design comports with the capabilities of the components and the characteristics of the site, (3) that scaffold loads on the host building, including netting, have been properly considered, and (4) that the design documents provide accurate information for erectors and users.
- D. Scaffold users are trade contractors assigned to work on the scaffold. Training certificates from a DOB-approved training provider are mandatory. These users have a duty to become familiar with the NYC Building Code and OSHA requirements germane to users, to obey the instructions of the Jobsite Safety Coordinator, and to inform the Jobsite Safety Coordinator of known hazards, non-conformances, or violations.

1.5 JOBSITE DOCUMENTATION AND SUBMITTALS:

The Contractor must prepare, obtain, and submit the following to the Resident Engineer:

- A. NYC DOB permit(s) for scaffold and sidewalk sheds (as applicable) including filing applications signed and sealed by a Professional Engineer licensed in the State of New York;
- B. Site logistics plan / site safety plan;
- C. Installation drawing(s), design, and product data to be provided for all scaffold(s) and shed(s) must include, at a minimum:
 1. Plan(s);
 2. Elevation(s);
 3. Duty load designation: "standard" (150 psf live load) or "heavy duty" (300 psf live load);
 4. Details including base support, anchors and ties;
 5. Notes and specifications including load limits, number of planked levels, tie spacing, netting, and sequence of installation and removal;
 6. Anchorage into sound material;
 7. Load limits based on pull tests;
 8. Specifications for pull test(s), method, proof load and the number of trials;
 9. Elevations, levels or heights, where anchorage is made into masonry;
 10. Specifications for frames, planks, screw jacks, anchors, and any other ancillary hardware;
 11. Samples for anchors, ties and netting;
 12. Sequence of operations for erection and demolition;
 13. Location plan, heights, widths, "jumps" over doorways and driveways;
 14. Specify size, maximum span and maximum spacing of headers and stringers;
 15. Specify legs, girts, braces, nailing and connections; and,
 16. All sidewalk sheds must be designed, engineered, signed, and sealed by a Professional Engineer licensed in the State of New York;
 - a. Generic (not job-specific) engineering drawings are satisfactory for standard sheds and arrangements.



- b. Special engineering is required for custom sheds, site-specific problems or non-standard arrangements.

1.6 INSPECTIONS:

- A. Signed inspection reports must be issued for each inspection and pull-test below, and must be logged and maintained on site by the Jobsite Safety Coordinator for the duration of the Project.
- B. Pull testing will be required during design, and during or post erection, where anchorage is made into masonry. The Scaffold Engineer must specify the test method, proof load, and the number of trials.
- C. Sidewalk sheds must be inspected after initial installation, major modification, or damage and thence every three months. Inspections must be by a Scaffold Engineer for custom sheds and by a Competent Person employed by the Contractor for standard sheds.
- D. Scaffolds must be inspected by the Scaffold Engineer during erection, post-erection, and prior to use and thence every three (3) months. The Scaffold Engineer must repeat inspections after major alteration/ modification, and/or damage.
- E. A Qualified Person assigned by the Contractor must inspect: the progress of erection and dismantling; and, the condition and integrity of the sidewalk sheds after high winds, major storms, and at least once per month during usage.
- F. A Qualified Person assigned by the Contractor must inspect: the progress of erection and dismantling at least weekly; and, the condition and integrity of the scaffold after high winds, major storms, and at least once per month during usage.
- G. Scaffolds and Sidewalk Sheds must be inspected daily by the Jobsite Safety Coordinator or alternate, prior to use by scaffold users. The inspection results must be recorded in the maintenance log and must always be available on-site.
- H. At the completion of the Project, submit all inspection documents as Miscellaneous Record Documents in accordance with SECTION 01 78 39 CONTRACT RECORD DOCUMENTS.

1.7 LADDERS AND STAIRS:

- A. The Contractor must provide and maintain ladders or temporary stairs extending from the street to the first story, and to and from every floor and roof level of the Project.

1.8 ACCESS AND EXITS:

- A. The ladders or temporary stairs must be of acceptable size, number and location, so that proper and convenient access may be had by those required to proceed to and from all parts of the Project.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 54 23



**Department of
Design and
Construction**

Division 01 – DDC STANDARD GENERAL CONDITIONS
SINGLE CONTRACT PROJECTS
Issue Date: March 15, 2020

(No Text on This Page)



**SECTION 01 73 00
EXECUTION**

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. This Section includes general procedural requirements governing execution of the Work including without limitation the following:
1. Delivery of Materials
 2. Contractor's Superintendent
 3. Surveys
 4. Borings
 5. Examination
 6. Environmental Assessment
 7. Preparation
 8. Deferred Construction
 9. Installation
 10. Permits
 11. Transportation
 12. Sleeves and Hangers
 13. Sleeve and Hanger Drawings
 14. Cutting and Patching
 15. Location of Partitions
 16. Furniture and Equipment
 17. Removal of Rubbish and Surplus Material
 18. Cleaning
 19. Security and Protection of Work Site
 20. Maintenance of Site and Adjoining Property
 21. Maintenance of Project Site
 22. Safety Precautions for Control Circuits
 23. Obstructions in Drainage Lines
 24. Payment for Allowances

1.3 RELATED SECTIONS: Include without limitation the following:

- | | | |
|----|------------------|------------------------------------------|
| A. | Section 01 10 00 | SUMMARY |
| B. | Section 01 31 00 | PROJECT MANAGEMENT AND COORDINATION |
| C. | Section 01 33 00 | SUBMITTAL PROCEDURES |
| D. | Section 01 74 19 | CONSTRUCTION WASTE MANAGEMENT & DISPOSAL |
| E. | Section 01 77 00 | CLOSEOUT PROCEDURES |
| F. | Section 01 78 39 | CONTRACT RECORD DOCUMENTS |



1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

<u>Term</u>	<u>Definition</u>
Design Consultant	The entity responsible for providing design services for the Project, including, without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.5 QUALITY ASSURANCE:

- A. Land Surveyor Qualifications: A professional land surveyor who is licensed in the State of New York and who is experienced in providing land-surveying services of the kind indicated.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 DELIVERY OF MATERIALS:

- A. Material Orders: The Contractor must furnish to the Commissioner a copy of each material order, indicating date of order and quantity of material, and must also notify the Commissioner when materials have been delivered to the Site and in what quantities.
- B. Ample Quantities: The Contractor must deliver materials in ample quantities to ensure the most prompt and uninterrupted progress of the Work so as to complete the Work within the Contract time.
- C. Containers: The manufacturer's containers must be delivered with unbroken seals and must bear proper labels.
- D. Deliveries: The Contractor must coordinate deliveries in order to avoid delaying or impeding the progress of the Work.
- E. Handling: The Contractor must provide equipment and personnel to handle products by methods to prevent soiling or damage.
1. Promptly inspect shipments to assure products comply with requirements, quantities are correct, and products are undamaged.
 2. Promptly return damaged shipments or incorrect orders to manufacturer.
 3. For materials or equipment to be reused or salvaged, use special care in removal, storage and reinstallation to insure proper function in completed Work.
- F. Storage: Store products in accordance with provisions of Article 3.1 of the Standard Construction Contract, and periodically inspect to assure that stored products are undamaged and are maintained under required conditions.
- G. Stacking: All materials must be properly stacked in convenient places adjacent to the Site, or where directed, and protected in a satisfactory manner. Stacked materials must be arranged so as to not interfere with visibility of traffic control devices.



- H. Overloading: If the Commissioner permits the storage of materials in any part of the Project area, they must be so stored as to cause no overloading.
- I. No Interference: If it becomes necessary to remove and restack materials to avoid impeding the progress of any part of the Work or interfering with the Work to be done by any trade subcontractor, the Contractor must remove and restack such materials at no additional cost to the City.

3.2 CONTRACTOR'S CONSTRUCTION SUPERINTENDENT:

- A. Contractor's Construction Superintendent: The Contractor must devote its time and personal attention to the Work and must employ and retain at the Project Site, from commencement until Final Acceptance, a Contractor's Construction Superintendent. The Contractor's Construction Superintendent must be registered with the New York City Department of Buildings (DOB) in compliance with the Construction Superintendent Rule of the City of New York, be competent and capable of maintaining proper supervision and care of the Work, and be acceptable to the Commissioner. The Construction Superintendent, in the absence of the Contractor, and irrespective of any superintendent or foreman employed by any subcontractor, must see that the instructions of the Commissioner are carried out.
- B. Replacement: The Contractor's Construction Superintendent on the job must not be changed or removed without the consent of the Commissioner.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.3

3.3 SURVEYS:

- A. Line and Grade: The City will establish a baseline and bench mark near the Site of the Work for use by the Contractor in connection with the performance of the Work.
- B. Responsibility: The Contractor must establish all other lines and elevations required for the Work and must be solely responsible for the accuracy thereof.
- C. Safeguard All Points: The Contractor must safeguard all points, stakes, grade marks and bench marks made or established by the Contractor on the Work. The Contractor must re-establish same if disturbed, and bear the entire expense of rectifying the Work if improperly installed due to not maintaining, protecting or removing without authorization from the Commissioner such established points, stakes, or marks.
- D. City Monuments and Markers: No Work must be performed near City monuments or markers so as to disturb them until the said monuments or markers have been referenced or reset or otherwise disposed of by the relevant Agency or party who installed them.
- E. Foundations: The Contractor must furnish certification from a licensed Surveyor that all portions of the foundation Work are located in accordance with the Contract Drawings and at the elevations required thereby. This certification must show the actual locations and the actual elevations of all the Work in relation to the locations and elevations shown on the Contract Drawings, including, but not restricted to the following:
 - 1. The locations and elevations of all piles, if any.
 - 2. Elevations of tops of all spread footings, tops of pile caps, and tops of all foundation walls, elevator pit walls and ramp walls.
 - 3. Location of all footing centers and pier centers including those for exterior wall columns.
 - 4. Location of all foundation walls including wall columns, elevator pit walls and ramp walls.
- F. Wall Lines: After the first courses of masonry or stone have been laid, the Contractor must establish the permanent lines of exterior walls. The Contractor must promptly furnish certification from a licensed Surveyor in the form of signed original drawings showing the exact location of such wall lines of all portions



of all structures. Except at its own risk, the Contractor must not proceed further with the erection of walls until the Surveyor's certification has been submitted and verified for correct location of wall lines.

- G. Surveyor: The Surveyor selected for any of the purposes mentioned in Paragraph E and Paragraph F above, and Paragraph I below, must be a land Surveyor licensed in the State of New York and must be subject to the approval of the Commissioner. The Surveyor must not be a regular employee of the Contractor, nor must the Surveyor have any interest in the Contract. The Surveyor's certification must represent an independent and disinterested verification of all layout. The Surveyor must report to the Department of Design and Construction's (DDC) Resident Engineer each time upon arrival to and departure from the Site and review with the Resident Engineer the data required for the Project.
- H. Final Certification: Final certification must be submitted upon completion of the Work or upon completion of any subdivision of the Work as directed by the Commissioner. Any exceptions or deviations from the Contract Drawings must be noted on the final certificate and must include any maps, plates, notes, pertinent documents and data necessary, in the opinion of the Commissioner, to constitute a full and complete report.
- I. Final Survey: The Contractor must submit to DDC for submission to DOB a final Survey by the licensed Surveyor showing the location of the new Work, before completion of the Work. This Survey must show the location of the first tier of beams or of the first floor; the finish grades of the open spaces on the plot; the established curb level and the location of all other Work on the plan, together with the location and boundaries of the lot or plot upon which the Work is constructed, curb cuts, all yard dimensions, etc.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.4

3.4 BORINGS:

- A. The work of this article must be the responsibility of the Contractor unless otherwise indicated.
- B. Reference Drawings: The boring drawings as listed on the title sheet are for information to the bidder and are to be used under the conditions as follows:
 - 1. Boring logs: shown on the boring drawings, record information obtained under engineering supervision in the course of exploration carried out by or under the direction of DDC at the Site.
 - 2. Soils and Rock Samples: All inferences are drawn from the indications observed as made by engineering and scientific personnel. All such inferences and all records of the Work, including soil samples and rock cores, if any, are available to bidders for inspection.
 - 3. Certification of Samples: The City certifies that the Work was carried out as stated, and that the soil samples and rock cores were actually taken from the site at the times, places, and in the manner indicated on the boring drawings. The samples are available for inspection in DDC's Subsurface Exploration Unit.
 - 4. Bidder's Responsibility: The bidder, however, is responsible for any conclusions to be drawn from the Work. If the bidder accepts those of the City, it must do so at its own risk. If the bidder prefers not to assume such risk, the bidder is under the obligation of employing its own experts to analyze the available information and must be responsible for any consequences of acting on their conclusions.
 - 5. Continuity Not Guarantee: The City does not guarantee continuity of conditions shown at actual boring locations over the entire Site. Where possible, borings are located to avoid all obstructions and previous construction which can be found by inspection of the surface. The bidder is required to estimate the influence of such features from its own inspection of the Site.



3.5 EXAMINATION:

- A. Existing Conditions: The existence and location of Site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning the Work, the Contractor must investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
 - 1. Before construction, the Contractor must verify the location and points of connection of utility services.
- B. Existing Utilities: The existence and location of underground utilities and other construction indicated as existing are not guaranteed. Before beginning Site Work, the Contractor must investigate and verify the existence and location of underground utilities and other construction affecting the Work.
 - 1. Before construction, the Contractor must verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, water-service piping, and underground electrical services.
 - 2. The Contractor must furnish location data for Work related to the Project that must be performed by public utilities serving the Project Site.
- C. Acceptance of Conditions: Examine all existing substrates, areas, and conditions, with the subcontractor responsible for installation or application, for compliance with requirements for installation tolerances and other conditions affecting performance. The Contractor must record observations of these examinations:
 - 1. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 3. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.6 ENVIRONMENTAL ASSESSMENTS:

- A. City Responsibilities: An Environmental Assessment and survey is performed by DDC and its findings are included in the Contract Documents. In accordance with the NYC Administrative Code Title 15 Chapter 1, an asbestos survey is required to be performed by an Asbestos Investigator certified by the NYC Department of Environmental Protection (DEP) to identify the presence of asbestos containing material (ACM) prior to any alteration, renovation, or demolition activity. The findings of such survey are required for the submission of approvals and permits issued by DOB. When the findings indicate that asbestos containing material is present and will be disturbed during the alteration, renovation, or demolition activity, then abatement design specifications will be incorporated into the Contract Documents. The Contractor must comply with all federal, state and local asbestos regulations affecting the work for this Contract.
- B. Contractor Responsibility: The Contractor must comply with all federal, state and local environmental regulations, including without limitation, United States Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA) regulations, which require the Contractor to assess if lead-based paint will be disturbed during the Work in order to protect the Contractor's workers and the building occupants from migration of lead dust into the air. The Contractor must comply with all federal, state and local environmental waste disposal regulations which may be required during the Work. The Contractor is required to hire licensed abatement and disposal companies for the requisite Work.

3.7 PREPARATION:

- A. Field Measurements: The Contractor must verify all dimensions and conditions on the Site so that all Work will properly join the existing conditions.



- B. Before commencing the Work, the Contractor must examine all adjoining materials on which its Work is in any way dependent on good workmanship in accordance to the intent of the Specifications and the Contract Drawings. The Contractor must report to the Commissioner any condition that will prevent it from performing Work that conforms to the required Specifications.
- C. Existing Utility Information: The Contractor must furnish information to the Commissioner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Additionally, the Contractor must coordinate with authorities having jurisdiction.
- D. Space Requirements: The Contractor must verify space requirements and dimensions of items shown diagrammatically on the Contract Drawings.

3.8 DEFERRED CONSTRUCTION:

- A. In order to permit the installation of any item or items of equipment required to be furnished and installed within the time allowed for completing the Work of the Contract, the Contractor must defer construction Work limited to adequate areas as approved and certified by the Commissioner.
- B. The Contractor must confer with the affected trade subcontractors and ascertain arrangements, time, and facilities necessary to be made by the Contractor in order to execute the provisions specified herein.

3.9 INSTALLATION:

- A. General: The Contractor must locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical Work plumb and make horizontal Work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated on the Contract Drawings.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for Work specified to be factory-prepared and field-installed. Check shop drawings of other work and work of trade subcontractors to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by the Design Consultant.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral



anchors that are to be embedded in concrete or masonry. Deliver such items to Project Site in time for installation.

- H. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.10 PERMITS:

- A. The Contractor must comply with all local, state and federal laws, rules, and regulations affecting the Work of this Project, including, without limitation, (1) obtaining all necessary permits for the performance of the Work prior to commencement thereof, and (2) complying with all requirements for the disposal of demolition and/or construction debris, waste, etc., including disposal in City landfills. The Contractor must be responsible for all costs in connection with such regulatory compliance, unless otherwise specified in the Contract.

3.11 TRANSPORTATION:

- A. Availability: The Contractor must determine the availability of transportation facilities and dockage for the use of its employees, equipment, and materials, and the conditions under which such use will be permitted.
- B. Costs: If transportation facilities and dockage are available and are permitted to be used by the governmental agency having jurisdiction, the Contractor must pay all necessary costs and expenses, and abide by all rules and regulations promulgated in connection therewith.
- C. Vehicles: With respect to the use of vehicles on highways and bridges, the Contractor's attention is directed to the limitations set forth in the Rules of the City of New York, Title 34, Chapter 4, Section 4-15.
- D. Continued Use: It is understood that the Commissioner makes no warranty as to the continued use by the Contractor of such facilities.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.12

3.12 SLEEVES AND HANGERS:

- A. Coordinate with Progress Schedule: The Contractor must promptly furnish and install conduits, outlets, piping sleeves, boxes, inserts and all other materials and equipment that is to be built into the Work in conformity with the requirements of the Project.
- B. Cooperation of Subcontractors: All subcontractors must fully cooperate with each other in connection with the performance of the above Work as "cutting in" new work is neither contemplated nor will it be tolerated.
- C. Timeliness: To avoid delay, in the event that timely delivery of sleeves and other materials cannot be made, the Contractor may arrange to have boxes or other forms set at the locations where the piping or other material is to pass through or into the slabs, walls or other Work. Upon the subsequent installation of the sleeves or other material, the Contractor must fill around them with materials as required by the Contract. The necessary expenditures incurred for the boxing out and filling in must be borne by the Contractor.
- D. Inserts: The Contractor is to install strip inserts four (4) foot on center and perpendicular to beams in ceiling slabs of boiler, machine, and mechanical equipment rooms. Inserts are to be installed for strippable concrete slabs only.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.13

3.13 SLEEVE AND PENETRATION DRAWINGS:

- A. As soon as practicable after the commencement of Work, and when the order in which concrete for the first slabs, walls, etc. to be poured is determined, the Contractor must submit to DDC a sketch indicating the location and size of all penetrations for sleeves, ducts, etc. which will be required to accommodate the mechanical trades in order to determine if such penetrations will materially weaken the Project's structure.



The sketch must be stamped and returned if approved and/or comments will be transmitted. The Contractor must continue to submit sketches as the pouring schedule and the concrete Work progresses and until approvals for the penetration sketches have been given. The Contractor must not predicate its layout Work on unapproved sketches.

3.14 CUTTING AND PATCHING:

- A. Responsibility: The Contractor must do all cutting, patching, and restoration required by its Work, unless otherwise particularly specified in the Specifications.
- B. Restore Work: The Contractor must restore any Work damaged during the performance of the Work.
- C. Competent Workers: All restoration Work must be done to the satisfaction of the Commissioner by competent workers skilled in the trade required by such restoration. If, in the judgment of the Commissioner, workers engaged in restoration Work are incompetent, they must be replaced immediately by competent workers.
- D. Structural Elements: Do not cut and patch structural elements without the prior approval, in writing, of the Resident Engineer.
- E. Operational Elements: Do not cut and patch operating elements and related components.
- F. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the Commissioner's opinion, reduce the building's aesthetic qualities. The Contractor must remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- G. Existing Warranties: The Contractor must remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.
- H. Removals: The Contractor must remove from the premises all demolished materials of every nature or description resulting from cutting, patching, and restoration work, in accordance with the requirements hereinafter stipulated under Sub-Section 3.17 herein and as further required in Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.15

3.15 LOCATION OF PARTITIONS:

- A. Within three (3) weeks after the concrete slabs have been poured on each floor level, the Contractor must immediately locate accurately all of the partitions, including the door openings, on the floor slabs in a manner approved by the Resident Engineer.

3.16 FURNITURE AND EQUIPMENT:

- A. Responsibility: The Contractor is responsible for moving all loose furniture and/or equipment in all areas where the location of such furniture and/or equipment interferes with the proper performance of its Work.
- B. Protection: All such furniture and/or equipment must be adequately protected with dust cloths and returned to their original locations when directed to do so by the Resident Engineer.

3.17 REMOVAL OF RUBBISH AND SURPLUS MATERIALS:

- A. Of the waste that is generated during demolition, as many of the waste materials as economically feasible must be reused, salvaged, or recycled. Waste disposal in landfills must be minimized. Comply with requirements of Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.



- B. Rubbish: Rubbish must not be thrown from the windows or other parts of the Project. Mason's rubbish, dirt and other dust-producing material must be wetted down periodically.
- C. Location: The Contractor must clean the Project Site and Work area daily, sweep up, and deposit at a location designated on each floor, all of its rubbish, debris, and waste materials as it accumulates or more frequently when directed by the Resident Engineer. Wood crating must be broken up, neatly bundled, tied, and stacked ready for removal and be deposited at a location designated on each floor.
 - 1. Comply with requirements in NYC Fire Department for removal of combustible waste materials and debris.
 - 2. Do not hold materials more than seven (7) Days during normal weather or three (3) Days if the temperature is expected to rise above 80 degrees F (27 degrees C).
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- D. Laborers: Since the Contractor is responsible for the removal of all rubbish, etc., from the Site, the Contractor must employ and keep engaged for this purpose an adequate number of laborers.
- E. Surplus Materials: The Contractor must remove from the Site all surplus materials when there is no further use for same.
- F. Tools and Materials: At the conclusion of the Work, all erection plant, tools, temporary structures and materials belonging to the Contractor must be promptly removed.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.

3.18 CLEANING:

- A. The Contractor must thoroughly clean all equipment and materials furnished and installed, and must deliver such materials and equipment undamaged in a clean and new appearing condition up to date of Final Acceptance.
- B. Site: Maintain Project Site free of waste materials and debris.
- C. Installed Work: Keep installed Work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of the product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- D. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- E. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration up to date of Final Acceptance.
- F. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration up to date of Final Acceptance.

3.19 SECURITY AND PROTECTION OF WORK SITE:

- A. Provide protection of installed Work, including appropriate protective coverings, and maintain conditions that ensure installed Work is without damage or deterioration up to date of Final Acceptance.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.
- C. Secure and protect Work and Work Site against damage, loss, injury, theft and/or vandalism.
- D. Maintain daily sign-in sheets of workers and visitors and make the sheets available to the Commissioner.



3.20 MAINTENANCE OF SITE AND ADJOINING PROPERTY:

- A. The Contractor must take over and maintain the Project Site, after order to start Work.
- B. The Contractor must be responsible for the safety of the adjoining property, including sidewalks, paving, fences, sewers, water, gas, electric and other mains, pipes and conduits etc. until the date of Final Acceptance. The Contractor must, at its own expense, except as otherwise specified, protect same and maintain them in at least as good a condition as that in which the Contractor finds them.
- C. All pavements, sidewalks, roads and approaches to fire hydrants must be kept clear at all times, maintained and repaired to serviceable condition with materials to match existing.
- D. Provide and keep in good repair all bridging and decking necessary to maintain vehicular and pedestrian traffic.
- E. The Contractor must also remove all snow and ice as it accumulates on the sidewalks within the Contract Limits Lines.

3.21 MAINTENANCE OF PROJECT SITE:

- A. The Contractor must take over and maintain all Project areas, after order to start Work.
- B. Until the date of Final Acceptance, the Contractor must be responsible for the safety of all Project areas, including water, gas, electric and other mains and pipes and conduits and must, at the Contractor's own expense, except as otherwise specified, protect same and maintain them in at least as good condition as that in which the Contractor finds them.
- C. All pavements, sidewalks, roads and approaches to fire hydrants must be kept clear at all times, maintained, and if damaged, repaired to serviceable conditions with materials to match existing.
- D. The Contractor must keep the space for the Resident Engineer in a clean condition.

3.22 SAFETY PRECAUTIONS FOR CONTROL CIRCUITS:

- A. Control circuits, the failure of which will cause a hazard to life and property, must comply with DOB Bureau of Electrical Control requirements.

3.23 OBSTRUCTIONS IN DRAINAGE LINES:

- A. The Contractor must be responsible for all obstructions occurring in all drainage lines, fittings, and fixtures after the installations and cleaning of these drainage lines, fittings, and fixtures, as certified by the Resident Engineer. Roof drains must be kept clear of any and all debris. Any stoppage must be repaired immediately at the expense of the Contractor.

3.24 PAYMENT OF ALLOWANCES:

- A. Unless otherwise called for in the Specifications, the following requirements apply to the payment and execution of Allowances established for the Contractor:
 - 1. Allowances are to be utilized when ordered and authorized in writing by the Commissioner.
 - 2. The Contractor will be paid on a time and materials (T&M) basis under the Allowance. Labor will be paid based on the Contractor's Certified Payrolls, all other expenses will be paid on an invoice basis. A markup of twelve percent (12%) for overhead and ten percent (10%) for profit will be allowed, except that no markup will be allowed on Payroll Taxes or on the premium portion of overtime pay or on sales and personal property taxes.

END OF SECTION 01 73 00



**SECTION 01 74 19
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**

PART I – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. This section includes administrative and procedural requirements for the management and disposal of construction waste and includes the following requirements:
 - 1. Waste Management Goals
 - 2. Waste Management Plan
 - 3. Progress Reports
 - 4. Progress Meetings
 - 5. Management Plan Implementation
- B. This section includes:
 - 1. Definitions
 - 2. Waste Management Performance Requirements
 - 3. Reference Resources
 - 4. Submittals
 - 5. Quality Assurance
 - 6. Waste Plan Implementation
 - 7. Additional Demolition and Salvage Requirements
 - 8. Disposal

1.3 RELATED SECTIONS: Include without limitation the following:

- A. Section 01 10 00 SUMMARY
- B. Section 01 31 00 PROJECT MANAGEMENT AND COORDINATION
- C. Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION
- D. Section 01 73 00 EXECUTION
- E. Section 01 77 00 CLOSEOUT PROCEDURES
- F. Section 01 78 39 CONTRACT RECORD DOCUMENTS
- G. Refer to the Addendum to identify whether this Project is designed to comply with a Certification Level according to the U.S. Green Building Council's LEED Rating System, as specified in Section 01 81 13.03 "SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v3 BUILDINGS" or Section 01 81 13.04 "SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v4 BUILDINGS".

1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.



<u>Term</u>	<u>Definition</u>
Alternative Daily Cover (ADC)	Material other than earthen material placed on the surface of the active face of a municipal solid Waste landfill at the end of each Work Day to control vectors, fires, odors, blowing litter and scavenging.
Design Consultant	The entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the Design Consultant may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.
Clean	Untreated and unpainted; not contaminated with oils, solvents, caulk or the like.
Construction and Demolition (C&D) Waste	Solid Wastes typically including building materials, trash debris and rubble resulting from remodeling, repair and demolition operations. Hazardous materials and land clearing Waste are not included.
Diversion from Landfill	Material removal from the Site for Recycling, Reuse or Salvage that might otherwise be sent to a landfill.
Recyclable	The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product.
Recycle (recycling)	To sort, separate, process, treat or reconstitute solid Waste and other discarded materials for the purpose of redirecting such materials into the manufacture of useful products. Recycling does not include burning, incinerating or thermally destroying Waste.
Return	To give back Reusable items or unused products to vendors.
Reuse	To reuse excess or discarded construction material in some manner on the Project Site.
Salvage	To remove a Waste material from the Project Site for resale or reuse.
Waste	Extra material or material that has reached the end of its useful life in its intended use. Waste includes Salvageable, Returnable, Recyclable and Reusable material.
Waste Management Plan	A Project-related plan for the collection, transportation and disposal of Waste generated at the construction Site. The purpose of the plan is to ultimately reduce the amount of material becoming landfill.
Waste-to-Energy	The conversion of non-Recyclable Waste materials into usable heat, electricity or fuel through a variety of processes, including combustion, gasification, pyrolyzation, anaerobic digestion and landfill gas recovery.



1.5 WASTE MANAGEMENT PERFORMANCE REQUIREMENTS:

- A. The City of New York has established that this Project must generate the least amount of Waste possible and employ processes that ensure the generation of as little Waste as possible due to error, inaccurate planning, breakage, mishandling, contamination, or other factors.
- B. Of the Waste that is generated during demolition, as many of the Waste materials as economically feasible, and as stated here, must be Reused, Salvaged, or Recycled. Waste disposal in landfills must be minimized.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 1.5 C

- C. LEED CERTIFICATION: The City of New York will seek Leadership in Energy and Environmental Design (LEED) certification for this Project as indicated in the Addendum to the General Conditions from the U.S. Green Building Council. The documentation required here will be used for this purpose. LEED awards points for a variety of sustainable design measures on a project, one of which is the Reuse and Recycling of project Waste.
- D. DIVERSION REQUIREMENTS. With the exception of LEED v4 projects with demolition ADC Waste, a minimum of seventy-five percent (75%) of total Project demolition and construction Waste (by weight) must be diverted from landfill. LEED v4 projects with demolition ADC Waste must divert a minimum of fifty percent (50%) of total Project demolition and construction Waste (by weight) from landfill. The following Waste categories are likely candidates to be included in the diversion plan as applicable for this Project:
 - 1. Concrete;
 - 2. Bricks;
 - 3. Concrete masonry units (CMU);
 - 4. Asphalt;
 - 5. Metals (e.g. banding, stud trim, ceiling grid, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized, stainless steel, aluminum, copper, zinc, brass, bronze);
 - 6. Clean dimensional wood;
 - 7. Carpet and pad;
 - 8. Drywall;
 - 9. Ceiling tiles;
 - 10. Cardboard, paper and packaging; and
 - 11. Reuse items indicated on the Contract Drawings and/or elsewhere in the Specification.
- E. All fluorescent lamps, High Intensity Discharge lamps and mercury-containing thermostats removed from the Site must be Recycled. Do not use bulb crusher on Site.
- F. Recycling on the job, subject to the Commissioner's approval, is encouraged on the Site itself, such as the crushing and reuse of removed sound concrete and stone. Include these categories in the Waste Management Plan.
- G. Land-clearing debris is not considered construction, demolition or renovation Waste and is not to be included as contribution to Waste diversion.



- H. A minimum of five (5) material types, both structural and nonstructural, are to be identified in the Construction Waste Management Plan for diversion.
- I. For LEED v4 projects, material to be used as ADC does not qualify as material diverted from disposal.

1.6 REFERENCES, RESOURCES:

- A. DDC encourages its contractors to seek information from websites and experts in Salvage or Recycling in order to minimize disposal costs. There are numerous opportunities to sell, Salvage, or to donate materials and accrue tax benefits (which would accrue to the Contractor); there are also outlets that will pick up, and in some cases, buy Recyclable materials. Examples of information resources are as follows:
 - 1. DDC's Sustainable Design website: <https://www1.nyc.gov/site/ddc/about/sustainable-design.page>. A standard Construction and Demolition (C&D) Waste Management Log form is included at the end of this section.
 - 2. Web Resources (information only; no warranty or endorsement is implied):
 - a. www.wastematch.org – Website of New York Waste Match, a materials exchange database and service.
 - b. www.bignyc.org – Website of Build It Green NYC, a non-profit outlet for Salvaged and surplus building materials.
 - c. www.usgbc.org – Website of the United States Green Building Council, with a description of the LEED certification process and requirements for C&D Waste Recycling.
 - d. <http://www.epa.gov/epawaste/index.htm> – Website of the U.S. Environmental Protection Agency (EPA) that discusses C&D Waste issues, and links to other resources.
 - 3. Waste-to-Energy Facilities that need to comply with European Standard (EN) for Waste management and emissions into air, soil, surface water and groundwater:
 - a. www.ec.europa.eu/environment/waste/framework/index.htm – European Commission Waste Framework Directive 2008/98/EC.
 - b. http://www.europa.eu/legislation_summaries/environment/waste_management – European Commission Waste Incineration Directive 2000/76/EC.
 - c. www.cen.eu/cen/Products – EN Standards 303-1, 303-2, 303-3, 303-4, 303-5, 303-6, 303-7.

1.7 SUBMITTALS:

- A. The Contractor must refer to Section 01 33 00 SUBMITTAL PROCEDURES for submittal requirements.
- B. The Contractor must be responsible for the development and implementation of a Waste Management Plan for the Project. The Contractor's subcontractors must assist in the development of that Plan, and collect and deposit their Waste and Recyclable materials in accordance with the approved Plan.
- C. Draft Waste Management Plan: Within fifteen (15) Days after receipt of the Notice to Proceed (NTP), or prior to any Waste removal, whichever occurs sooner, the Contractor must submit to the Commissioner a Draft Waste Management Plan. Include separate sections for C&D Waste. The Plan must demonstrate how the performance goals will be met, and contain the following:
 - 1. List of materials targeted for Reuse, Salvage, or Recycling, and names, addresses, and phone numbers of receiving facilities/companies that will be purchasing or accepting each material.



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2. Description of on-Site and/or off-Site sorting methods for all materials to be removed from Site.
 3. If mixed C&D Waste is to be sorted off-Site, provide a letter from the processor stating the average percentage of mixed C&D Waste they Recycle.
 4. Landfill information: Names of landfills where non-Recyclable/reusable/salvageable Waste will be disposed, and list of applicable tipping fees.
 5. Material handling procedures: Specify whether materials must be separated or commingled and describe the planned diversion strategies. Describe expected amount of each material type, where materials must be taken and how the Recycling facility must process the material. Provide a description of the means by which any Recyclable, Salvaged, or Reused materials will be protected from contamination and collected in a manner that will meet the requirements for acceptance by the designated Recycling processors.
 6. Transportation: A description of the means of transportation and destination for Recycled materials.
 7. Meetings: Regular meetings must be held monthly, or as directed by the Commissioner, and the Contractor must provide a description of these meetings to address Waste management.
 8. Sample spreadsheet and description of how the implementation of the Plan will be documented and submitted on a monthly basis.
- D. Final Waste Management Plan: Within fifteen (15) Days of Commissioner's approval of the Draft Waste Management Plan, the Contractor must submit a Final Waste Management Plan.
- E. Progress Reports: The Contractor must submit a monthly Waste Management Progress Report, containing the following information:
1. Project title, name of company completing report, and dates of period covered by the report.
 2. Report on the disposal of all Project Site Waste. A DDC C&D Waste Management Log form is included at the end of this section. For each shipment of material removed from the Site, provide the following:
 - a. Date and ticket number of removal;
 - b. Identity of material hauler;
 - c. Material category;
 - d. Total quantity of Waste, in tons/cubic yards, by type;
 - e. Quantity of Waste Salvaged, Recycled and/or Reused, by type;
 - f. Total quantity of Waste diverted from landfill (Recycled, Salvaged, Reused) as a percentage of total Waste; and
 - g. Recipient of each material type.
 3. Provide monthly and cumulative Project totals of Waste, quantity diverted, and percentage diverted.
 4. Note that the unit of measurement may be either tons or cubic yards, but must be consistent for all shipments and all materials throughout the Project. Reports with inconsistent or mixed units will not be reviewed and will be Returned for re-submission.



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5. Include legible copies of on-Site logs, weight tickets and receipts. Receipts must be from charitable organizations, Recycling and/or disposal site operators who can legally accept the materials for the purpose of reuse, Recycling or disposal. Contractor must save such original documents for the life of the Project plus seven (7) years.
- F. LEED Submittal: For LEED-designated projects, submit final LEED construction Waste report signed by the Contractor, tabulating total Waste material, quantities diverted and means by which it is diverted, and statement that requirements for the credit have been met. Waste report must include:
 1. At least four (4) material streams for diverted materials;
 2. Documentation of Recycling rates for commingled facilities; and
 3. For Waste-to-Energy strategy, submit documentation of facility adherence to relevant EN standards, and justification for the strategy.
- G. Refrigerant Recovery: Where refrigerant is recovered, submit statement of refrigerant recovery, which must include:
 1. Name, address, qualification data and signature of the refrigerant recovery technician responsible for recovering refrigerant;
 2. Statement that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations; and
 3. Date refrigerant was recovered.

1.8 QUALITY ASSURANCE:

- A. The Contractor must designate a Construction Waste Management Representative to ensure compliance with this section. The Representative must be present at the Project Site full-time and for the duration of the Project.
- B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- C. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- D. Waste Management Plans, documentation, and implementation must be discussed at the following meetings:
 1. Pre-demolition kick-off meeting;
 2. Pre-construction kick-off meeting;
 3. Regular job-site meetings; and
 4. Contractor toolbox meetings.
- E. For LEED v4 projects, Waste-to-Energy Facilities: Comply with EN standards for Waste management and emissions into air, soil, surface water, and groundwater.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION

3.1 WASTE PLAN IMPLEMENTATION:



- A. Prior to the demolition and construction start, the Contractor must implement the Waste Management Plan, coordinate the Plan with all affected trades, and designate one individual as the Construction Waste Management Representative. The Representative will be responsible for communicating the progress of the Plan with the Commissioner on a regular basis and for assembling the required LEED documentation.
- B. The Contractor must be responsible for the provision of containers and the removal of all Waste, non-Returned surplus materials and rubbish from the Site in accordance with the approved Waste Management Plan. The Contractor must oversee and document the results of the Plan. Monies received for Salvaged materials must remain with the Contractor, except the monies for those items specifically identified elsewhere in the specifications or indicated on the Contract Drawings as belonging to others.
- C. Responsibilities of subcontractors: Each subcontractor must be responsible for collecting its Waste, non-Returned surplus materials and rubbish, in accordance with the Waste Management Plan.
- D. Distribution: The Contractor must distribute copies of the Waste Management Plan to each subcontractor, Resident Engineer, Construction Manager, and the Commissioner.
- E. Instruction: The Contractor must provide on-Site instruction of proper Waste management procedures to be used by all parties at appropriate stages of the Project.
- F. Procedures: Conduct Waste management operations to ensure minimum interference with Site vegetation, roads, streets, walkways and other adjacent, occupied, and used facilities. The waste management operations include, but are not limited to:
 - 1. Collect commingled Waste and/or separate all Recyclable Waste in accordance with the Plan. Specific areas on the Project Site are to be designated, and appropriate containers and bins clearly marked with acceptable and unacceptable materials.
 - 2. Inspect containers and bins for contamination and remove contaminated materials if found.
 - 3. Comply with the General Conditions for controlling dust and dirt, environmental protection, and noise control.

3.2 ADDITIONAL DEMOLITION AND SALVAGE REQUIREMENTS:

- A. Demolition and Salvage of additional items indicated in other sections of the Project Specifications require special attention as part of the overall seventy-five percent (75%) Diversion from Landfill. Specific requirements for special attention are designated in other sections of the Project Specifications.

3.3 DISPOSAL:

- A. General: Except for items or material to be Salvaged, Recycled, or otherwise Reused, remove Waste material from the Project Site and legally dispose of them in a manner acceptable to authorities having jurisdiction.
 - 1. Except as otherwise specified, do not allow Waste materials that are to be disposed of to accumulate on Site.
 - 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn Waste materials.
- C. Disposal: Transport Waste materials off Project Site and legally dispose of them.

END OF SECTION 01 74 19



Project Name: _____
Project I.D.: _____

Contractor: _____
Prepared by: _____
For Month: _____

Notes:

1. Volume (cubic yards) may be used instead of weight if used for ALL amounts and ALL materials.
 2. Includes concrete; bricks; concrete masonry units (CMU); asphalt; metals; clean dimensional wood; carpet and pad; drywall; ceiling tiles; cardboard, paper, and packaging; and any other Reuse items indicated on the Contract Drawings and/or elsewhere in the Specifications.
 3. Excluded material includes soil or land clearing debris and for LEED v4 projects, Alternative Daily Cover (ADC) such as screen fines and 6" minus.
 4. Diverted material includes Recycled and Reused material diverted from landfill. Recycled material is reprocessed into new products. Reused material is reclaimed, Salvaged or otherwise used in its original form, either on-site or off-site.
- * These items must be listed in order to receive LEED credit.



**SECTION 01 77 00
CLOSEOUT PROCEDURES**

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. This section includes administrative and general procedural requirements for Closeout Procedures, including, without limitation, the following:
 - 1. Definitions
 - 2. Substantial Completion
 - 3. Final Acceptance
 - 4. Warranties
 - 5. Final Cleaning
 - 6. Repair of the Work
- B. LEED: Refer to the Addendum to identify whether this Project is designed to comply with a Certification Level according to the U.S. Green Building Council's (USGBC) Leadership in Energy & Environmental Design (LEED) Rating System, as specified in Section 01 81 13.03 "SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v3 BUILDINGS" or Section 01 81 13.04 "SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v4 BUILDINGS".
- C. COMMISSIONING: Refer to the Addendum to identify whether this Project will be commissioned by an independent third party under separate contract with the City of New York. Commissioning must be in accordance with ASHRAE and USGBC LEED- NC procedures, as described in Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS. The Contractor must cooperate with the commissioning agent and provide whatever assistance is required.

1.3 RELATED SECTIONS: include without limitation the following:

- A. Section 01 10 00 SUMMARY
- B. Section 01 33 00 SUBMITTAL PROCEDURES
- C. Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT & DISPOSAL
- D. Section 01 78 39 CONTRACT RECORD DOCUMENTS
- E. Section 01 79 00 DEMONSTRATION AND OWNER'S PRE-ACCEPTANCE ORIENTATION

1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.



<u>Term</u>	<u>Definition</u>
Design Consultant	The entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the Design Consultant may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.5 SUBSTANTIAL COMPLETION:

- A. Preliminary Procedures: Before requesting inspection to determine the date of Substantial Completion, the Contractor must complete and supply all items required by the Contract Specifications, General Conditions, Addendum to the General Conditions, change orders or other directives from the Commissioner's representatives. The required items will include all Contract requirements for Substantial Completion, including, but not limited to, items related to releases, regulatory approvals, warranties and guarantees, record documents, testing, demonstration and orientation, final clean up and repairs, and all specific checklist of items by the Resident Engineer. (See Attachment "A" at the end of this section for sample requirements for Substantial Completion).
- B. The Contractor must prepare and submit a list to the Resident Engineer of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
- C. Inspection: The Contractor must submit to the Resident Engineer a written request for inspection for Substantial Completion. Within ten (10) Days of receipt of the request, the Resident Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. The Resident Engineer may request the services, as required, of the Design Consultant, client agency representative and/or other entities having involvement with the Work to assist in the inspection of the Work. If the Resident Engineer makes a determination that the Work is Substantially Complete and approves the Final Approved Punch List and the date for Final Acceptance, he/she will so advise the Commissioner and recommend issuance of the Certificate of Substantial Completion. If the Resident Engineer determines that the Work is not substantially complete, he/she will notify the Contractor of those items that must be completed or corrected before the Certificate of Substantial Completion will be issued.
 - 1 Re-inspection: Contractor must request re-inspection when the Work identified in previous inspections as incomplete are completed or corrected.
 - 2 Results of completed inspection will form the basis of the requirements for Final Acceptance.

1.6 FINAL ACCEPTANCE:

- A. Preliminary Procedures: Before requesting final inspection for Final Acceptance of the Work, the Contractor must complete the following. (Note that the following are to be completed, submitted as appropriate, and approved by the Commissioner, as applicable, prior to the final inspection and are not to be submitted for approval or otherwise at the final inspection unless specifically indicated). List exceptions in the request.
 - 1. Verify that all required submittals have been provided to the Commissioner including, but not limited to, the following:
 - a. Manufacturer's cleaning instructions;
 - b. Posted instructions;
 - c. As-built Contract Documents (Drawings, Specifications, and product data) as described in Section 01 78 39, CONTRACT RECORD DOCUMENTS, incorporating any changes required



- by the Commissioner as a result of the review of the submission prior to the pre-final inspection;
- d. Operation and maintenance manuals, including preventive maintenance, special tools, repair requirements, parts list, spare parts list, and operating instructions;
 - e. Completion of required demonstration and orientation, as applicable, of designated personnel in operation and maintenance of systems, sub-systems and equipment;
 - f. Applicable LEED Building submittals as described in Section 01 81 13.03, SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v3 BUILDINGS or Section 01 81 13.04 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v4 BUILDINGS; and
 - g. Construction progress photographs as described in Section 01 32 33, PHOTOGRAPHIC DOCUMENTATION.
- 2. Submit a certified copy of the Final Approved Punch List of items to be completed or corrected. The certified copy of the Punch List must state that each item has been completed or otherwise resolved for acceptance, and must be endorsed and dated by the Contractor.
 - 3. Submit pest-control final inspection report and survey as required in Section 01 50 00, TEMPORARY FACILITIES AND CONTROLS.
 - 4. Submit record documents and similar final record information.
 - 5. Deliver tools, spare parts, extra stock and similar items.
 - 6. Complete final clean-up requirements including touch-up painting of marred surfaces.
 - 7. Submit final meter readings for utilities, as applicable, a measured record of stored fuel, and similar data as of the date when the City took possession of and assumed responsibility for corresponding elements of the Work.
- B. Final Inspection: The Contractor must submit to the Resident Engineer a written request for inspection for Final Acceptance of the Work. Within ten (10) Days of receipt of the request, the Resident Engineer will either proceed with inspection or notify the Contractor of unfulfilled requirements. The Resident Engineer may request the services, as required, of the Design Consultant, client agency representative and/or other entities having involvement with the Work to assist in the inspection of the Work. If the Resident Engineer finds that all items on the Final Approved Punch List are complete and no further Work remains to be done, he/she will so advise the Commissioner and recommend the issuance of the determination of Final Acceptance. If the Resident Engineer determines that the Work is not complete, he/she will notify the Contractor of those items that must be completed or corrected before the determination of Final Acceptance will be issued.
- C. Final Acceptance: The Work will be accepted as final and complete as of the date of the Resident Engineer's inspection if, upon such inspection, the Resident Engineer finds that all items on the Final Approved Punch List are complete and no further Work remains to be done. The Commissioner will then issue a written determination of Final Acceptance.

1.7 WARRANTIES:

- A. Schedule B of the Addendum lists the items of materials and/or equipment for which manufacturer warranties are required. For each item of material and/or equipment listed in Schedule B, the Contractor must obtain a written warranty from the manufacturer. Such warranty must provide that the material or equipment is free from defects for the period set forth in Schedule B and will be replaced or repaired within such specified period. The Contractor must deliver all required warranties to the Commissioner.
- B. Unless indicated otherwise, warranties are to take effect on the date of Substantial Completion.



- C. Submittal Time: Submit written warranties on request of the Commissioner for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- D. Partial Occupancy: Submit properly executed warranties to the Commissioner within fifteen (15) Days of completion of designated portions of the Work that are completed and occupied or used by the City.
- E. Organize the warranty documents into an orderly sequence based on the Project Specification Divisions and Section Numbers.
 - 1. Bind warranties in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES"; name and location of Project; Capitol Budget Project Number (FMS ID); and Contractor's and applicable subcontractor's name and address.
 - 3. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation.
 - 4. Provide a typed description of each product or installation being warranted, including the name of the product, and the name, address, and telephone number of the installer.
- F. When warranted materials and/or equipment require operation and maintenance manuals, provide additional copies of each required warranty in each required manual. Refer to Section 01 78 39, CONTRACT RECORD DOCUMENTS, for requirements of operation and maintenance manuals.

PART II – PRODUCTS

2.1 MATERIALS:

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART III – EXECUTION

3.1 FINAL CLEANING:

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations, as applicable, before requesting inspection for Final Acceptance of the Work for the entire Project or for a portion of the Project:
 - a. Clean Project Site, yard, and grounds in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project Site.
 - e. Remove snow and ice to provide safe access to building.



- f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.
 - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
 - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - k. Remove labels that are not permanent.
 - l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
 - m. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - n. Replace parts subject to unusual operating conditions.
 - o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - q. Clean ducts, blowers, and coils if units were operated without filters during construction.
 - r. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
 - s. Leave Project clean and ready for occupancy.
 - t. Construction Waste Disposal: Comply with waste disposal requirements in Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.
- C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests, as required in Section 01 50 00, TEMPORARY FACILITIES, SERVICES AND CONTROLS. Prepare and submit a pest control report to the Commissioner.
- D. Comply with all applicable safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on City's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project Site and dispose of lawfully.

3.2 REPAIR OF THE WORK:

- A. Subject to the terms of the Contract, the Contractor must complete repair and restoration operations before requesting inspection for determination of Substantial Completion.



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- B. Contractor must repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
 4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION 01 77 00



SECTION 01 77 00

ATTACHMENT 'A'

The following list is a general sample of Substantial Completion requirements, including, but not limited to:

1. Prepare and submit a list to the Resident Engineer of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
2. Obtain and submit any necessary releases enabling the City unrestricted use of the Project and access to services and utilities.
3. Regulatory Approvals: Submit all required documentation from applicable governing authorities, including, but not limited to, the New York City Department of Buildings (DOB); Department of Transportation (DOT); Department of Environmental Protection (DEP); Fire Department (FDNY); etc. Documentation includes, but is not limited to, the following:
 - a. Building permits, applications and sign-offs;
 - b. Permits and sign-off for construction fences; sidewalk bridges; scaffolds, cranes and derricks; utilities; etc.;
 - c. Certificates of inspections and sign-offs;
 - d. Required certificates and use permits; and
 - e. Certificate of Occupancy (C.O.), Temporary Certificate of Occupancy (T.C.O.) or Letter of Completion as applicable.
4. Submit specific warranties required by the Specifications, final certifications, and similar documents.
5. Prepare and submit Contract Documents as described in Section 01 78 39, CONTRACT RECORD DOCUMENTS, including but not limited to:
 - a. Approved documentation from governing authorities;
 - b. As-built record drawings and Specifications; product data; operation and maintenance manuals;
 - c. Final Completion construction photographs;
 - d. Damage or settlement surveys;
 - e. Final property surveys; and
 - f. Similar final record information.
 - g. The Resident Engineer will review the submission and provide appropriate comments. If comments are significant, the initial submission will be returned to the Contractor for correction and re-submission incorporating the comments prior to the Final Inspection.
6. Record Waste Management Progress Report: Submit Construction & Demolition (C&D) Waste Management logs, with legible copies of weight tickets and receipts required in accordance with Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.
7. If applicable submit LEED letter template in accordance with the requirements of Section 01 81 13.03, SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v3 BUILDINGS or Section 01 81 13.04 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v4 BUILDINGS.



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8. Schedule applicable demonstration and orientation required in other sections of the Project Specifications and as described in Section 01 79 00, DEMONSTRATION AND OWNER'S PRE-ACCEPTANCE ORIENTATION.
9. Deliver tools, spare parts, extra materials, and similar items to location designated by Resident Engineer. Label with manufacturer's name and model number where applicable.
10. Make final changeover of permanent locks and deliver keys to the Resident Engineer. Advise Commissioner of changeover in security provisions.
11. Complete startup testing of systems as applicable.
12. Submit approved test/adjust/balance records.
13. Terminate and remove temporary facilities from Project Site, along with mockups, construction tools, and similar elements as directed by the Resident Engineer.
14. If applicable, complete Commissioning requirements as defined in Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS and/ or Section 01 91 15, BUILDING ENCLOSURE COMMISSIONING REQUIREMENTS.
15. Complete final cleaning requirements, including touchup painting.
16. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.



**SECTION 01 78 39
CONTRACT RECORD DOCUMENTS**

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. This section includes administrative and general procedural requirements for Contract Record Documents, including:
1. Contract Record Drawings
 2. Record Specifications, Addenda and Change Orders
 3. Record Product Data
 4. Record Sample Submittal
 5. Construction Record Photographs
 6. Operating and Maintenance Manuals
 7. Final Site Survey
 8. Demonstration and Orientation DVD
 9. Guarantees and Warranties
 10. Waste Disposal Documentation
 11. LEED Materials and Matrix
 12. Miscellaneous Record Submittals
- B. The Department of Design and Construction (DDC), at the start of construction (kick-off meeting), will furnish to the Contractor, at no cost, a complete set of Contract Record Drawings Mylars (reproducible) pertaining to the Work to be performed under the Contract. It is the responsibility of the Contractor to modify the Contract Drawings to indicate all changes and corrections, if any, occurring in the Work as actually installed. The Contractor is required to furnish all other Mylar (reproducible) drawings, if necessary, such as Addenda Drawings and Supplementary Drawings as may be necessary to indicate all Work in detail as actually completed. All professional seals must be blocked out. Title box complete with Project title and Design Consultants' names will remain.
- C. Maintenance of Documents and Samples: The Contractor must maintain, during the progress of the Work, an accurate record of the Work as actually installed, on Contract Record Drawings Mylars in ink (reproducible). Store Contract Record Documents and samples in the field office apart from the Contract Documents used for construction. Do not use Contract Record Documents for construction purposes. Maintain Contract Record Documents in good order and in a clean, dry, legible condition. Make documents and samples available at all times for the Resident Engineer's inspections.
1. The Contractor's attention is particularly directed to the necessity of keeping accurate records of all subsurface and concealed Work, so that the Contract Record Drawings contain this information in exact detail and location. Contract Record Drawings must also show all connections, valves, gates, switches, cut-outs and similar operating equipment.



2. For projects designated to achieve a Leadership in Energy and Environmental Design (LEED) rating, the Contractor will receive a copy of the Project's LEED scorecard for the purpose of monitoring compliance with the target objectives and to facilitate coordination with the LEED Consultant. The Contractor will receive periodic updates of this scorecard and is required to submit the final version of the Scorecard at Substantial Completion with other Project Record Documents.

1.3 RELATED SECTIONS: include without limitation the following:

- | | | |
|----|------------------|-------------------------------------|
| A. | Section 01 10 00 | SUMMARY |
| B. | Section 01 32 00 | CONSTRUCTION PROGRESS DOCUMENTATION |
| C. | Section 01 32 33 | PHOTOGRAPHIC DOCUMENTATION |
| D. | Section 01 33 00 | SUBMITTAL PROCEDURES |
| E. | Section 01 77 00 | PROJECT CLOSEOUT PROCEDURES |

1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

<u>Term</u>	<u>Definition</u>
Commissioning Authority / Commissioning Agent (CxA)	The entity responsible for providing commissioning services for the Project. The entity serving as the CxA may be either an employee(s) of the City or an entity engaged by the City to provide such services.
Design Consultant	The entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the Design Consultant may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.
LEED Consultant	The entity responsible for providing LEED sustainability services for the Project. The entity serving as the LEED Consultant may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.5 SUBMITTALS:

- A. As-Built Contract Record Drawings: The Contractor must comply with the following:
 1. Progress Submission: As directed by the Resident Engineer, submit progress as-built Contract Record Drawings at the fifty percent (50%) construction completion stage.
 2. Final Submission: Before Substantial Completion payment, the Contractor must furnish to the Commissioner one (1) complete set of marked-up Mylar (reproducible) as-built Contract Record Drawings, in ink indicating all of the Work and locations as actually installed, plus one (1) set of paper prints which will be furnished to the sponsoring agency by DDC.
 3. As-built Contract Record Drawings must be of the same size as that of the Contract Drawings, with a one (1) inch margin on three (3) sides and a two (2) inch margin on the left side for binding.
 4. Each as-built Contract Record Drawing must bear the legend "AS-BUILT CONTRACT RECORD DRAWING" in heavy block lettering, one half (1/2) inch high, and contain the following data:



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AS-BUILT CONTRACT RECORD DRAWING

Contractor's Name _____
Contractor's Address _____
Subcontractor's Name (where applicable) _____
Subcontractor's Address _____
Made by: _____ Date _____
Checked by: _____ Date _____

Commissioner's Representatives
(Resident Engineer) DDC
(Plumbing Inspector) DDC
(Heating & Ventilating Inspector) DDC
(Electrical Inspector) DDC

5. Contract Record Drawing Title Sheet: The Contractor must prepare a title sheet, the same size as the Contract Record Drawings, which must contain the following:
 - a. Heading:

The City of New York
Department of Design and Construction
Division of Public Buildings
 - b. Capital Budget Project Number (FMS ID)
 - c. Name and Location of Project
 - d. Contractor's Name and Address
 - e. Subcontractor's Name and Address (where applicable)
 - f. Record of changes (a caption description of work affected, and the date and number of change order or other authorization)
 - g. List of Record Drawings
- B. Record Specifications, Addenda and Change Order: Submit to the Commissioner two (2) copies each of marked-up Record Specifications, Addenda and change orders.
- C. Record Product Data: Submit to the Commissioner two (2) sets of Record Product Data.
- D. Record Construction Photographs: Submit to the Commissioner final as-built construction photographs and negatives of the completed Work as described in Section 01 32 33, PHOTOGRAPHIC DOCUMENTATION.
- E. Operating and Maintenance Manuals:
 1. Submit three (3) copies each of preliminary manuals to the Resident Engineer for review and approval. The Contractor must make such corrections, changes and/or additions to the manual until deemed satisfactory by the Resident Engineer. Deliver three (3) copies of the final approved manuals to the Resident Engineer for distribution.
 2. Commissioning: Comply with the requirements of Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS, as well as the requirements set forth in sections of the Project Specifications, for projects designated for commissioning. Submit four (4) copies each of data designated to be included in the commissioning operation and maintenance manual to the Resident Engineer. The Resident Engineer will forward such data to the Commissioning Authority/Agent (CxA) for review and comment. The Contractor must make such corrections, changes and/or additions to the data until deemed satisfactory and deliver four (4) copies of the final data to the Resident Engineer for use by the CxA to prepare the commissioning operation and maintenance manual.
 - a. Non-Commissioning Data: All remaining data not designated for commissioning and required as part of maintenance and operation manual must be prepared and assembled in accordance with the requirements of this section for operating and maintenance manuals.



- F. Final Site Survey: Submit Final Site survey as described in Section 01 73 00, EXECUTION, in quantities requested by the Commissioner, signed and sealed by a Land Surveyor licensed in the State of New York.
- G. Guarantees and Warranties.
- H. Waste Disposal Documents and Miscellaneous Record Documents.

PART II – PRODUCTS

2.1 CONTRACT RECORD DRAWINGS:

- A. Record Prints: The Contractor must maintain one (1) set of blue- or black-line white prints as applicable of the Contract Record Drawings and Shop Drawings. If applicable, the Contract Record Drawings and Shop Drawings must incorporate the arrangement of the Work based on the accepted master coordination drawing(s) as described in Section 01 33 00, SUBMITTAL PROCEDURES.
 - 1. Preparation: The Contractor must mark record drawings to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - 2. Change Orders: All changes from Contract Drawings must be distinctly encircled and identified by change order number correlating to changes listed on the "Title Sheet." The Contractor must show within the encircled areas the work as actually installed.
- B. Content: Types of items requiring marking include, but are not limited to, the following:
 - 1. Dimensional changes to Contract Record Drawings;
 - 2. Revisions to details shown on Contract Record Drawings;
 - 3. Depths of foundations below first floor;
 - 4. Locations and depths of underground utilities;
 - 5. Revisions to routing of piping and conduits;
 - 6. Revisions to electrical circuitry;
 - 7. Actual equipment locations;
 - 8. Duct size and routing;
 - 9. Locations of concealed internal utilities;
 - 10. Changes made by change order;
 - 11. Changes made following Commissioner's written orders;
 - 12. Details not on the original Contract Drawings;
 - 13. Field records for variable and concealed conditions; and
 - 14. Record information on the Work that is shown only schematically.
- C. Progress Record Mylar's (reproducible): As directed by the Resident Engineer, at fifty percent (50%) construction completion, review marked-up Record Prints with the Resident Engineer and the Design Consultant. When directed by the Resident Engineer, transfer progress mark-ups to a full set of Mylar's (reproducible) and submit one (1) blue line or black line record copy to the Resident Engineer. The marked-up Mylar's (reproducible) must be retained by the Contractor for completion of mark-up and final submission.
- D. Final Contract Record Mylar's (reproducible): Immediately before final inspection for the Certificate of Substantial Completion, review marked-up record prints with the Resident Engineer and the Design



Consultant. When authorized, complete mark-up of a full set of corrected Mylar drawings (reproducible) of the Contract Drawings.

1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.
2. Refer instances of uncertainty to Resident Engineer for resolution.
3. Print the as-built Contract Record Drawings and Shop Drawings for use as record transparencies as described in Sub-Section 1.5.

2.2 RECORD SPECIFICATIONS, ADDENDA AND CHANGE ORDERS:

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, Addenda, and Contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Record the name of manufacturer, supplier, installer, and other information necessary to provide a record of selections made.
 4. For each principal product, indicate whether record product data has been submitted in operation and maintenance manuals instead of submitted as record product data.
 5. Note related change orders and Contract Record Drawings where applicable.
 6. Upon completion of mark-up, submit two (2) complete copies of the marked-up record Specifications to the Commissioner.

2.3 RECORD PRODUCT DATA:

- A. Preparation: Mark product data to indicate the actual product installation where installation varies substantially from that indicated in product data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project Site and changes in manufacturer's written instructions for installation.
 3. If possible, a change order proposal should include resubmitting updated product data. This eliminates the need to mark up the previous submittal.
 4. Note related change orders and Contract Record Drawings where applicable.
 5. Upon completion of mark-up, submit to the Commissioner two (2) sets of the marked-up record product data.
 6. Where record product data is required as part of maintenance manuals, submit marked-up product data as an insert in the manual instead of submittal as record product data.

2.4 RECORD SAMPLE SUBMITTAL:

- A. Prior to the date of Substantial Completion, the Contractor must meet with the Resident Engineer at the Site to determine which of the samples maintained during the construction period must be transmitted to the Commissioner for record purposes.



- B. Comply with the Resident Engineer's instructions for packaging, identification marking, and delivery to DDC. Dispose of other samples as specified for disposal of surplus and waste material.

2.5 CONSTRUCTION RECORD PHOTOGRAPHS:

- A. The Contractor must submit the final completion construction photographs, in compliance with Section 01 32 33 PHOTOGRAPHIC DOCUMENTATION.

2.6 OPERATING AND MAINTENANCE MANUALS:

- A. The Contractor must provide preliminary and final versions of operating and maintenance manuals required for those systems, equipment, and materials listed in other Sections of the Project Specifications.
- B. Format: Prepare and assemble operation and maintenance manuals in heavy-duty, 3-ring, hardback loose leaf binders in the form of an instructional manual. All binders for each discipline must be the same color. When multiple binders are used, correlate data into related consistent groupings. Binder front must contain permanently attached labels displaying the following:
 - 1. Heading:
The City of New York
Department of Design and Construction
Division of Public Buildings
 - 2. Capital Budget Project Number (FMS ID)
 - 3. Name and Location of Project
 - 4. Contractor's Name and Address
 - 5. Subcontractor's Name and Address (where applicable)
 - 6. Dates of the Work covered by the contents of the Project Manual.
 - 7. Binder spine must display Project Number (FMS ID) and date of completion.
- C. Organization: Include a section in the directory for each of the following:
 - 1. List of documents
 - 2. List of systems
 - 3. List of equipment
 - 4. Table of contents
- D. Each manual must contain the following materials, in the order listed:
 - 1. Title page
 - 2. Table of contents
 - 3. Manual contents
- E. Arrange contents alphabetically by system, subsystem, and equipment. Cross-reference Specification Section numbers. Provide tabbed flyleaf for each separate product, equipment and/or system/subsystem with typed description of product and major component parts of equipment.
- F. Safety warnings or cautions must be visibly highlighted within each maintenance procedure. Use of such highlights must be limited to only critical items and must not be used in an excessive manner which would reduce their effectiveness.
- G. For each product or system, list names, addresses and telephone numbers of subcontractors and suppliers, including local source of supplies and replacement parts. Vendors and supplier listings are to include names, addresses and telephone numbers, including nearest field service telephone numbers.
- H. Where contents of the manual include any manufacturer's catalog pages, clearly indicate the precise items and options included in the installation and delete all manufacturers' data regarding products not included in the installation.



- I. All material within manuals must be new. Copies used for prior submittals or used in construction must not be used.
- J. Submit preliminary and final manual editions to the Commissioner according to the approved progress schedule.
- K. Manuals must present all technical material to the greatest extent possible, with respect to text, tabular matter and illustrations. Illustrations must preferably consist of line drawings. All applicable drawings must be included. If available, color photograph prints may be included.
- L. Preliminary manual editions must be as technically complete as the final manual edition. All illustrations must be in final forms.
- M. Final manual editions must be technically accurate and complete and must represent all “as-built” systems, pieces of equipment, or materials, which have been accepted by the Commissioner. All illustrations, text and tabular material must be in final form. All shop drawings must be included as specified in individual Specification Sections.
- N. Building products, applied materials, and finishes: Include product data, with catalog number, size, composition, and color texture designations. Where applicable, provide information for re-ordering custom manufactured products.
- O. Instructions for care and maintenance: Include manufacturers’ recommendations for cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- P. Moisture protection and weather exposed products: Include product data listing applicable reference standards, chemical compositions, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- Q. Additional requirements: Specified in individual Specification Sections.

2.7 FINAL SITE SURVEY

- A. The Contractor must submit the final certification and final survey in compliance with Section 01 73 00 EXECUTION.

2.8 DEMONSTRATION AND ORIENTATION DVD:

- A. The Contractor must submit a final version of applicable demonstration and training DVD recordings in compliance with Section 01 79 00, DEMONSTRATION AND OWNER’S PRE-ACCEPTANCE ORIENTATION.

2.9 GUARANTEES AND WARRANTIES:

- B. SCHEDULE B: Requirements for guarantees and warranties for the Project are set forth in Schedule B, which is included as part of the Addendum.
- C. FORM: For all guaranty requirements set forth in Schedule B, the Contractor must provide a written guaranty, in the form set forth herein.
- D. Submit fully executed and signed manufacturers’ warranties as listed in the Project Specifications and outlined in Schedule B of the Addendum. Refer to Section 01 77 00, CLOSEOUT PROCEDURES for submittal requirements.



GUARANTY

DDC PROJECT # _____

PROJECT DESCRIPTION _____

CONTRACT # _____

SPECIFICATION SECTION # AND TITLE _____

GUARANTY TO BE IN EFFECT FROM _____

TO _____

The Contractor hereby guarantees that the Work specified under the above section of the aforesaid Contract will be free from defects of material and/or workmanship, for the period indicated above.

The Contractor also guarantees that it will promptly repair, restore, rebuild or replace whichever may be deemed necessary by the City, any or all defective material or workmanship of the aforementioned section, that may appear within the guaranty period and any finished Work to which damage may occur because of such defects, to the satisfaction of the City and without any cost or expense to the City.

The Contractor hereby agrees to pay to the City the cost of the repairs or replacements should the City make the same because of the failure of the Contractor to do so.

Contractor: _____

By: _____
Signature of Partner or Corporate Officer

Print Name: _____

Subscribed and sworn to before me this
day of _____, year _____

Notary Public



2.10 WASTE DISPOSAL DOCUMENTATION:

- A. Certify and deliver to the Commissioner all documentation including reports, receipts, certificates, records etc. for the collection, handling, storage, classification, testing, transportation, recycling and/or disposal of all Non-Hazardous Construction Waste as required by Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL, and Hazardous Waste as required by other Project Specification Sections. Certify compliance with all applicable governing laws, codes, rules and regulations.

2.11 LEED MATERIALS AND MATRIX:

- A. Certify and deliver to the Commissioner all documentation including reports, receipts, certificates, records etc. for the collection, handling, storage, classification, testing, transportation, recycling and/or disposal of all Non-Hazardous Construction Waste as required by Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL, and Hazardous Waste as required by other Project Specification Sections. Certify compliance with all applicable governing laws, codes, rules and regulations.

2.12 MISCELLANEOUS RECORD DOCUMENTS:

- A. Refer to other Project Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Prior to Final Acceptance, complete miscellaneous records and place in good order, properly identified and bound or otherwise organized to allow for use and reference.
- B. Submit three (3) copies of each document to the Commissioner or as otherwise directed by the Commissioner.

PART III – EXECUTION

3.1 RECORDING AND MAINTENANCE:

- A. Recording: Maintain one (1) copy of each submittal during the construction period for Contract Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of the Project.
- B. Maintenance of Record Documents and Samples: Store Contract Record Documents and samples in the field office apart from the Contract Documents used for construction. Do not use Contract Record Documents for construction purposes. Maintain Contract Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to the Contract Record Documents for the Resident Engineer's reference during normal working hours.

END OF SECTION 01 78 39



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**SECTION 01 79 00
DEMONSTRATION AND OWNER'S PRE-ACCEPTANCE ORIENTATION**

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 79 00

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. This section includes administrative and procedural requirements, when set forth in sections of the Project Specifications, for instructing the facility's personnel, including the following:
 - 1. Demonstration of operation of systems, subsystems, and equipment.
 - 2. Owner's pre-acceptance orientation in operation and maintenance of systems, subsystems, and equipment.
 - 3. Demonstration and orientation video recordings.
- B. The Contractor must provide the services of orientation specialists from the Contractor's equipment manufacturers. The specialists must be experienced in the type of equipment to be demonstrated.
- C. Separate orientation sessions must be conducted for mechanical operations and maintenance personnel and for electronic and electrical maintenance personnel.
- D. Commissioning: Refer to the Addendum to identify whether this project is to be commissioned. For commissioned projects, the Contractor must provide demonstration and orientation as described in this section and cooperate with the Commissioning Authority/Agent (CxA) to implement commissioning requirements as described in Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS, and/ or Section 01 91 15 BUILDING ENCLOSURE COMMISSIONING REQUIREMENTS.

1.3 RELATED SECTIONS: include without limitation the following:

- A. Section 01 10 00 SUMMARY
- B. Section 01 33 00 SUBMITTAL PROCEDURES
- C. Section 01 77 00 CLOSEOUT PROCEDURES
- D. Section 01 78 39 CONTRACT RECORD DOCUMENTS
- E. Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS
- F. Section 01 91 15 BUILDING ENCLOSURE COMMISSIONING REQUIREMENTS
- G. Specific requirements for demonstration and orientation indicated in other sections of the Project Specifications.

1.4 DEFINITIONS:



- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

<u>Term</u>	<u>Definition</u>
Commissioning Authority / Commissioning Agent (CxA)	The entity responsible for providing commissioning services for the Project. The entity serving as the CxA may be either an employee(s) of the City or an entity engaged by the City to provide such services.
Design Consultant	The entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the Design Consultant may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.

1.5 SUBMITTALS:

- A. Instruction Program: Submit three (3) copies of an outline of the instructional program for demonstration and orientation, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each orientation module to the Commissioner for approval no less than thirty (30) Days prior to the date the proposed orientation is to take place. Include learning objectives and outline for each orientation module.
1. At completion of orientation, submit three (3) complete training manual(s) and three (3) applicable video recording(s) to the Commissioner for the facility's and City's use.
- B. Qualification Data: For facilitator, instructor and videographer.
- C. Attendance Record: For each orientation module, submit a list of participants and length of instruction time.
- D. Evaluations: For each participant and for each orientation module, submit results and documentation of performance-based test.
- E. Submit all final orientation materials to the Resident Engineer a minimum of fourteen (14) Days prior to the scheduled orientation.
- F. Demonstration and Orientation Recordings:
1. All Projects:
- a. The Contractor must submit to the Commissioner three (3) copies of demonstration and orientation video recordings within seven (7) Days of end of each orientation module.
- b. Identification: On each copy, provide an applied label with the following information:
- 1) Project Contract I.D. Number
 - 2) Project Contract Name
 - 3) Name of Contractor
 - 4) Name of Subcontractor as applicable
 - 5) Name of Design Consultant
 - 6) Name of Construction Manager as applicable
 - 7) Date recorded
 - 8) Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.



- 9) Table of Contents including list of systems covered.
- c. Transcript: Prepared on 8-1/2-by-11-inch paper, punched and bound in heavy-duty, 3-ring, vinyl-covered binders. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as the corresponding DVD recording. Include name of Project and date of recording on each page.
- d. Commissioned Projects: The Contractor must submit one (1) additional copy of the demonstration and orientation video recording to the CxA through the Resident Engineer who will include the approved recording in the commissioning report.

1.6 QUALITY ASSURANCE:

- A. Facilitator Qualifications: A firm or individual experienced in orientation or educating maintenance personnel in an orientation program similar in content and extent to that indicated for this Project.
- B. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 01 40 00, QUALITY REQUIREMENTS, experienced in operation and maintenance procedures and orientation.
- C. Videographer Qualifications: A professional videographer who has experience with orientation and construction projects.
- D. Pre-Instruction Conference: Schedule with the Resident Engineer a conference at Project Site in accordance with Section 01 31 00, PROJECT MANAGEMENT AND COORDINATION. Review methods and procedures related to demonstration and orientation including, but not limited to, the following:
 1. Inspect and discuss locations and other facilities required for instruction.
 2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
 3. Review required content of instruction.
 4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.7 COORDINATION:

- A. Coordinate instruction schedule with the Resident Engineer and facility's operations. Adjust schedule as required to minimize disrupting facility's operations.
- B. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- C. Coordinate content of orientation modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by the Commissioner.

PART II – PRODUCTS

2.1 INSTRUCTION PROGRAM:

- A. Program Structure: Develop an instruction program that includes individual orientation modules for each system and equipment not part of a system, as specified and required by individual Specification Sections.
- B. Orientation Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:



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1. For basis of system design, operational requirements, and criteria, include the following:
 - a. System, subsystem, and equipment descriptions;
 - b. Performance and design criteria if Contractor is delegated design responsibility;
 - c. Operating standards;
 - d. Regulatory requirements;
 - e. Equipment function including auxiliary equipment and systems;
 - f. Operating characteristics;
 - g. Limiting conditions; and
 - h. Performance curves.
2. For documentation, review the following items in detail:
 - a. Emergency manuals;
 - b. Operations manuals;
 - c. Maintenance manuals;
 - d. Project Record Documents;
 - e. Identification systems; and
 - f. Warranties.
3. For emergencies, include the following, as applicable:
 - a. Instructions on meaning of warnings, trouble indications, and error messages;
 - b. Instructions on stopping;
 - c. Shutdown instructions for each type of emergency;
 - d. Operating instructions for conditions outside of normal operating limits;
 - e. Sequences for electric or electronic systems; and
 - f. Special operating instructions and procedures.
4. For operations, include the following, as applicable:
 - a. Startup procedures;
 - b. Equipment or system break-in procedures;
 - c. Routine and normal operating instructions;
 - d. Regulation and control procedures;
 - e. Control sequences;
 - f. Safety procedures;
 - g. Instructions on stopping;
 - h. Normal shutdown instructions;
 - i. Operating procedures for emergencies;
 - j. Operating procedures for system, subsystem, or equipment failure;
 - k. Seasonal and weekend operating instructions;
 - l. Required sequences for electric or electronic systems; and
 - m. Special operating instructions and procedures.
5. For adjustments, include the following:
 - a. Alignments;
 - b. Checking adjustments;
 - c. Noise and vibration adjustments; and
 - d. Economy and efficiency adjustments.
6. For troubleshooting, include the following:
 - a. Diagnostic instructions; and
 - b. Test and inspection procedures.



7. For maintenance, include the following:
 - a. Inspection procedures;
 - b. Types of cleaning agents to be used and methods of cleaning;
 - c. List of cleaning agents and methods of cleaning detrimental to product;
 - d. Procedures for routine cleaning;
 - e. Procedures for preventive maintenance;
 - f. Procedures for routine maintenance;
 - g. Instruction on use of special tools; and
 - h. Housekeeping practices.
8. For repairs, include the following:
 - a. Diagnosis instructions;
 - b. Repair instructions;
 - c. Disassembly, component removal, repair, and replacement; and reassembly instructions;
 - d. Instructions for identifying parts and components; and
 - e. Review of spare parts needed for operation and maintenance.

PART III – EXECUTION

3.1 INSTRUCTION:

- A. Facilitator: Engage a qualified facilitator to prepare the instruction program and orientation modules, to coordinate instructors, and to coordinate between Contractor and the Resident Engineer for the number of participants, instruction times, and location.
- B. The Contractor must engage qualified instructors to instruct the facility's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
- C. Scheduling: Schedule instruction with the Resident Engineer at mutually agreed upon times. For equipment that requires seasonal operation, provide similar instruction at the start of each season.
 1. Schedule orientation with the Resident Engineer with at least fourteen (14) Days advance notice.
- D. Evaluation: At the conclusion of each orientation module, assess and document each participant's mastery of module(s) by use of an oral or written demonstration performance-based test.
- E. Cleanup: Collect and remove used and leftover educational materials from Project Site. Remove instructional equipment. Restore systems and equipment to condition existing before initial orientation use.

3.2 DEMONSTRATION AND ORIENTATION VIDEO RECORDINGS:

- A. All projects:
 1. The Contractor must engage a qualified commercial videographer to video record demonstration and orientation sessions. Record each orientation module separately. Include classroom instructions and demonstrations, board diagrams, and other visual aids, but not student practice.
 2. At the beginning of each orientation module, record each chart containing learning objective and lesson outline.
 3. All recordings must be close-captioned.
 4. Recording Format: Provide high-quality video recording on USB drive or other electronic media as requested by the Commissioner.
 5. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to show area of demonstration and orientation. Display continuous running time.



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6. Narration: Describe scenes on the recording by audio narration by microphone while recording or by dubbing audio narration off-site after. Include description of items being viewed. Describe vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 7. Transcript: Provide a typewritten transcript of the narration. Display images and running time captured from opposite the corresponding narration segment.
- B. Commissioned Projects: Refer to the Addendum to determine if the project is to be commissioned.
1. The Commissioning Authority/Agent (CxA) under separate contract with the City of New York will assess and comment on the adequacy of the orientation instruction sessions by reviewing the orientation and instruction program and agenda provided by the Contractor. The provider of the orientation program will video record the sessions and provide a copy to the CxA for final review and comments. If necessary, Contractor must edit the recording per CxA comments.

END OF SECTION 01 79 00



**SECTION 01 81 13.03
SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v3 BUILDINGS**

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 81 13.03

PART I – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. LEED BUILDING - GENERAL REQUIREMENTS:

The City of New York is committed to implementing good environmental practices and procedures which include achieving a LEED™ Green Building rating. Specific project requirements related to this goal are listed in the applicable paragraphs of this section of the General Conditions. The Contractor must ensure that these requirements, as defined in the sections below and in related sections of the Contract Documents, are implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor or their Subcontractors, will not be allowed if such changes compromise the stated LEED BUILDING criteria.

B. This Section includes:

1. Definitions
2. LEED Provisions
3. LEED Building Submittals
4. LEED Building Submittal Requirements
5. LEED Action Plan

1.3 RELATED SECTIONS: Include without limitation the following:

- | | | |
|----|---------------------|-----------------------------------------------------------------------------------------------------------|
| A. | Section 01 74 19 | CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL |
| B. | Section 01 81 13.13 | VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES, SEALANTS, PAINTS AND COATINGS FOR LEED v3 BUILDINGS |
| C. | Section 01 81 19 | INDOOR AIR QUALITY REQUIREMENTS FOR LEED BUILDINGS |
| D. | Section 01 91 13 | GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS |
| E. | Section 01 91 15 | GENERAL COMMISSIONING REQUIREMENTS FOR BUILDING ENCLOSURE |

1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.



Agrifiber Products	Means products derived from recovered agricultural waste fiber from sources such as cereal straw, sugarcane bagasse, sunflower husk, walnut shells, coconut husks, and agricultural prunings, processed and mixed with resins to produce panels with characteristics similar to composite wood.
Composite Wood	Means products composed of wood or plant particles or fibers bonded by a synthetic resin or binder to produce panels such as plywood, particleboard, and medium density fiberboard (MDF). Does not include hardboard, structural panels, glued laminated timber, prefabricated wood I-joists, or finger-jointed lumber.
Design Consultant	Means the entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.
Forest Stewardship Council (FSC) Certified Wood	Means wood-based materials and products certified in accordance with the Forest Stewardship Council's principles and criteria.
LEED	Means the Leadership in Energy & Environmental Design rating system developed by the United States Green Building Council.
Rapidly Renewable Materials	Means materials made from agricultural products that are typically harvested within a ten-year or shorter cycle. Rapidly renewable materials include products made from bamboo, cotton, flax, jute, straw, sunflower seed hulls, vegetable oils, or wool.
Regionally Manufactured Materials	Means materials that are manufactured within a radius of 500 miles from the Project location. Manufacturing refers to the final assembly of components into the building product that is installed at the Project site.
Regionally Extracted, Harvested, or Recovered Materials	Means materials which are extracted, harvested, or recovered and manufactured within a radius of 500 miles from the Project site.
Recycled Content	<p>Means The percentage by weight of constituents that have been recovered or otherwise diverted from the solid waste stream, either during the manufacturing process (pre-consumer), or after consumer use (post-consumer).</p> <p>Spills and scraps from the original manufacturing process that are combined with other constituents after a minimal amount of reprocessing for use in further production of the same product are not recycled materials.</p> <p>Discarded materials from one manufacturing process that are used as constituents in another manufacturing process are pre-consumer recycled materials.</p> <p>"Pre-consumer" may also be referred to as "post-industrial".</p>
Solar Reflectance Index (SRI)	A measure of a material's ability to reflect solar heat, as shown by a small temperature rise. It is defined so that a standard black (reflectance 0.05, emittance 0.90) is equal to 0, and a standard white (reflectance 0.80, emittance of 0.90) is equal to 100.



Volatile Organic Compound (VOC)	Any compound of carbon (excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate) which vaporizes (becomes a gas) and participates in atmospheric photochemical reactions, as specified in Part 51.00 of Chapter 40 of the U.S. Code of Federal Regulations, at normal room temperatures. For the purposes of this specification, formaldehyde and acetaldehyde are considered to be VOCs.
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1.5 LEED PROVISIONS:

- A. Refer to the Addendum for the LEED rating to be achieved for this project. The provisions to achieve this LEED rating are integrated within the project construction documents and specifications. The Contractor is specifically directed to the "LEED BUILDING Performance Criteria" and "LEED BUILDING Submittals" sections within the contract specification. Additional LEED requirements are met through aspects of the project design, including material and equipment selections, which may not be specifically identified as LEED BUILDING requirements. Compliance with the requirements needed to obtain LEED prerequisites and credits will be used as one criterion to evaluate substitution requests.

1.6 LEED BUILDING SUBMITTALS:

- A. Scope: LEED BUILDING submittals are required for all installed materials included in General Construction work. LEED BUILDING Submittals are only required for field-applied adhesives, sealants, paints and coatings included in Plumbing, Mechanical and Electrical work. Submit all required LEED BUILDING submittals in accordance with Section 01 33 00, SUBMITTAL PROCEDURES.
- B. Applicability: The extent of the LEED BUILDING Submittals varies depending on the specification section. Applicable LEED BUILDING Submittals are listed under the "LEED BUILDING Submittals" heading in each specification section. The detailed requirements for the LEED BUILDING Submittals are defined in Item C below.
- C. Detailed Requirements: Sub-Sections 1.6 C.1 through 1.6 C.3 below defines the information and documents to be provided for each type of LEED BUILDING Submittal as identified in the LEED Submittal Requirements of each specification section:
1. ENVIRONMENTAL BUILDING MATERIALS CERTIFICATION FORM (EBMCF)[GHI]: Information to be supplied for this form (blank sample copy attached at end of this Section to be modified as appropriate to the project) must include some or all of the following items, as identified in the LEED Submittal Requirements of each specification section:
 - a. Cost breakdowns for the materials included in the contractor or sub-contractor's scope of work. Cost reporting must include itemized material costs (excluding the contractor's labor, equipment, overhead and profit).
 - b. The percentages (by weight) of post-consumer and/or post-industrial recycled content in the supplied product(s).
 - 1) For each product with recycled content, also indicate the total recycled content value ($1/2 \times \text{pre-consumer percentage} \times \text{product value} + 1 \times \text{post-consumer percentage} \times \text{product value} = \text{total recycled content value}$).
 - 2) See additional requirements for concrete below.
 - c. Identification (Yes/No) of materials manufactured within 500 miles of the project site AND containing raw materials harvested or extracted within 500 miles of the project site.
 - 1) Indicate the percentage by weight, relative to the total weight of the product that meets these criteria.
 - 2) Indicate the point of harvest/extraction/recovery of regional raw materials, the point of final assembly of regional manufactured products, and the distance from each point to the project site.



- d. Volatile Organic Compound (VOC) content of all field-applied adhesives, sealants, paints, and coatings, listed in grams/liter or lbs./gallon, less water.
 - 1) For detailed requirements refer to Section 01 81 13.13 VOC LIMITS FOR ADHESIVES, SEALANTS, PAINTS AND COATINGS.
 - e. The amount of “Forest Stewardship Council (FSC) Certified” wood products if used in the Project.
 - 1) Record only new FSC-certified wood products. Do not record reclaimed, salvaged, or recycled FSC-certified wood products.
 - 2) Reclaimed, salvaged, or recycled FSC-certified wood may be recorded as post-consumer recycled content.
 - f. The amount of Rapidly Renewable materials if used in the Project.
 - 1) Indicate the type of rapidly renewable material used, and the percentage by weight, relative to the total weight of the product, that consists of rapidly renewable material.
 - g. The percentage (by weight), relative to the total weight of cementitious materials, of supplementary cementitious materials or pozzolans such as fly ash used in each concrete mix used in the Project.
 - 1) For each concrete mix, provide a complete breakdown of all components, by weight and by cost.
 - h. Identification (Yes/No) of composite wood or agrifiber products used in the project that are free of added urea-added formaldehyde resins.
 - i. Identification (Yes/No) of flooring products used in the project that have Carpet and Rug Institute (CRI) Green Label or Green Label Plus certification, or Resilient Floor Covering Institute FloorScore certification.
 - 1) Untreated solid wood flooring, and mineral-based flooring products such as tile, masonry, terrazzo, and cut stone that have no organic-based coatings or sealants, are excluded from this requirement.
 - j. The EBMCF must record the above information only for those materials or products permanently installed in the project. The EBMCF must record VOC content, composite and agrifiber products, and CRI or FloorScore ratings only for those materials or products permanently installed within the weather barrier of the LEED building.
2. EBMCF BACK-UP DOCUMENTATION: These documents are used to validate the information provided on the EBMCF (except cost data). For each material listed on the EBMCF, provide documentation to certify the material's LEED BUILDING attributes, as applicable:
- a. RECYCLED CONTENT: Provide published product literature or letter of certification on the manufacturer's letterhead certifying the amounts of post-consumer and/or post-industrial content.
 - b. REGIONAL MANUFACTURING **AND** REGIONAL RAW MATERIALS (WITHIN 500 MILES): Provide published product literature or letter of certification on the manufacturer's letterhead indicating the city/state where the manufacturing plant is located, where each of the raw materials in the product were extracted, harvested or recovered and the distance in miles from the project site.
 - 1) If only some of the raw materials for a particular product or assembly originate within 500 miles of the project site, provide the percentage (by weight) that these materials comprise in the complete product.



- c. **VOC CONTENT:** Provide Material Safety Data Sheets (MSDS) certifying the Volatile Organic Compound (VOC) content of the adhesive, sealant, paint, or coating products. VOC content is to be reported in grams/liter or lbs./gallon, less water. If the MSDS does not show the product's VOC content, this information must be provided through other published product literature from the manufacturer, or stated in a letter of certification from the product manufacturer on the manufacturer's letterhead.
 - d. **RAPIDLY RENEWABLE MATERIALS:** If used in the project, provide published literature or letter of certification on the manufacturer's letterhead certifying the percentage of each product that is rapidly renewable (by weight).
 3. **PRODUCT CUT SHEETS:** Provide product cut sheets with the Contractor's or sub-contractor's stamp, confirming that the submitted products are the products installed in the Project.
 4. **CRI GREEN LABEL PLUS CERTIFICATION:** For carpets and carpet cushions, provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that the products comply with the "Green Label Plus" IAQ testing program of the Carpet and Rug Institute of Dalton, GA.
 5. **CERTIFICATION OF COMPOSITE WOOD OR AGRIFIBER RESINS:** For all composite wood, engineered wood and agrifiber products (including plywood, particleboard, and medium density fiberboard), provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that the products do not contain added urea-formaldehyde resins.
 6. **CERTIFICATION OF COMPOSITE WOOD OR AGRIFIBER LAMINATING ADHESIVES:** For all laminating adhesives used with composite wood, engineered wood and agrifiber products (e.g., adhesives used to laminate wood veneers to an engineered wood substrate), provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that the adhesive products do not contain urea-formaldehyde.
 7. **FSC-CERTIFIED WOOD:**
 - a. If used in the project, provide chain of custody documents and copies of invoices regarding wood products, including whether or not such wood product is FSC-certified.
 - b. If used in the project, for assemblies, provide the percentage (by cost and by weight) of the assembly that is FSC-certified wood.
 - c. If used in the project, for assemblies, provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying the percentage that is FSC-certified wood.
 8. **GREEN SEAL COMPLIANCE:** Provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that the following product types comply with the VOC limits and chemical component restrictions developed by the Green Seal organization of Washington, DC:
 - a. Interior Architectural Paints and Coatings: refer to Green Seal standard GS-11 (1st edition, May 1993)
 - b. Anti-corrosive and Anti-rust paints: refer to Green Seal standard GC-03 (2nd Edition, January 1997)
 - c. Aerosol Adhesives: refer to Green Seal standard GS-36 (1st edition, October 2000)
 9. **HIGH ALBEDO PAVING AND WALKWAY MATERIALS:** For paving and walkway materials made from concrete or brick provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying a minimum Solar Reflectance Index (SRI) value of 29. SRI



values will be calculated according to ASTM E 1980. Reflectance will be measured according to ASTM E 903, ASTM E 1918, or ASTM C 1549. Emittance will be measured according to ASTM E 408 or ASTM C 1371.

10. **HIGH ALBEDO ROOFING MATERIALS:** For exposed roofing membranes, pavers, and ballast products, provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying the following minimum Solar Reflectance Index (SRI) values:

- a. 78 for low-sloped roofing applications (slope \leq 2:12)
- b. 29 for steep-sloped roofing applications (slope $>$ 2:12)

SRI values will be calculated according to ASTM E 1980. Reflectance will be measured according to ASTM E 903, ASTM E 1918, or ASTM C 1549. Emittance will be measured according to ASTM E 408 or ASTM C 1371.

Vegetated roof surfaces are exempt from the SRI criteria.

11. **LOW MERCURY LAMPS:** For all fluorescent, compact fluorescent, and HID lamps installed in the project, provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying:

- a. The mercury content or content range per lamp in milligrams or picograms;
- b. The design light output per lamp (light at 40% of a lamp's useful life) in lumens; and
- c. The rated average life of the lamp in hours.

In addition, provide the total number of each lamp type installed in the project.

12. **FLOORSCORE CERTIFICATION:** For all hard surface flooring, including vinyl, linoleum, laminate flooring, wood flooring, ceramic flooring, rubber flooring, and wall base, provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying that the products comply with the current FloorScore standard requirements.
13. **CONCRETE:** Provide concrete mix design for each mix, designated by a distinct identifying code or number and signed by a Professional Engineer licensed in the state in which the concrete manufacturer or supplier is located.
14. **INTERIOR LIGHTING FIXTURES:** For each lighting fixture type installed within the building's weather barrier, provide manufacturer's cut sheets indicating the following:
- a. Fixture power in watts.
 - b. Initial lamp lumens.
 - c. Photometric distribution data.
 - d. Dimming capability, in range of percentages.
15. **EXTERIOR LIGHTING FIXTURES:** For each lighting fixture type installed on site, provide manufacturer's cut sheets indicating the following:
- a. Fixture power in watts.
 - b. Initial lamp lumens.
 - c. Photometric distribution data.
 - d. Range of field adjustability, if any.
 - e. Warranty of suitability for exterior use.



16. **ALTERNATIVE TRANSPORTATION:** Provide manufacturer's cut sheets and/or shop drawings for the following items installed on site:
 - a. Bike racks, including total number of bicycle slots provided.
 - b. Signage indicating parking spaces reserved for electric or low-emitting vehicles and for carpools/vanpools, including total number of signs.
17. **WATER CONSERVING FIXTURES:** For all water consuming plumbing fixtures and fittings, provide manufacturer's cut sheets showing maximum flow rates and/or flush rates.
18. **ENERGY SAVING APPLIANCES:** Provide manufacturer's cut sheets and published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying the product's rating under the U.S. EPA/DOE Energy Star program, for all of the following:
 - a. Appliances (i.e., refrigerators, dishwashers, microwave ovens, televisions, clothes washers, clothes dryers, chilled water dispensers).
 - b. Office equipment (i.e., copy machines, fax machines, plotters/printers, scanners, binding and publishing equipment).
 - c. Electronics (i.e., servers, desktop computers, computer monitor displays, laptop computers, network equipment).
 - d. Commercial food service equipment
19. **GLAZING:** For glazing in any windows, doors, storefront and window wall systems, curtainwall systems, skylights, and partitions, provide manufacturer's cut sheets indicating the following:
 - a. Glazed area.
 - b. Visible light transmittance.
 - c. Solar heat gain coefficient.
 - d. Fenestration assembly u-factor.
20. **VENTILATION:** Provide manufacturer's cut sheets for the following:
 - a. Carbon dioxide monitoring systems, if any, installed to measure outside air delivery.
 - b. Air filters: for detailed requirements refer to Section 01 81 19 INDOOR AIR QUALITY REQUIREMENTS.
21. **REFRIGERATION:** For all refrigeration equipment, provide manufacturer's cut sheets indicating the following:
 - a. Equipment type.
 - b. Equipment life. Default values specified by the 2007 ASHRAE Applications Handbook will be used unless otherwise demonstrated by the manufacturer's guarantee and an equivalent long-term service contract.
 - c. Refrigerant type.
 - d. Refrigerant charge in pounds of refrigerant per ton of gross cooling capacity.
 - e. Tested refrigerant leakage rate, in percent per year. A default rate of 2% will be used unless otherwise demonstrated by test data.
 - f. Tested end-of-life refrigerant loss, in percent. A default rate of 10% will be used unless otherwise demonstrated by test data.



1.7 LEED BUILDING SUBMITTAL REQUIREMENTS:

- A. The LEED BUILDING Submittal information must be assembled into one package per contract specification section(s) (or per subcontractor), and submitted in accordance with Section 01 33 00, SUBMITTAL PROCEDURES. Incomplete or inaccurate LEED BUILDING submittals may be used as the basis for the rejection of products or assemblies. Incomplete or inaccurate LEED BUILDING Submittals may be used as the basis for rejecting the submitted products or assemblies.

1.8 LEED ACTION PLANS:

- A. Construction Waste Management Plan- Refer to Section 01 74 19, Construction Waste Management and Disposal for detailed submittal requirements.
- B. Construction IAQ Management Plan- Refer to Section 01 81 19, Indoor Air Quality Requirements for LEED Buildings, for detailed submittal requirements.
- C. Erosion and Sedimentation Control Plan:
 - 1. The Plan must be in accordance with the New York State Department of Environmental Conservation (NYSDEC) or the 2003 EPA Construction General Permit, whichever is more stringent.
 - 2. The Plan must be submitted in accordance with Section 01 33 00, SUBMITTAL PROCEDURES.
 - 3. Detailed requirements: ESC Plan
 - a. Include the Stormwater Pollution Prevention Plan, if required.
 - b. Identify the party responsible for Plan monitoring and documentation. The party must be regularly on site.
 - c. Describe all site work that will be implemented on the project.
 - d. Provide site plan with location of ESC measures, including, but not limited to, stormwater quantity controls, stormwater quality controls, stabilized construction entrances, washdown areas, and inlet/catch basin protection.
 - e. Describe the inspection and maintenance of the ESC measures. Provide a construction schedule indicating weekly site review.
 - f. Describe reporting and documentation measures.
 - 4. Detailed requirements: ESC Measures
 - 5. Submittal requirements: ESC Tracking Log
 - a. Note date of major rain events, describe damage, describe any repairs or maintenance performed, and note responsible party.
 - b. Note date and findings of weekly site review, describe any repairs or maintenance performed, and note responsible party.
 - c. Submit monthly.
 - 6. Implementation
 - a. The Contractor must implement the ESC Plan, coordinate the Plan with all affected trades, and designate one individual as the Erosion and Sedimentation Control Representative, who will be responsible for communicating the progress of the Plan with the Commissioner on a regular basis, and for assembling the required LEED documentation.



- b. The Contractor must be responsible for the provision, maintenance, and repair of all ESC measures.
- c. Demonstration. The Contractor must provide on-site instruction of proper construction practices required to prevent erosion and sedimentation.
- d. Meetings. Urgent or ongoing ESC issues will be discussed at weekly on-site job meetings.

1.9 QUALITY ASSURANCE:

- A. The Contractor must implement all LEED Action Plans, coordinate the Plans and LEED Building Submittals with all affected trades, and designate one individual as the Sustainable Construction Representative at no additional cost to the City of New York, who will be responsible for communicating the progress of LEED activities with the Commissioner on a regular basis, and for assembling the required LEED documentation.
- B. Responsibilities of Contractor's Subcontractors: The Contractor is responsible for his/her subcontractors complying with the LEED Action Plans and for providing required LEED documentation as required for the project.
- C. Distribution and Compilation: The Contractor is responsible for distributing the EBMCF and any other forms or templates required for the subcontractors to record LEED documentation. The Contractor also be responsible for collecting and compiling EBMCF information into packages as described in Section 01 33 00 SUBMITTAL PROCEDURES.
- D. Meetings: Sustainable design and construction issues must be discussed at the following meetings:
 - 1. Demolition kick-off meeting
 - 2. Construction kick-off meeting
 - 3. Construction kick-off meeting for LEED (independent meeting)
 - 4. Weekly job-site progress and coordination meetings
 - 5. Closeout meeting

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 81 13.03



ENVIRONMENTAL BUILDING MATERIALS CERTIFICATION FORM

Contractor Name: _____
Contractor Contact: _____
Telephone Number: _____

Project Name: _____
Project I.D.: _____

Product/Manufacturer	Material Cost ¹	Recycled Content			Regional ⁴			Rapidly Renewable ⁷		VOC content ⁸		Flooring ⁹	Wood	
		Pre-Consumer (% by wt) ²	Post-Consumer (% by wt) ³	Total % (½ Pre + Post)	Location & Distance to Extraction ⁵	Location & Distance to Manufacture ⁶	Extracted & Manuf. (% by wt)	Material	% by wt	*VOC content listed	*VOC content allowed	*Green Label or FloorScore	*Added urea formaldehyde (Yes/No) ¹⁰	FSC Certified ¹¹ (% by wt)

¹ Material Cost: **As it appears on the manufacturer's or distributor's invoice to the contractor or subcontractor. Does not include labor or equipment costs associated with installation.**

² Pre-Consumer Recycled Content: Industrial/manufacturing waste material (e.g., fly-ash and synthetic gypsum, both waste products from coal burning electricity plants) diverted from landfill and incorporated into a finished product. Scrap raw materials that can be reused in the same manufacturing process from which they are recovered are not considered Pre-Consumer Recycled Content.

³ Post-Consumer Recycled Content: Material or product that has served its intended consumer use (e.g., an empty plastic bottle) and has been diverted from landfill and incorporated into a finished product.

⁴ Regional: Refers to a material/product that is BOTH extracted AND manufactured within 500 miles of the Project site. Record this information ONLY for materials/products meeting BOTH of these criteria.

⁵ Extraction: Refers to the location from which the raw resources used in a building product are extracted, harvested, or recovered.

⁶ Manufacture: Refers to the location of the final assembly of components into a building product that is furnished and installed by the Contractor.

⁷ Rapidly Renewable: Refers to materials/products derived from agricultural products that are typically harvested within a ten-year or shorter cycle.

⁸ VOC Content: The quantity of volatile organic compounds contained in adhesives, sealants, paints and architectural coatings. Reported in grams/liter or lbs/gallon, less water.

⁹ Flooring: For carpet, indicate Carpet and Rug Institute (CRI) Green Label Plus certification. For carpet cushion, indicate CRI Green Label certification. For all flooring except unfinished/untreated wood and mineral-based flooring (tile, masonry, terrazzo, cut stone) without organic-based coatings or sealants, indicate Resilient Floor Covering Institute FloorScore rating. VOC limits for adhesives, sealants, etc. still apply.

¹⁰ Added Urea Formaldehyde: Applies to composite wood and agrifiber products only (plywood, particleboard, MDF, OSB, wheatboard, strawboard). Resins or binders with added urea formaldehyde are prohibited.

¹¹ FSC Certified: Certification from the Forest Stewardship Council. This column is only applicable to wood products.

* Applies only to materials/products installed within the weather barrier.

Contractor Certification:

I, _____ a duly authorized representative of _____ (the Contractor) hereby certify that the material information contained herein is an accurate representation of the material qualifications to be provided by the Contractor as components of the final building construction. Furthermore, I understand that any change in such qualifications during the purchasing period will require prior written approval from the Commissioner.

Signature of Authorized Representative: _____ Date: _____



SECTION 01 81 13.04

SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v4 BUILDINGS

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 81 13.04

PART I – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

A. LEED BUILDING - GENERAL REQUIREMENTS:

The City of New York is committed to implementing good environmental practices and procedures which include achieving a LEED™ Green Building rating. Specific Project requirements related to this goal are listed in the applicable paragraphs of this section of the General Conditions. The Contractor shall ensure that these requirements as defined in the sections below and in related sections of the Contract Documents, are implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor or their Subcontractors, shall not be allowed if such changes compromise the stated LEED BUILDING criteria.

B. This Section includes:

1. Definitions
2. LEED Provisions
3. LEED Building Submittals
4. LEED Building Submittal Requirements
5. LEED Action Plan
6. VOC Requirements for Interior Adhesives and Sealants
7. VOC Requirements for Interior Paints and Coatings
8. Low-Emitting Materials, Flooring
9. Low-Emitting Materials, Composite Wood
10. Low-Emitting Materials, Ceilings, Walls, Thermals and Acoustic Insulation
11. Low-Emitting Materials, Furniture
12. Low-Emitting Materials, Exterior Applied Products
13. Low-Emitting Materials, Additional Low-Emitting Requirements

C. This Section includes requirements for Volatile Organic Compound (VOC) emissions and content in specific materials used within the Project.

D. All sections in the Project Specifications with adhesives, sealant or sealant primer applications, paints, coatings, flooring, composite wood, ceilings, walls, thermal and acoustic insulation, furniture, and for healthcare and schools, exterior applied products, shall follow all requirements of this section. In the event of any conflict or inconsistency between this section and the Specifications regarding adhesives, sealant or sealant applications, paints, coatings, flooring, composite wood, ceilings, walls, thermal and acoustic insulation, furniture, and for healthcare and schools, exterior applied products, the requirements set forth in this Section shall prevail.



1.3 RELATED SECTIONS: Include without limitation the following:

- | | | |
|----|------------------|-----------------------------------------------------------|
| A. | Section 01 74 19 | CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL |
| B. | Section 01 81 19 | INDOOR AIR QUALITY REQUIREMENTS FOR LEED BUILDINGS |
| C. | Section 01 91 13 | GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS |
| D. | Section 01 91 15 | GENERAL COMMISSIONING REQUIREMENTS FOR BUILDING ENCLOSURE |

1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

Adhesive	Any substance used to bond one surface to another by attachment. Includes adhesive primers and adhesive bonding primers.
Aerosol Adhesive	Any adhesive packaged as an aerosol with a spray mechanism permanently housed in a non-refillable can designed for hand-held application without the need for ancillary equipment
Agrifiber Products	Products derived from recovered agricultural waste fiber from sources such as cereal straw, sugarcane bagasse, sunflower husk, walnut shells, coconut husks and agricultural prunings, processed and mixed with resins to produce panels with characteristics similar to composite wood.
Bio-based materials	Composed in whole or in significant part of biological products, renewable agricultural materials or forestry materials, and must meet the Sustainable Agriculture Network's Sustainable Agriculture Standard. Bio-based raw materials must be tested using ASTM Test Method D6866 and be legally harvested, as defined by the exporting and receiving country. Exclude hide products, such as leather and other animal skin material.
Building Exterior	A structure's primary and secondary weatherproofing system, including waterproofing membranes and air- and water-resistant barrier materials, and all building elements outside that system.
Building Interior	Everything inside a structure's weatherproofing membrane.
Carcinogen	A chemical listed as a known, probable, reasonably anticipated, or possible human carcinogen by the International Agency for Research on Cancer



	(IARC) (Groups 1, 2A, and 2B), the National Toxicology Program (NTP) (Groups 1 and 2), the U.S. Environmental Protection Agency (EPA) Integrated Risk Information System (IRIS) (weight-of-evidence classifications A, B1, B2, and C, carcinogenic, likely to be carcinogenic, and suggestive evidence of carcinogenicity or carcinogen potential), or the Occupational Safety and Health Administration (OSHA).
Certified Wood	See Forest Stewardship Council (FSC) Certified Wood.
Clear Wood Finish	Clear/semi-transparent coating applied to wood substrates to provide a transparent or translucent solid film.
Coating	Liquid, liquefiable or mastic composition that is converted to a solid adherent film after application to a substrate as a thin layer; and is used for decorating, protecting, identifying or to serve some functional purpose such as the filling or concealing of surface irregularities or the modification of light and heat radiation characteristics; and is intended for on-site application to interior or exterior surfaces of buildings. Does not include stains, clear finishes, recycled latex paint, specialty (industrial, marine or automotive) coatings or paint sold in aerosol cans.
Composite Wood	Products composed of wood or plant particles or fibers bonded by a synthetic resin or binder to produce panels such as plywood, particleboard, and medium density fiberboard (MDF). Does not include hardboard, structural panels, glued laminated timber, prefabricated wood I-joists or finger-jointed lumber.
Cradle-to-Gate Assessment	Analysis of a product's partial life cycle, from resource extraction to the factory gate, before it is transported for distribution and sale.
Design Consultant	The entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.



Enclosure	The exterior plus semi-exterior portions of the building. Exterior consists of the elements of a building that separate conditioned spaces from the outside (i.e., the wall assembly). Semi-exterior consists of the elements of a building that separate conditioned space from unconditioned space or that encloses semi-heated space through which thermal energy may be transferred to or from the exterior or conditioned or unconditioned spaces (e.g., attic, crawl space, basement).
Environmental Product Declaration (EPD)	A statement that the item meets the environmental requirements of, ISO 14025, 14040 and EN 15804, or ISO 21930 and have at least a cradle-to-gate scope.
Extended Producer Responsibility	A. A waste management strategy, also known as closed-loop program or product take-back, where the manufacturer's responsibility for a product is extended to the post-consumer stage of the product's life-cycle.
Floor Coating	Opaque coating applied to flooring. Excludes industrial maintenance coatings.
Forest Stewardship Council (FSC) Certified Wood	Wood-based materials and products certified in accordance with the Forest Stewardship Council's principles and criteria.
Hazardous Air Pollutant	Any compound listed by the U.S. EPA in the Clean Air Act Section 112(b)(1) as a hazardous air pollutant.
Inherently Non-Emitting Materials	Products that are inherently non-emitting sources of VOCs, including stone, ceramic, powder-coated metals, plated or anodized metals, lass, concrete, clay brick, unfinished solid wood, untreated solid wood. These materials are considered compliant without VOC testing if they do not include integral organic-based surface coatings, binders or sealants.
Lacquer	Clear/semi-transparent coating formulated with cellulosic or synthetic resins to dry by evaporation without chemical reaction and provide a solid, protective film.



LEED	The Leadership in Energy & Environmental Design rating system developed by the United States Green Building Council (USGBC).
Life-Cycle Assessment	An evaluation of the environmental effects of a product from cradle to grave, as defined by ISO 14040-2006 and ISO 14044-2006.
Mutagen	A chemical that meets the criteria for category 1, chemicals known to induce heritable mutations or to be regarded as if they induce heritable mutations in the germ cells of humans, under the Harmonized System for the Classification of Chemicals Which Cause Mutations in Germ Cells (United Nations Economic Commission for Europe, Globally Harmonized System of Classification and Labeling of Chemicals).
Ozone-Depleting Compounds	A compound with an ozone-depletion potential greater than 0.1 (CFC 11=1) according to the U.S. EPA list of Class I and Class II Ozone-Depleting Substances.
Paint	<p>A pigmented coating. For the purposes of this specification, paint primers are considered to be paints.</p> <p>A. Flat Coating or Paint: Has a gloss of less than 15 (using an 85-degree meter) or less than 5 (using a 60-degree meter).</p> <p>B. Non-Flat Coating or Paint: Has a gloss of greater than or equal to 15 (using an 85-degree meter) or greater than or equal to 5 (using a 60-degree meter).</p> <p>C. Non-Flat High-Gloss Coating or Paint: Has a gloss of greater than or equal to 70 (using a 60-degree meter).</p> <p>Anti-Corrosive / Rust Preventative Paint: Coating formulated and recommended for use in preventing the corrosion of ferrous metal substrates.</p>
Permanently Installed Building Product	See Product.
Primer	<p>A. Coating that is formulated and recommended for one or more of the following purposes: to provide a firm bond between the substrate and a subsequent coating; to prevent a subsequent coating from being absorbed into the substrate; to prevent</p>



	harm to a subsequent coating from materials in the substrate; or to provide a smooth surface for application of a subsequent coating.
Product	A. An item that arrives on the Project site either as a finished element ready for installation or as a component to another item assembled on-site. The product unit is defined by the functional requirement for use in the Project; this includes the physical components and services needed to serve the intended function of the permanently installed building product. Similar products within a specification shall each contribute as a separate product.
Product-Specific Declaration	A. Products with a publicly available, critically reviewed life-cycle assessment conforming to ISO 14044 that have at least a cradle-to-gate scope.
Recycled Content	<p>A. The percentage by weight of constituents that have been recovered or otherwise diverted from the solid waste stream, either during the manufacturing process (pre-consumer) or after consumer use (post-consumer). Recycled content claims for products must conform to the definition in ISO 14021-1999, Environmental Labels and Declarations, Self-Declared Environmental Claims (Type II Environmental Labeling).</p> <p>Spills and scraps from the original manufacturing process that are combined with other constituents after a minimal amount of reprocessing for use in further production of the same product are not recycled materials.</p> <p>Discarded materials from one manufacturing process that are used as constituents in another manufacturing process are pre-consumer recycled materials.</p>



	"Pre-consumer" may also be referred to as "post-industrial".
Regionally Manufactured Materials	Materials that are manufactured, distributed and purchased within a radius of 100 miles from the Project location. Manufacturing refers to all points of manufacture for an assembly of components.
Regionally Extracted, Harvested, or Recovered Materials	Materials which are extracted, harvested or recovered, manufactured, distributed and purchased within a radius of 100 miles from the Project site.
Reproductive Toxin	A chemical listed as a reproductive toxin (including developmental, female, and male toxins) by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (California Code of Regulations, Title 22, Division 2, Subdivision 1, Chapter 3, Sections 1200, et. Seq.).
Sanding Sealer	Clear/semi-transparent coating formulated to seal bare wood. Can be abraded to create a smooth surface for subsequent coatings. Does not include sanding sealers that are lacquers (see Clear Wood Finish above).
Sealant	Any material with adhesive properties, formulated primarily to fill, seal, or waterproof gaps or joints between surfaces. Includes sealant primers and caulks.
Shellac	Clear or pigmented coating formulated solely with the resinous secretions of the lac beetle, thinned with alcohol and formulated to dry by evaporation without chemical reaction. Excludes floor applications.
Solar Reflectance Index (SRI)	A measure of a material's ability to reflect solar heat, as shown by a small temperature rise. It is defined so that a standard black (reflectance 0.05, emittance 0.90) is equal to 0, and a standard white (reflectance 0.80, emittance of 0.90) is equal to 100.
Stain	Clear semi-transparent/opaque coating formulated to change the color but not conceal the grain pattern or texture of the substrate.
Varnish	Clear/semi-transparent coating, excluding lacquers and shellacs, formulated to dry by chemical



	reaction on exposure to air. May contain small amounts of pigment.
Volatile Aromatic Compound	Any hydrocarbon compound containing one or more 6-carbone benzene rings, and having an initial boiling point less than or equal to 280 degrees Celsius measured at standard conditions of temperature and pressure.
Volatile Organic Compound (VOC)	Any compound of carbon (excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates and ammonium carbonate) which vaporizes (becomes a gas) and participates in atmospheric photochemical reactions, as specified in Part 51.00 of Chapter 40 of the U.S. Code of Federal Regulations, at normal room temperatures. For the purposes of this specification, formaldehyde and acetaldehyde are considered to be VOCs. Waterproofing Sealer: A coating that prevents the penetration of water into porous substrates.

1.5 LEED PROVISIONS:

- A. Refer to the Addendum for the LEED rating to be achieved for this Project. The provisions to achieve this LEED rating are integrated within the Project construction documents and specifications. Additional LEED requirements are met through aspects of the Project design, including material and equipment selections, which may not be specifically identified as LEED Building requirements. Compliance with the requirements needed to obtain LEED prerequisites and credits will be used as one criterion to evaluate substitution requests.

1.6 LEED BUILDING SUBMITTALS:

- A. Scope: LEED Building Submittals are required for all permanently installed materials included in General Construction work. For Plumbing, Mechanical and Electrical work, LEED Building Submittals are only required for field-applied adhesives, sealants, paints and coatings. Voluntary inclusion of system components such as piping, pipe insulation, ducts, conduits, plumbing fixtures, faucets and lamp housings shall be consistently applied to the Project's LEED credits. Submit all required LEED Building Submittals in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.
- B. Applicability: The extent of the LEED Building Submittals varies depending on the specification section. Applicable LEED Building Submittals are listed under the "LEED Building Submittals" heading in each specification section. The detailed requirements for the LEED Building Submittals are defined in Sub-Section 1.6 C below.
- C. Detailed Requirements: Sub-Sections 1.6 C.1 through 1.6 C.18 below define the information and documents to be submitted for each type of LEED Building Submittal as identified in the LEED Building Submittals heading in each specification section:



Department of Design and Construction

Division 01 – DDC STANDARD GENERAL CONDITIONS
SINGLE CONTRACT PROJECTS
Issue Date: March 15, 2020

1. LEED v4 Material and Resources (MR) Credits Calculator for Building Product Disclosure and Optimization (Disclosure and Optimization Calculator): With each submittal of a product permanently installed in the Project, the Contractor shall be responsible for the completion of the Disclosure and Optimization Calculator, which can be found on USGBC's website. The Contractor shall maintain an updated Disclosure and Optimization Calculator for all applicable products throughout the Project duration and submit the updated calculator on a monthly basis.
 - a. The Disclosure and Optimization Calculator shall record the information outlined in Items b.-c. below for all permanently installed products, the information outlined in Item d. below for all permanently installed concrete mixes, and the information outlined in Items e.-i. below for all permanently installed products that have the content, disclosure or optimization characteristics described herein:
 - b. Cost breakdowns for the materials included in the contractor or sub-contractor's scope of work. Cost reporting shall include itemized material costs (excluding the contractor's labor, equipment, overhead and profit).
 - c. The percentages (by weight) of post-consumer and/or post-industrial recycled content in the supplied product(s).
 - 1) For each product with recycled content, also indicate the total recycled content value ($1/2 \times \text{pre-consumer percentage} \times \text{product value} + 1 \times \text{post-consumer percentage} \times \text{product value} = \text{total recycled content value}$).
 - 2) See additional requirements for concrete in section 1.6.C.1.d below.
 - d. The percentage (by weight), relative to the total weight of cementitious materials, of supplementary cementitious materials or pozzolans such as fly ash used in each concrete mix used in the Project.
 - 1) For each concrete mix, submit a complete breakdown of all components, by weight and by cost.
 - e. Identification (Yes/No) of materials manufactured, distributed and purchased within 100 miles of the Project site AND containing raw materials harvested or extracted within 100 miles of the Project site, if used in the Project, as well as the following information:
 - 1) Indicate the percentage by weight, relative to the total weight of the product that meets these criteria.
 - 2) Indicate the point of harvest/extraction/recovery of regional raw materials, the point of final assembly of regional manufactured products, and the distance from each point to the Project site.
 - f. The percentage (by cost) of "Forest Stewardship Council (FSC) Certified" wood products, if used in the Project.
 - 1) Record all new wood products, indicating which are FSC-certified. Do not record reclaimed, salvaged, or recycled FSC-certified wood products.
 - 2) Reclaimed, salvaged, or recycled FSC-certified wood may be recorded as post-consumer recycled content.
 - g. The number or percentage of products with Environmental Product Declarations (EPD), with fractional or multiplied values as indicated below. If a product used in the Project has an EPD Declaration, submit one of the following:
 - 1) EPD:
 - i. Product-Specific Declaration: Valued as one quarter (1/4) of a product
 - ii. Industry-Wide (Generic) EPD: Valued as one half (1/2) of a product
 - iii. Product-Specific Type III EPD: Valued as one whole product
 - 2) Documentation of third-party certification of impact reduction below industry average for at least three of the following categories, valued at 100%:
 - i. Global warming potential (greenhouse gases), in CO₂e;
 - ii. Depletion of the stratospheric ozone layer, in kg CFC-11;
 - iii. Acidification of land and water sources, in moles H⁺ or kg SO₂;
 - iv. Eutrophication, in kg nitrogen or kg phosphate;



- v. Formation of tropospheric ozone, in kg NO_x or kg ethene; and depletion of nonrenewable energy resources, in MJ.
 - 3) For 1) and 2) above, if a product is also sourced (extracted, manufactured, purchased) within 100 miles of the site, it is valued as two times the whole product.
 - 4) For 1) and 2) above, structure and enclosure materials may not constitute more than 30% of the value of compliant building products.
- h. The number or percentage of products for which Sourcing of Raw Materials has been documented, with fractional or multiplied values as indicated below. If a product used in the Project has documented Sourcing of Raw Materials, submit one of the following:
 - 1) Corporate sustainability report (CSR). Submit one of the following:
 - i. Manufacturer's self-declared report: valued as half of a product
 - ii. Third-party verified CSR which include environmental impacts of extraction operations and activities associated with the manufacturer's product and the product's supply chain: valued as one whole product:
 - 1. Global Reporting Initiative (GRI) Sustainability Report
 - 2. Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises
 - 3. U.N. Global Compact: Communication of Progress
 - 4. ISO 26000: 2010 Guidance on Social Responsibility
 - 5. Other USGBC approved programs meeting the CSR criteria
 - 2) Documentation of at least one of the responsible extraction criteria below:
 - i. Extended producer responsibility program, valued as half of a product
 - ii. Bio-based materials, valued as one whole product
 - iii. Certified Wood: Wood-based materials include all materials made from wood, including engineered wood products and wood-based panel products, valued as one whole product
 - iv. Material Reuse: Materials may be salvaged, refurbished, or reused, valued as one whole product.
 - v. Recycled content. The sum of post-consumer recycled content plus one-half the pre-consumer recycled content, based on cost, valued as one whole product.
 - vi. Other USGBC approved programs meeting leadership extraction criteria
 - 3) For 1) and 2) above, if a product is also sourced (extracted, manufactured, purchased) within 100 miles of the site: valued as two times the whole product.
 - 4) For 1) and 2) above, structure and enclosure materials may not constitute more than 30% of the value of compliant building products. Products meeting multiple criteria may only be counted once.
- i. The number or percentage of products for which Material Ingredients have been disclosed, with fractional or multiplied values as indicated below. If a product used in the Project discloses its Material Ingredients, submit one of the following:
 - 1) Chemical inventory of the product to at least 0.1% (1000 ppm), documented by one of the following:
 - i. Manufacturer Inventory
 - ii. Health Product Declarations (HPDs)
 - iii. Cradle to Cradle (C2C) certifications
 - iv. Declare product labels



- v. ANSI/BIFMA e3 Furniture Sustainability Standard (Furniture may be included, providing it is included consistently in all MR Credits.)
 - 2) Documentation of compliance with one of the following material ingredient optimization criteria programs:
 - i. GreenScreen benchmarks
 - ii. Cradle to Cradle certifications
 - iii. REACH optimizations
 - iv. Other USGBC approved programs meeting building product optimization criteria
 - 3) Documentation that the product is sourced from a manufacturer that meets all of the below supply chain optimization criteria:
 - i. Manufacturer engages in validated and robust safety, health, hazard and risk programs which at a minimum document at least 99% (by weight) of the ingredients used to make the building product or building material
 - ii. Manufacturer provides independent third party verification of the following conditions for their supply chain, at a minimum:
 - 1. Processes are in place to communicate and transparently prioritize chemical ingredients along the supply chain according to available hazard, exposure and use information to identify those that require more detailed evaluation
 - 2. Processes are in place to identify, document, and communicate information on health, safety and environmental characteristics of chemical ingredients
 - 3. Processes are in place to implement measures to manage the health, safety and environmental hazard and risk of chemical ingredients
 - 4. Processes are in place to optimize health, safety and environmental impacts when designing and improving chemical ingredients
 - 5. Processes are in place to communicate, receive and evaluate chemical ingredient safety and stewardship information along the supply chain
 - 6. Safety and stewardship information about the chemical ingredients is publicly available from all points along the supply chain
 - 4) For 2) and 3) above, if a product is also sourced (extracted, manufactured, purchased) within 100 miles of the site: valued as two times the whole product. Products compliant with both 2) and 3) may only be counted once.
 - 5) For 1), 2), and 3) above, structure and enclosure materials may not constitute more than 30% of the value of compliant building products.
2. LEED v4 Indoor Environmental Quality Credit Low-Emitting Materials Calculator (EQ Calculator). With each relevant product submittal, the Contractor shall be responsible for the completion of the EQ Calculator, which can be found on USGBC's website. The Contractor shall maintain an updated EQ Calculator throughout the Project duration for all applicable products and submit the updated calculator on a monthly basis.
- a. The EQ Calculator shall record information for all relevant products as outlined below. Include the following documentation. Detailed requirements are listed in b. – j. below.
 - 1) VOC content of all field-applied interior adhesives, sealants, paints, and coatings, listed in grams/liter or lbs./gallon, less water.
 - 2) General Emissions Evaluation for more than 90 percent of all field-applied interior paints, coatings, adhesives, and sealants, by volume, and for 100 percent of all flooring, ceilings, walls, and thermal and acoustic insulation.
 - 3) Composite Wood Evaluation for all composite wood not covered by other categories.



- 4) Furniture Evaluation for 90% of all furniture, by cost.
 - 5) For schools/healthcare only: Exterior-Applied Products Evaluation for 90% of all exterior applied materials, measured by volume. All batt insulation products shall contain no added formaldehyde.
- b. VOC REQUIREMENTS, GENERAL: The following materials must meet the listed compliance requirements for emissions and content standards, for all applicable categories. All products shall comply with each applicable threshold requirement. Refer to LEED BD+C Reference Guide, EQ Credit Low-Emitting Materials for additional guidance.
- 1) General Emissions Requirements: Products must demonstrate they have been tested and determined compliant in accordance with California Department of Public Health (CDPH), Standard Method v1.1-2010, using the applicable exposure scenario, and stating the range of total VOCs (TVOC) after 14 days measured as specified in the CDPH Standard Method v1.1 as follows:
 - i. 0.5mg/m³ or less;
 - ii. between 0.5 and 5.0 mg/m³; or,
 - iii. 0.50 mg/m³ or more
 - 2) No product shall contain any ingredients that are carcinogens, mutagens, reproductive toxins, persistent bioaccumulative compounds, hazardous air pollutants, or ozone-depleting compounds. An exception shall be made for titanium dioxide and, for products that are pre-tinted by the manufacturer, carbon black, which shall be less than or equal to 1% by weight of the product.
 - 3) No product shall contain the following:
 - i. methylene chloride
 - ii. 1,1,1-trichloroethane
 - iii. benzene
 - iv. toluene
 - v. ethylbenzene
 - vi. vinyl chloride
 - vii. naphthalene
 - viii. 1,2-dichlorobenzene
 - ix. di (2-ethylhexyl) phthalate
 - x. butyl benzyl phthalate
 - xi. di-n-butyl phthalate
 - xii. di-n-octyl phthalate
 - xiii. diethyl phthalate
 - xiv. dimethyl phthalate
 - xv. isophorone
 - xvi. antimony
 - xvii. cadmium
 - xviii. hexavalent chromium
 - xix. lead
 - xx. mercury
 - xxi. formaldehyde
 - xxii. methyl ethyl ketone
 - xxiii. methyl isobutyl ketone
 - xxiv. acrolein
 - xxv. acrylonitrile
 - 4) No product shall contain more than 1.0% by weight of sum total of volatile aromatic compounds.
- c. VOC REQUIREMENTS FOR INTERIOR ADHESIVES AND SEALANTS:
- 1) For field applications that are inside the weatherproofing system, use adhesives and sealants that comply with the following limits for VOC content when calculated



according to South Coast Air Quality Management District (SCAQMD) Rule #1168 requirements in effect on July 1, 2005, and rule amendment date January 7, 2005:

	Allowable VOC Content (g/L):
Architectural Applications:	
Indoor carpet adhesives	50
Carpet pad adhesives	50
Outdoor carpet adhesives	150
Wood flooring adhesives	100
Rubber floor adhesives	60
Subfloor adhesives	50
Ceramic tile adhesives	65
VCT and asphalt tile adhesives	50
Dry wall and panel adhesives	50
Cove base adhesives	50
Multipurpose construction adhesives	70
Structural glazing adhesives	100
Single ply roof membrane adhesives	250
Specialty Applications:	
PVC welding	510
CPVC welding	490
ABS welding	325
Plastic cement welding	250
Adhesive primer for plastic	550
Computer diskette manufacturing	350
Contact adhesive	80
Special purpose contact adhesive	250
Tire retread	100
Adhesive primer for traffic marking tape	150
Structural wood member adhesive	140
Sheet applied rubber lining operations specialty	850
Top and Trim adhesive	250
Substrate Specific Applications:	
Metal to metal substrate specific adhesives	30
Plastic foam substrate specific adhesives	50
Porous material (except wood) substrate specific adhesives	50
Wood substrate specific adhesives	30
Fiberglass substrate specific adhesives	80
Sealants:	
Architectural sealant	250
Marine deck sealant	760
Nonmember roof sealant	300
Roadway sealant	250
Single-ply roof membrane sealant	450
Other sealant	420
Sealant Primers:	
Architectural non-porous sealant primer	250
Architectural porous sealant primer	775



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Modified bituminous sealant primer	500
Marine deck sealant primer	760
Other sealant primer	750
Other	
Other adhesives, adhesive bonding primers, adhesive primers or any other primers	250

- 2) For field applications that are inside the weatherproofing system, a minimum of 90 percent of adhesives and sealants, by volume, shall comply with the requirements of the CDPH "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- d. VOC REQUIREMENTS FOR INTERIOR PAINTS AND COATINGS:
- 1) For field applications that are inside the weatherproofing system, use paints and coatings that comply with the following limits for VOC content when calculated according to the California Air Resources Board (CARB) 2007, Suggested Control Measure (SCM) for Architectural Coatings, or the SCAQMD Rule #1113, effective June 3, 2011.

Product Type:	Allowable VOC Content (g/L):
Bond Breaker	350
Clear wood finishes - Varnish	275
Clear wood finishes – Sanding Sealer	275
Clear wood finishes - Lacquer	275
Colorant – Architectural Coatings, excluding IM coatings	50
Colorant – Solvent Based IM	600
Colorant - Waterborne IM	50
Concrete – Curing compounds	100
Concrete – Curing compounds for roadways & bridges	350
Concrete surface retarder	50
Driveway Sealer	50
Dry-fog coatings	50
Faux finishing coatings - Clear topcoat	100
Faux finishing coatings – Decorative Coatings	350
Faux finishing coatings - Glazes	350
Faux finishing coatings - Japan	350
Faux finishing coatings – Trowel applied coatings	50
Fire-proof coatings	150
Flats	50
Floor coatings	50
Form release compounds	100
Graphic arts (sign) coatings	150
Industrial maintenance coatings	100
Industrial maintenance coatings – High temperature IM coatings	420
Industrial maintenance coatings – Non-sacrificial anti-graffiti coatings	100
Industrial maintenance coatings – Zinc rich IM primers	100



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Magnesite cement coatings	450
Mastic coatings	100
Metallic pigmented coatings	150
Multi-color coatings	250
Non-flat coatings	50
Pre-treatment wash primers	420
Primers, sealers and undercoaters	100
Reactive penetrating sealers	350
Recycled coatings	250
Roof coatings	50
Roof coatings, aluminum	100
Roof primers, bituminous	350
Rust preventative coatings	100
Stone consolidant	450
Sacrificial anti-graffiti coatings	50
Shellac- Clear	730
Shellac – Pigmented	550
Specialty primers	100
Stains	100
Stains, interior	250
Swimming pool coatings – repair	340
Swimming pool coatings – other	340
Traffic Coatings	100
Waterproofing sealers	100
Waterproofing concrete/masonry sealers	100
Wood preservatives	350
Low solids coatings	120

- 2) For field applications that are inside the weatherproofing system, 90 percent of paints and coatings shall comply with the requirements of the CDPH's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- e. LOW-EMITTING MATERIALS, FLOORING: Flooring shall comply with the requirements of the CDPH's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- f. LOW-EMITTING MATERIALS, COMPOSITE WOOD: Composite wood, agrifiber products, and adhesives shall be made using ultra-low-emitting formaldehyde (ULEF) resins as defined in the CARB's "Airborne Toxic Control Measure to Reduce Formaldehyde Emissions from Composite Wood Products" or shall be made with no added formaldehyde.
- g. LOW-EMITTING MATERIALS, CEILINGS, WALLS, THERMAL, AND ACOUSTIC INSULATION: Ceilings, walls, and thermal and acoustic insulation shall comply with the requirements of the CDPH's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."
- h. LOW-EMITTING MATERIALS, FURNITURE: At least 90 percent of furniture, measured by cost, shall be tested in accordance with ANSI/BIFMA Standard Method M7.1-2011; comply with ANSI/BIFMA e3-2011 Furniture Sustainability Standard, Sections 7.6.1 and 7.6.2, using either the concentration modeling approach or the emissions factor approach; and model the test results using the open plan, private office, or seating scenario in ANSI/BIFMA M7.1, as appropriate.
- i. LOW-EMITTING MATERIALS, EXTERIOR APPLIED MATERIALS (HEALTHCARE/ SCHOOLS ONLY): At least 90 percent of exterior applied materials, measured by volume,



shall comply with the requirements of the CDPH's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers."

- 1) The following materials are prohibited and do not count toward total percentage compliance:
 - a) Hot-mopped asphalt for roofing.
 - b) Coal tar sealants for parking lots and other paved surfaces.
- j. **LOW-EMITTING MATERIALS, ADDITIONAL LOW-EMITTING REQUIREMENTS:** If the applicable regulation requires subtraction of exempt compounds, any content of intentionally added exempt compounds larger than 1% weight by mass (total exempt compounds) must be disclosed.
 - 1) If a product cannot reasonably be tested as specified above, testing of VOC content must comply with ASTM D2369-10; ISO 11890, part 1; ASTM D6886-03; or ISO 11890-2.
 - 2) Methylene chloride and perchloroethylene may not be intentionally added in adhesives, sealants, paints or coatings.
3. **BACK-UP DOCUMENTATION:** For each material listed in the Disclosure and Optimization Calculator or the EQ Calculator, provide and submit in accordance with Section 01 33 00 SUBMITTAL PROCEDURES, including but not limited to the documentation to certify the material's LEED Building attributes, as applicable:
 - a. **RECYCLED CONTENT:** Submit published product literature or letter of certification on the manufacturer's letterhead certifying the amounts of post-consumer and/or post-industrial content.
 - b. **REGIONAL SOURCING (WITHIN 100 MILES):** Submit published product literature or letter of certification on the manufacturer's letterhead indicating the city/state where the manufacturing plant is located, where each of the raw materials in the product were extracted, harvested or recovered, manufactured, distributed and the distance in miles from the Project site.
 - 1) If only some of the raw materials for a particular product or assembly originate within 100 miles of the Project site, provide the percentage (by weight) that these materials comprise in the complete product.
 - c. **BUILDING PRODUCT DISCLOSURE AND OPTIMIZATION:** Submit published third-party or manufacturer's product literature or letter of certification, on the third-party or manufacturer's letterhead, certifying the documented disclosure and optimization information.
 - d. **VOC EMISSIONS AND CONTENT:** Submit Material Safety Data Sheets (MSDS), for all applicable products. Applicable products include, but are not limited to adhesives, sealants, carpets, paints and coatings, flooring, composite wood, ceilings, walls, thermal and acoustic insulation, furniture, and for healthcare and schools, exterior applied products. MSDS shall indicate the VOC emissions and content of products submitted. (If an MSDS does not include a product's VOC emissions and content, then product data sheets, manufacturer literature, or a letter of certification from the manufacturer shall be submitted in addition to the MSDS to indicate the VOC emissions and content). Submit product third-party certificates and test reports, stating the testing methodology and the model, to include units that are consistent with those required. For wet-applied products, the manufacturer's documentation must state each product's classification and application according to the referenced standard's definition.
4. **PRODUCT CUT SHEETS:** Submit product cut sheets with the Contractor's or sub-contractor's stamp, confirming that the submitted products are the products installed in the Project.
5. **FSC-CERTIFIED WOOD:** If FSC-Certified Wood is used in the Project, submit:



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- a. Copies of vendor's invoices itemizing all new wood purchases, showing the cost for each line item.
 - b. For FSC-certified products, the vendor invoice shall list product's FSC content percent and its Chain-of-Custody (CoC) certification number.
 - c. For FSC-certified products, submit the product and producer's CoC certificates.
 - d. For FSC-certified products modified on-site, submit on-site installer's CoC certification.
 - e. For assemblies, submit the percentage (by cost and by weight) of the assembly that is FSC-certified wood and published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying the percentage that is FSC-certified wood.
6. **HIGH ALBEDO PAVING AND WALKWAY MATERIALS:** For paving and walkway materials made from concrete or brick, submit published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying a minimum 3-year aged Solar Reflectance (SR) value of 0.28. If 3-year aged value information is not available, submit published product literature or letter verifying an initial SR value of at least 0.33 at installation.
7. **HIGH ALBEDO ROOFING MATERIALS:** For exposed roofing membranes, pavers, and ballast products, submit published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying the following minimum Solar Reflectance Index (SRI) values, calculated according to ASTM E 1980. Reflectance shall be measured according to ASTM E 903, ASTM E 1918, or ASTM C 1549. Emittance shall be measured according to ASTM E 408 or ASTM C 1371. Vegetated roof surfaces are exempt from the SRI criteria.
 - a. 82 for initial SRI, or 64 for 3-year aged SRI for low-sloped roofing applications (slope \leq 2:12)
 - b. 39 for initial SRI or 32 for 3-year aged SRI for steep-sloped roofing applications (slope $>$ 2:12)
8. **LOW MERCURY LAMPS:** For all fluorescent, compact fluorescent and HID lamps installed in the Project, submit the total number of each lamp type and submit published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying the following information. Preheat, T-9, T-10 and T-12 fluorescents or mercury vapor high-intensity discharge (HID) lamps shall not be installed in the Project. For healthcare projects only, probe-start metal halide HID lamps shall not be installed in any interior spaces.
 - a. The mercury content or content range per lamp in milligrams or picograms, meeting the following criteria;

Lamp	Maximum Mercury Content (milligram)
T-8 fluorescent, eight-foot	10 mg
T-8 fluorescent, four-foot	3.5 mg
T-8 fluorescent, U-bent	6 mg
T-5 fluorescent, linear	2.5 mg
T-5 fluorescent, circular	9 mg
Compact fluorescent, nonintegral ballast	3.5 mg
Compact fluorescent, integral ballast	3.5 mg, ENERGY STAR qualified
High-pressure sodium, up to 400 watts	10 mg
High-pressure sodium, above 400 watts	32 mg
 - b. The design light output per lamp (light at 40% of a lamp's useful life) in lumens; and
 - c. The rated average life of the lamp in hours.
9. **EXIT SIGNS:** Illuminated exit signs shall not contain mercury, and shall use less than 5 watts of electricity.
10. **CONCRETE:** Submit concrete mix design for each mix, designated by a distinct identifying code or number and signed by a Professional Engineer licensed in the state of New York.



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11. **INTERIOR LIGHTING FIXTURES:** For each lighting fixture type installed within the building's weather barrier, submit manufacturer's cut sheets indicating the following:
 - a. Fixture power in watts.
 - b. Initial lamp lumens.
 - c. Photometric distribution data.
 - d. Dimming capability, in range of percentages.
12. **EXTERIOR LIGHTING FIXTURES:** For each lighting fixture type installed on site, submit manufacturer's cut sheets indicating the following:
 - a. Fixture power in watts.
 - b. Initial lamp lumens.
 - c. Photometric distribution data.
 - d. Range of field adjustability, if any.
 - e. Warranty of suitability for exterior use.
13. **ALTERNATIVE TRANSPORTATION:** Submit manufacturer's cut sheets and/or shop drawings for the following items installed on site:
 - a. Bike racks, including total number of bicycle slots provided.
 - b. Signage indicating parking spaces reserved for electric or low-emitting vehicles and for carpools/vanpools, including total number of signs.
14. **WATER CONSERVING FIXTURES:** For all water consuming plumbing fixtures and fittings, submit manufacturer's cut sheets showing maximum flow rates and/or flush rates.
15. **ENERGY SAVING APPLIANCES:** Submit manufacturer's cut sheets and published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying the product's rating under the U.S. EPA/DOE Energy Star program, for all of the following:
 - a. Appliances (i.e., refrigerators, dishwashers, microwave ovens, televisions, clothes washers, clothes dryers, chilled water dispensers).
 - b. Office equipment (i.e., copy machines, fax machines, plotters/printers, scanners, binding and publishing equipment).
 - c. Electronics (i.e., servers, desktop computers, computer monitor displays, laptop computers, network equipment).
 - d. Commercial food service equipment.
16. **GLAZING:** For glazing in any windows, doors, storefront and window wall systems, curtainwall systems, skylights, and partitions, submit manufacturer's cut sheets indicating the following:
 - a. Glazed area.
 - b. Visible light transmittance.
 - c. Solar heat gain coefficient.
 - d. Fenestration assembly u-factor.
17. **VENTILATION:** Submit manufacturer's cut sheets for the following:
 - a. Carbon dioxide monitoring systems, if any, installed to measure outside air delivery.
 - b. Air filters: for detailed requirements refer to Section 01 81 19 INDOOR AIR QUALITY REQUIREMENTS FOR LEED BUILDINGS.
18. **REFRIGERATION:** For all refrigeration equipment, submit manufacturer's cut sheets indicating the following:
 - a. Equipment type.



- b. Equipment life. Default values specified by the 2007 ASHRAE Applications Handbook will be used unless otherwise demonstrated by the manufacturer's guarantee and an equivalent long-term service contract.
- c. Refrigerant type.
- d. Refrigerant charge in pounds of refrigerant per ton of gross cooling capacity.
- e. Tested refrigerant leakage rate, in percent per year. A default rate of 2% will be used unless otherwise demonstrated by test data.
- f. Tested end-of-life refrigerant loss, in percent. A default rate of 10% will be used unless otherwise demonstrated by test data.

1.7 LEED BUILDING SUBMITTAL REQUIREMENTS:

- A. The LEED Building Submittal information shall be assembled into one package per contract specification section(s) (or per subcontractor), and submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES. Incomplete or inaccurate LEED Building Submittals may be used as the basis for the rejection of products or assemblies.
- B. All final LEED Building Submittal information with back-up documentation shall be submitted within two (2) months of the Project's substantial completion. If in the Project's LEED review, the USGBC or their third party reviewer requires additional documentation as it relates to the LEED Building Submittals, the Contractor shall provide the requested documentation within two (2) weeks.

1.8 LEED ACTION PLANS:

- A. Construction Waste Management Plan- Refer to Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL for detailed requirements.
- B. Construction IAQ Management Plan- Refer to Section 01 81 19 INDOOR AIR QUALITY REQUIREMENTS FOR LEED BUILDINGS for detailed requirements.
- C. Erosion and Sedimentation Control (ESC) Plan:
 - 1. The Plan shall be in accordance with the New York State Department of Environmental Conservation (NYSDEC)'s New York State Standards and Specifications for Erosion and Sediment Control (Blue Book) or the 2012 EPA Construction General Permit, whichever is more stringent.
 - 2. The Plan shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.
 - 3. Detailed requirements: ESC Plan
 - a. Include the Stormwater Pollution Prevention Plan, if required.
 - b. Identify the party responsible for Plan monitoring and documentation. The party must be regularly on site.
 - c. Describe all site work that will be implemented on the Project and include timing of implementation.
 - d. Submit site plan with location of ESC measures, including, but not limited to, stormwater quantity controls, stormwater quality controls, stabilized construction entrances, washdown areas, inlet/catch basin protection and perimeter controls.
 - e. Establish and clearly delineate construction buffer zones to avoid soil compaction and other construction damage to greenfields.
 - f. Describe the inspection and maintenance protocols of the ESC measures. Submit a construction schedule indicating weekly site review.
 - g. Describe reporting and documentation measures.
 - 4. Detailed requirements: ESC Tracking Log



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- a. Note date of major rain events, describe damage, describe any repairs or maintenance of specific control measures performed, and note responsible party.
 - b. Note date and findings of weekly site review, describe any repairs or maintenance performed, and note responsible party. Submit date-stamped photographs, inspection reports or other recording processes.
 - c. Submit monthly.
5. Implementation
 - a. Before Demolition and/or Construction begins, the Contractor shall implement the ESC Plan, coordinate the Plan with all affected trades, and designate one individual as the Erosion and Sedimentation Control Representative, who will be responsible for communicating the progress of the Plan with the Commissioner monthly, and for assembling the required LEED documentation.
 - b. The Contractor shall be responsible for the provision, maintenance, and repair of all ESC measures. Any problems identified in site inspections shall be resolved in a timely manner.
 - c. Demonstration. The Contractor shall provide on-site instruction of proper construction practices required to prevent erosion and sedimentation.
 - d. All sub-contractors shall promptly notify the ESC Representative if damage to an ESC measure is observed.
 - e. Meetings. Urgent or ongoing ESC issues shall be discussed at weekly on-site job meetings.
6. All projects, including zero lot line buildings and projects that cause minimal or even no exterior site disturbance, must have ESC Plan that meets requirements.
7. Contractor shall save such original documents for the life of the Project plus seven (7) years.

1.9 QUALITY ASSURANCE:

- A. The Contractor shall implement all LEED Action Plans, coordinate the Plans and LEED Building Submittals with all affected trades, and designate one individual as the Sustainable Construction Representative at no additional cost to the City of New York, who will be responsible for communicating the progress of LEED activities with the Commissioner monthly, and for assembling the required LEED documentation. The Contractor shall facilitate measurements taken by authorized parties on site for LEED compliance verification purposes.
- B. Responsibilities of Contractor's Subcontractors: The Contractor shall be responsible for his/her subcontractors complying with the LEED Action Plans and for providing required LEED documentation as required for the Project.
- C. Distribution and Compilation: The Contractor shall be responsible for distributing the LEED v4 MR Credits Calculator for Building Product Disclosure and Optimization, the LEED v4 EQ Credit Low-Emitting Materials Calculator, and any other forms or templates required for the subcontractors to record LEED documentation. The Contractor shall also be responsible for collecting and compiling Building Product Disclosure and Optimization and Low-Emitting Materials information into packages as described in Section 01 33 00 SUBMITTAL PROCEDURES.
- D. Meetings: Sustainable design and construction issues shall be discussed at the following meetings in accordance with Section 01 31 00 PROJECT MANAGEMENT AND COORDINATION:
 1. Demolition kick-off meeting
 2. Construction kick-off meeting
 3. Construction kick-off meeting for LEED (independent meeting)
 4. Weekly job-site progress and coordination meetings
 5. Closeout meeting

1.10 REFERENCES:

- A. New York State Standards and Specifications for Erosion and Sediment Control, amended November 2016: http://www.dec.ny.gov/docs/water_pdf/2016nysstanec.pdf



- B. 2012 EPA Construction General Permit: <https://www.epa.gov/npdes/epas-2012-construction-general-permit-cgp-and-related-documents>
- C. South Coast Air Quality Management District (SCAQMD), Rule 1168: www.aqmd.gov
- D. South Coast Air Quality Management District (SCAQMD), Rule 1113: www.aqmd.gov
- E. CDPH Standard Method v1.1-2010: www.cal-iaq.org
- F. ISO 17025: www.iso.org
- G. ISO Guide 65: www.iso.org
- H. CARB 93120 ATCM: arb.ca.gov/toxics/compwood/compwood.htm
- I. ANSI/BIFMA M7.1 Standard Test Method for Determining VOC Emissions from Office Furniture Systems, Components and Seating: bifma.org
- J. ANSI/BIFMA e3-2011 Furniture Sustainability Standard: bifma.org
- K. ISO 14021–1999, Environmental labels and declarations—Self Declared Claims (Type II Environmental Labeling): iso.org
- L. ISO 14025–2006, Environmental labels and declarations (Type III Environmental
- M. Declarations—Principles and Procedures): iso.org
- N. ISO 14040–2006, Environmental management, Life cycle assessment principles, and frameworks: iso.org
- O. ISO 14044–2006, Environmental management, Life cycle assessment requirements, and guidelines: iso.org
- P. International Standard ISO 21930–2007 Sustainability in building construction—Environmental declaration of building products: iso.org
- Q. Federal Trade Commission, Guides for the Use of Environmental Marketing Claims, 16 CFR 260.7 (e): ftc.gov/bcp/grnrule/guides980427.htm
- R. Global Reporting Initiative (GRI) Sustainability Report: globalreporting.org/
- S. Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational
- T. Enterprises: oecd.org/daf/internationalinvestment/guidelinesformultinationalenterprises/
- U. U.N. Global Compact, Communication of Progress: unglobalcompact.org/cop/
- V. ISO 26000—2010 Guidance on Social Responsibility: iso.org/iso/home/standards/iso26000.htm
- W. Forest Stewardship Council: ic.fsc.org
- X. Sustainable Agriculture Network: sanstandards.org
- Y. The Rainforest Alliance: rainforest-alliance.org/
- Z. ASTM Test Method D6866: astm.org/Standards/D6866.htm
- AA. Chemical Abstracts Service: cas.org/
- BB. Health Product Declaration: hpdcollaborative.org/
- CC. Cradle-to-Cradle CertifiedCM Product Standard: c2ccertified.org/product_certification
- DD. Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): echa.europa.eu/support/guidance-on-reach-and-clp-implementation
- EE. GreenScreen: <https://www.greenscreenchemicals.org/method/greenscreen-list-translator>



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PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 81 13.04



SECTION 01 81 13.13

**VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES, SEALANTS, PAINTS AND COATINGS FOR
LEED v3 BUILDINGS**

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 81 13.13

PART I – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY:

- A. This Section includes requirements for volatile organic compound (VOC) content in adhesives, sealants, paints and coatings used for the project.
- B. All sections in the Project Specifications with adhesives, sealant or sealant primer applications, paints and coatings will follow all requirements of this section. In the event of any conflict or inconsistency between this section and the Specifications regarding adhesives, sealant or sealant applications, paints and coatings, the requirements set forth in this Section will prevail.
- C. This Section includes:
 - 1. General Requirements
 - 2. References
 - 3. VOC Requirements for Interior Adhesives
 - 4. VOC Requirements for Interior Sealants
 - 5. VOC requirements for Interior Paints
 - 6. VOC requirements for Interior Coatings
 - 7. Submittals

1.3 RELATED SECTIONS: Include without limitation the following:

- A. Section 01 10 00 SUMMARY
- B. Section 01 31 00 PROJECT MANAGEMENT AND COORDINATION
- C. Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION
- D. Section 01 33 00 SUBMITTAL PROCEDURES
- E. Section 01 73 00 EXECUTION
- F. Section 01 77 00 CLOSEOUT PROCEDURES
- G. Section 01 78 39 CONTRACT RECORD DOCUMENTS
- H. Section 01 81 13 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v3 BUILDINGS
- I. Section 01 81 19 INDOOR AIR QUALITY FOR LEED BUILDINGS

1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.



ADHESIVE	<p>Any substance used to bond one surface to another by attachment. Includes adhesive primers and adhesive bonding primers.</p> <p>A. Aerosol Adhesive: Any adhesive packaged as an aerosol with a spray mechanism permanently housed in a non-refillable can designed for hand-held application without the need for ancillary equipment.</p>
CARCINOGEN	<p>A chemical listed as a known, probable, reasonably anticipated, or possible human carcinogen by the International Agency for Research on Cancer (IARC) (Groups 1, 2A, and 2B), the National Toxicology Program (NTP) (Groups 1 and 2), the U.S. Environmental Protection Agency (EPA) Integrated Risk Information System (IRIS) (weight-of-evidence classifications A, B1, B2, and C, carcinogenic, likely to be carcinogenic, and suggestive evidence of carcinogenicity or carcinogen potential), or the Occupational Safety and Health Administration (OSHA).</p>
CLEAR WOOD FINISH	<p>Clear/semi-transparent coating applied to wood substrates to provide a transparent or translucent solid film.</p> <p>A. Lacquer: Clear/semi-transparent coating formulated with cellulosic or synthetic resins to dry by evaporation without chemical reaction and provide a solid, protective film.</p> <p>B. Sanding Sealer: A sanding sealer that also meets the definition of a lacquer.</p> <p>C. Varnish: Clear/semi-transparent coating, excluding lacquers and shellacs, formulated to dry by chemical reaction on exposure to air. May contain small amounts of pigment.</p>
COATING	<p>Liquid, liquefiable, or mastic composition that is converted to a solid adherent film after application to a substrate as a thin layer; and is used for decorating, protecting, identifying or to serve some functional purpose such as the filling or concealing of surface irregularities or the modification of light and heat radiation characteristics; and is intended for on-site application to interior or exterior surfaces of buildings. Does not include stains, clear finishes, recycled latex paint, specialty (industrial, marine or automotive) coatings or paint sold in aerosol cans.</p>
FLOOR COATING	<p>Opaque coating applied to flooring. Excludes industrial maintenance coatings.</p>
HAZARDOUS AIR POLLUTANT	<p>Any compound listed by the U.S. EPA in the Clean Air Act, Section 112(b)(1) as a hazardous air pollutant.</p>



MUTAGEN	A. A chemical that meets the criteria for category 1, chemicals known to induce heritable mutations or to be regarded as if they induce heritable mutations in the germ cells of humans, under the Harmonized System for the Classification of Chemicals Which Cause Mutations in Germ Cells (United Nations Economic Commission for Europe, Globally Harmonized System of Classification and Labeling of Chemicals).
OZONE-DEPLETING COMPOUNDS	A. A compound with an ozone-depletion potential greater than 0.1 (CFC 11=1) according to the U.S. EPA list of Class I and Class II Ozone-Depleting Substances.
PAINT	A. A pigmented coating. For the purposes of this specification, paint primers are considered to be paints. <ol style="list-style-type: none"> 1. Flat Coating or Paint: Has a gloss of less than 15 (using an 85-degree meter) or less than 5 (using a 60-degree meter). 2. Non-Flat Coating or Paint: Has a gloss of greater than or equal to 15 (using an 85-degree meter) or greater than or equal to 5 (using a 60-degree meter). 3. Non-Flat High-Gloss Coating or Paint: Has a gloss of greater than or equal to 70 (using a 60-degree meter). 4. Anti-Corrosive / Rust Preventative Paint: Coating formulated and recommended for use in preventing the corrosion of ferrous metal substrates.
PRIMER	Coating that is formulated and recommended for one or more of the following purposes: to provide a firm bond between the substrate and a subsequent coating; to prevent a subsequent coating from being absorbed into the substrate; to prevent harm to a subsequent coating from materials in the substrate; or to provide a smooth surface for application of a subsequent coating.
REPRODUCTIVE TOXIN	A chemical listed as a reproductive toxin (including developmental, female, and male toxins) by the State of California under the Safe Drinking Water and Toxic Enforcement Act of 1986 (California Code of Regulations, Title 22, Division 2, Subdivision 1, Chapter 3, Sections 1200, et. Seq.).
SANDING SEALER	Clear/semi-transparent coating formulated to seal bare wood. Can be abraded to create a smooth surface for subsequent coatings. Does not include sanding sealers that are lacquers (see Clear Wood Finish above).
SEALANT	Any material with adhesive properties, formulated primarily to fill, seal, or waterproof gaps or joints between surfaces. Includes sealant primers and caulks.



SHELLAC	Clear or pigmented coating formulated solely with the resinous secretions of the lac beetle, thinned with alcohol and formulated to dry by evaporation without chemical reaction. Excludes floor applications.
STAIN	Clear semi-transparent/opaque coating formulated to change the color but not conceal the grain pattern or texture of the substrate.
VOLATILE AROMATIC COMPOUND	Any hydrocarbon compound containing one or more 6-carbone benzene rings, and having an initial boiling point less than or equal to 280 degrees Celsius measured at standard conditions of temperature and pressure.
VOLATILE ORGANIC COMPOUND	Any compound of carbon (excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate) which vaporizes (becomes a gas) and participates in atmospheric photochemical reactions, as specified in Part 51.00 of Chapter 40 of the U.S. Code of Federal Regulations, at normal room temperatures. For the purposes of this specification, formaldehyde and acetaldehyde are considered to be VOCs.
WATERPROOFING SEALER	A coating that prevents the penetration of water into porous substrates.

1.5 GENERAL REQUIREMENTS:

- A. The City of New York is committed to implementing good environmental practices and procedures which include achieving a LEED Green building rating. Specific project requirements related to this goal which may impact this area of work are listed in the applicable paragraphs of this specification section. The Contractor must ensure that the requirements as defined in the sections below and in related sections of the Contract Documents, are implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor or their Subcontractors, must not be allowed if such changes compromise the stated environmental goals.

1.6 REFERENCES:

- A. Rule 1168 – “Adhesive and Sealant Applications”, amended 7 January 2005): South Coast Air Quality Management District (SCAQMD), State of California, www.aqmd.gov
- B. Rule 1113 - “Architectural Coatings”, amended 9 July 2004: South Coast Air Quality Management District (SCAQMD), State of California, www.aqmd.gov
- C. Green Seal Standard GS-11- “Paints”, of Green Seal, Inc., Washington, DC, www.greenseal.org
- D. Green Seal Standard GC-03- “Anti-Corrosive Paints”, of Green Seal, Inc., Washington, DC, www.greenseal.org

1.7 VOC REQUIREMENTS FOR INTERIOR ADHESIVES, SEALANTS, PAINTS AND COATINGS:

- A. GENERAL: Unless otherwise specified herein, the VOC content of all interior adhesives, sealants, paints and coatings (herein referred to as “products”) must not be in excess of **250 grams per liter**.
- B. No product shall contain any ingredients that are carcinogens, mutagens, reproductive toxins, persistent bioaccumulative compounds, hazardous air pollutants, or ozone-depleting compounds. An exception must be made for titanium dioxide and, for products that are pre-tinted by the manufacturer, carbon black, which shall be less than or equal to 1% by weight of the product.

VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES,
SEALANTS, PAINTS AND COATINGS FOR LEED v3 BUILDINGS



- C. No product will contain the following:
1. methylene chloride
 2. 1,1,1-trichloroethane
 3. benzene
 4. toluene
 5. ethylbenzene
 6. vinyl chloride
 7. naphthalene
 8. 1,2-dichlorobenzene
 9. di (2-ethylhexyl) phthalate
 10. butyl benzyl phthalate
 11. di-n-butyl phthalate
 12. di-n-octyl phthalate
 13. diethyl phthalate
 14. dimethyl phthalate
 15. isophorone
 16. antimony
 17. cadmium
 18. hexavalent chromium
 19. lead
 20. mercury
 21. formaldehyde
 22. methyl ethyl ketone
 23. methyl isobutyl ketone
 24. acrolein
 25. acrylonitrile
- D. No product will contain more than 1.0% by weight of sum total of volatile aromatic compounds.

1.8 VOC REQUIREMENTS FOR INTERIOR ADHESIVES:

- A. The volatile organic compound (VOC) content of adhesives, adhesive bonding primers, or adhesive primers used in this project shall not exceed the limits defined in Rule 1168 – “Adhesive and Sealant Applications” of the South Coast Air Quality Management District (SCAQMD), of the State of California.
- B. The VOC limits defined by SCAQMD are as follows. All VOC limits are defined in grams per liter, less water and less exempt compounds.
- C. For specified building construction related applications, the allowable VOC content is as follows:
1. Architectural Applications:

a. Indoor carpet adhesive	50
b. Carpet pad adhesive	50
c. Wood flooring adhesive	100
d. Rubber floor adhesive	60
e. Subfloor adhesive	50
f. Ceramic tile adhesive	65
g. VCT and asphalt tile adhesive	50
h. Drywall and panel adhesive	50
i. Cove base adhesive	50
j. Multipurpose construction adhesive	70
k. Structural glazing adhesive	100
 2. Specialty Applications:

a. PVC welding	510
----------------	-----



- | | | |
|-------------------------------------|-----------------------------------------------|---------------------|
| b. | CPVC welding | 490 |
| c. | ABS welding | 325 |
| d. | Plastic cement welding | 250 |
| e. | Adhesive primer for plastic | 550 |
| f. | Contact Adhesive | 80 |
| g. | Special Purpose Contact Adhesive | 250 |
| h. | Structural Wood Member Adhesive | 140 |
| i. | Sheet Applied Rubber Lining Operations | 850 |
| j. | Top and Trim Adhesive | 250 |
| 3. Substrate Specific Applications: | | |
| a. | Metal to metal | 30 |
| b. | Plastic foams | 50 |
| c. | Porous material (except wood) | 50 |
| d. | Wood | 30 |
| e. | Fiberglass | 80 |
| 4. Aerosol Adhesives: | | |
| a. | General purpose mist spray | 65% VOC's by weight |
| b. | General purpose web spray | 55% VOC's by weight |
| c. | Special purpose aerosol adhesives (all types) | 70% VOC's by weight |

1.9 VOC REQUIREMENTS FOR INTERIOR SEALANTS:

- A. The volatile organic compound (VOC) content of sealants, or sealant primers used in this project must not exceed the limits defined in Rule 1168 – “Adhesive and Sealant Applications” of the South Coast Air Quality Management District (SCAQMD), of the State of California.
- B. The VOC limits defined by SCAQMD are as follows. All VOC limits are defined in grams per liter, less water and less exempt compounds.
- | | | |
|--------------------|---------------------------|-----|
| 1. Sealants: | | |
| a. | Architectural | 250 |
| b. | Non-membrane roof | 300 |
| c. | Roadway | 250 |
| d. | Single-ply roof membrane | 450 |
| e. | Other | 420 |
| 2. Sealant Primer: | | |
| a. | Architectural – Nonporous | 250 |
| b. | Architectural – Porous | 775 |
| c. | Other | 750 |

1.10 VOC REQUIREMENTS FOR INTERIOR PAINTS:

- A. Paints and Primers: Paints and primers used in non-specialized interior applications (i.e., for wallboard, plaster, wood, metal doors and frames, etc.) shall meet the VOC limitations of the Green Seal Paint Standard GS-11, of Green Seal, Inc., Washington, DC. Product-specific environmental requirements are as follows:

1. Volatile Organic Compounds:
- a. The VOC concentrations (in grams per liter) of the product shall not exceed those listed below as determined by U. S. Environmental Protection Agency (EPA) Reference Test Method 24.

Interior Paints and Primers:

Non-flat: 150 g/l

VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES,
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Flat: 50 g/l

The calculation of VOC shall exclude water and tinting color added at the point of sale.

- B. Anti-Corrosive and Anti-Rust Paints: Anti-corrosive and anti-rust paints applied to interior ferrous metal substrates must meet the VOC limitations of the Green Seal Paint Standard GC-03, of Green Seal, Inc., Washington, DC. Product-specific environmental requirements are as follows:

1. Volatile Organic Compounds:

- a. The VOC concentrations (in grams per liter) of the product shall not exceed those listed below as determined by U. S. Environmental Protection Agency (EPA) Reference Test Method 24.

Anti-Corrosive and Anti-Rust Paints: 250 g/l

The calculation of VOC must exclude water and tinting color added at the point of sale.

1.11 VOC REQUIREMENTS FOR INTERIOR COATINGS:

- A. Clear wood finishes, floor coatings, stains, sealers, and shellacs applied to the interior must meet the VOC limitations defined in Rule 1113, "Architectural Coatings" of SCAQMD, of the State of California. The VOC limits defined by SCAQMD, based on 7/9/04 amendments, are as follows. VOC limits are defined in grams per liter, less water and less exempt compounds.

1. Clear Wood Finishes:

- | | |
|--------------------|-----|
| a. Varnish | 350 |
| b. Sanding Sealers | 350 |
| c. Lacquer | 550 |

2. Shellac:

- | | |
|--------------|-----|
| a. Clear | 730 |
| b. Pigmented | 550 |

3. Stains 250

4. Floor Coatings 100

5. Waterproofing Sealers 250

6. Sanding Sealers 275

7. Other Sealers 200

The calculation of VOC must exclude water and tinting color added at the point of sale.

1.12 SUBMITTALS:

- A. Submit Material Safety Data Sheets, for all applicable products in accordance with Section 01 33 00, SUBMITTAL PROCEDURES. Applicable products include, but are not limited to adhesives, sealants, carpets, paints and coatings. Material Safety Data Sheets must indicate the Volatile Organic Compound (VOC) limits of products submitted. (If an MSDS does not include a product's VOC limits, then product data sheets, manufacturer literature, or a letter of certification from the manufacturer can be submitted in addition to the MSDS to indicate the VOC limits).
- B. Submit Environmental Building Materials Certification Form (EBMCF) as referenced in Section 01 81 13.03 SUSTAINABLE REQUIREMENTS FOR LEED v3 BUILDINGS: For each field-applied adhesive, sealant, paint, and coating product, provide the VOC requirement, as provided in this Specification, for the relevant material category indicated on the documentation noted above.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 81 13.13



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VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES,
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**SECTION 01 81 19
INDOOR AIR QUALITY REQUIREMENTS FOR LEED BUILDINGS**

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 81 19

PART I – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].

1.2 CONSTRUCTION IAQ MANAGEMENT GOALS FOR THE PROJECT:

- A. The City of New York has determined that this Project must minimize the detrimental impacts on Indoor Air Quality (IAQ) resulting from construction activities. Factors that contaminate indoor air, such as dust entering HVAC systems and ductwork, improper storage of materials on-site, and poor housekeeping, must be minimized.

1.3 RELATED SECTIONS:

- A. All sections of the Specifications related to interior construction, MEP systems and items affecting indoor air quality.
- B. Division 9 (of the Specifications): Finishes.
- C. Refer to the Addendum to identify whether this project is designed to comply with a Certification Level according to the U.S. Green Building Council's LEED Rating System, as specified in Section 01 81 13.03 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v3 BUILDINGS or Section 01 81 13.04 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v4 BUILDINGS.
- D. Refer to the Addendum to identify whether this project is designed to comply with Section 01 81 13.13 VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES, SEALANTS, PAINTS AND COATINGS FOR LEED v3 BUILDINGS.
- E. Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS.

1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

Design Consultant	The entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.
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Volatile Organic Compounds (VOCs)	Chemical compounds common in and emitted by many building products, including solvents in paints, coatings, adhesives and sealants, wood preservatives, composite wood binder, and foam insulations. Not all VOCs are harmful, but many of those contained within building products contribute to the formation of smog and may irritate building occupants by their smell or health impact.
Materials that act as “sinks” for VOC contamination	Absorptive materials, typically dry and soft materials (such as textiles, carpeting, acoustical ceiling tiles and gypsum board) that readily absorb VOCs emitted by “source” materials and release them over a prolonged period of time.
Materials that act as “sources” for VOC contamination	Products with high VOC contents that emit VOCs either rapidly during application and curing (typically “wet” products, such as paints, sealants, adhesives, caulks and sealers) or over a prolonged period (typically “dry” products such as flooring coverings with plasticizers and engineered wood with formaldehyde).

1.5 REFERENCES, RESOURCES:

- A. “IAQ Guidelines for Occupied Buildings Under Construction”, Second Edition, 2007, The Sheet Metal and Air Conditioner Contractors National Association (SMACNA). (703) 803-2980, www.smacna.org.
- B. ANSI/ASHRAE 52.2-2007, “Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size”, www.ashrae.org.

1.6 LEED BUILDING GENERAL REQUIREMENTS:

- A. Implement practices and procedures as necessary to meet the Project’s environmental performance goals as set forth in the specific requirements of this section. Specific Project goals that may impact this area of work include: use of recycled-content materials; use of low-emitting materials; construction waste recycling; and the implementation of a construction indoor air quality management plan. Ensure that the requirements related to these goals, as defined in this section, are implemented to the fullest extent. Substitutions or other changes to the work will not be allowed if such changes compromise the stated LEED building performance criteria.

1.7 CONSTRUCTION IAQ MANAGEMENT PLAN:

- A. The Contractor must prepare a Construction IAQ Management Plan in coordination with each Subcontractor and submit the Construction IAQ Management Plan to the Commissioner for approval in accordance with Section 01 33 00 SUBMITTAL PROCEDURES. The Construction IAQ Management Plan must meet the following criteria:
 - 1. Construction activities must be planned to meet or exceed the minimum requirements of SMACNA’s “IAQ Guidelines for Occupied Buildings under Construction”, Second Edition, 2007.
 - 2. Absorptive materials must be protected from moisture damage when stored on-site and after installation.
 - 3. The planned operation of air handlers during construction must be described. If air handlers are to be used during construction, filtration media with a Minimum Efficiency Reporting Value (MERV) of 8 must be used at each return air grille and return or transfer duct inlet opening, such that there is no bypass around the filtration media, as determined by ASHRAE 52.2-2007.
 - 4. Filtration media must be replaced immediately prior to occupancy. Filtration media must have a MERV of 13 as determined by ASHRAE 52.2-2007.
 - 5. A sequence of finish installation plan “Plan” must be developed, highlighting measures to reduce the absorption of VOCs by materials that act as “sinks”.



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6. The use of tobacco products is prohibited inside the building and within 25 feet of the building entrance during construction.
 7. A flush-out or air testing must be performed.
 8. Upon approval of the finish installation plan by the Commissioner, it must be implemented by the Contractor through the duration of the construction process, and documented in accordance with the Submittal Requirements of Sub-Section 1.8 herein.
- B. Detailed requirements of the Construction IAQ Management Plan are as follows:
1. SMACNA Guidelines: Chapter 3 of the referenced "IAQ Guidelines for Occupied Buildings Under Construction", outline IAQ measures in five categories as listed below. The Construction IAQ Management Plan must be organized in accordance with the SMACNA format, and must address measures to be implemented in each of the five categories (including subsections). All subsections must be listed in the Plan; items that are not applicable for this Project should be listed as such.
 - a. HVAC Protection
 - 1) Protect air handling, distribution equipment and air supply, and return ducting during construction.
 - 2) All ductwork arriving on site will be sealed with plastic sheeting and stored on pallets or dunnage until installed.
 - 3) Cover and protect all exposed air inlets and outlets, openings, grilles, ducts, plenums, etc. to prevent water, moisture, dust and other contaminant intrusion.
 - 4) Apply protection immediately after ducting.
 - 5) Protect ducting runs at the end of day's work.
 - 6) Inspect temporary filtration weekly and replace as required to maintain the proper ventilation rates in the building.
 - 7) To reduce debris and contamination to mechanical systems, do not store materials in mechanical rooms.
 - b. Source Control
 - 1) Protect stored on-site or installed absorptive or porous materials. Store materials in dry conditions indoors, under cover, and off the ground or floor.
 - 2) Do not use wet or damaged porous materials in the building. Materials which become contaminated through direct exposure to moisture from precipitation, plumbing leaks, or condensation must be replaced by the Contractor, at no additional cost to the City of New York.
 - 3) Use low-toxicity and low-VOC materials to the greatest extent possible.
 - 4) Recover, isolate, and ventilate containers housing toxic materials and materials with VOC levels above the limits for interior adhesives, sealants, paints, and coatings described in these Specifications.
 - 5) Prevent exhaust fumes from idling vehicles, equipment and fossil-fueled tools from entering the building.
 - 6) Containers housing toxic materials and materials with VOC levels above the limits for interior adhesives, sealants, paints, and coatings described in these Specifications, must be closed when not in use.
 - 7) Enforce the no-smoking job site policy.



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- c. Pathway Interruption
 - 1) Depressurize work areas which contain dust and odors.
 - 2) Pressurize occupied spaces to prevent intrusion of dust and odors.
 - 3) Erect barriers to contain construction areas.
 - 4) Relocate pollutant sources.
 - 5) Temporarily seal the building and provide 100% outside air for ventilation.
 - 6) Provide walk-off mats at entryways to reduce introduced dirt and pollutants.
 - 7) Use dust guards and collectors on saws and other tools.
 - d. Housekeeping
 - 1) Store materials on elevated platforms under cover, in a designated dry, clean location, prior to unpacking for installation.
 - 2) If materials are not stored in an enclosed location, cover tops and sides of material with waterproof sheeting, securely tied.
 - 3) Institute cleaning activities to remove contaminants from the building prior to occupancy. Clean all coils, air filters and ductwork prior to performing testing, adjusting and balancing of HVAC systems.
 - 4) Sweep the work area on a daily basis. Use an efficient and effective dust collecting method such as damp cloth, wet mop, or vacuum with high-efficiency particulate filters. Activities which produce high levels of dust must be cleaned up immediately upon completion.
 - 5) Spills or excess applications of products containing solvents, or with VOC levels above the limits for interior adhesives, sealants, paints and coatings described in these Specifications, must be removed immediately.
 - 6) Dust all walls prior to application of finishes.
 - 7) Vacuum all stud tracks prior to application of insulation.
 - 8) Keep materials organized to improve job safety as well as indoor air quality.
 - e. Scheduling
 - 1) Phase construction such that absorptive materials are installed only in areas that are weathertight.
 - 2) Schedule activities that utilize “sources” of VOC contamination to take place prior to installing high absorbent materials that will act as “sinks” for contaminants.
 - 3) Review of the appropriate components of the Construction IAQ Management Plan must be a regular action topic at weekly site coordination meetings. Implementation of the Plan must be documented in the meeting minutes.
- 2. Protection of Materials from Moisture Damage: As part of the “Source Control” section of the Construction IAQ Management Plan, measures to prevent installed materials or material stored on-site from moisture damage must be described. This section must also describe corrective measures to be taken if moisture damage does occur to absorptive materials during the course of construction (see Section 1.7 B.1.b).
 - 3. Replacement of Filtration Media: Under the “HVAC Protection” section of the Construction IAQ Management Plan, a description of the filtration media in all ventilation equipment must be provided.



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The description must include replacement criteria for filtration media during construction, and confirmation of filtration media replacement for all equipment immediately prior to occupancy.

4. Sequence of Finish Installation for Materials: Where feasible, absorptive materials must be installed after the installation of materials or finishes which have high short-term emissions of VOCs, formaldehyde, particulates, or other air-borne compounds. Absorptive materials include, but are not limited to: carpets; acoustical ceiling panels; fabric wall coverings; insulations (exposed to the airstream); upholstered furnishings; and other woven, fibrous or porous materials. Materials with high short-term emissions include, but are not limited to: adhesives, sealants and glazing compounds (specifically those with petrochemical vehicles or carriers); paints, wood preservatives and finishes; control and/or expansion joint fillers; hard finishes requiring adhesive installation; gypsum board (with associated finish processes and products); and composite or engineered wood products with formaldehyde binders.
5. Pre-Occupancy Phase: Perform either a flush-out or air sample testing (Options 1 or 2, respectively), as follows:

a. OPTION 1 — Flush-Out

- 1) Perform flush-out using either Path 1 or Path 2.
 - i. Path 1: After construction ends, prior to occupancy and with all interior finishes installed, install new filtration media and perform a building flush-out by supplying a total air volume of 14,000 cu.ft. of outdoor air per sq.ft. of floor area while maintaining an internal temperature of at least 60 degrees F and no higher than 80 degrees F and relative humidity no higher than 60%.
 - ii. Path 2: If occupancy is desired prior to completion of the flush-out, the space may be occupied following delivery of a minimum of 3,500 cu.ft. of outdoor air per sq.ft. of floor area to the space. Once a space is occupied, it must be ventilated at a minimum rate of 0.30 cfm/sq.ft. of outside air or the design minimum outside air rate determined in IEQ Prerequisite: Minimum Indoor Air Quality Performance, whichever is greater. During each day of the flush-out period, ventilation must begin a minimum of three hours prior to occupancy and continue during occupancy. These conditions must be maintained until a total of 14,000 cu.ft./sq.ft. of outside air has been delivered to the space.
- 2) Commissioning can occur during flush-out, at the discretion of the Commissioner, provided none of the commissioning procedures introduce contaminants into the space and none of the flush-out procedures circumvent the commissioning process. Complete testing and balancing of the HVAC system after the flush-out is complete. Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS.
- 3) If even partial construction work occurs during the flush-out, the flush-out must be started again from the beginning for that space. If multiple, discrete HVAC systems operate independently, flush-out may be completed in portions of the building as work is completed in each area served by a given system.

OR

b. OPTION 2 — Air Testing

- 1) Conduct baseline IAQ testing, after construction ends and prior to occupancy, using testing protocols consistent with current versions of the United States Environmental Protection Agency "Compendium of Methods for the Determination of Air Pollutants in Indoor Air" or ISO methods, as additionally detailed in the USGBC "LEED BD+C Reference Guide."



- 2) Demonstrate that the contaminant maximum concentrations listed below are not exceeded.

CONTAMINANT	MAXIMUM CONCENTRATION
Formaldehyde	27 parts per billion
Particulates (PM10 for all buildings; PM25 for buildings in EPA nonattainment areas, or local equivalent)	PM10: 50 micrograms per cubic meter PM25: 15 micrograms per cubic meter
Ozone (for buildings in EPA nonattainment areas)	0.075 parts per million
Total Volatile Organic Compounds (TVOC)	500 micrograms per cubic meter
Target chemicals listed in the California Department of Public Health (CDPH) Standard Method c1.1, Table 4-1, except formaldehyde	CDPH Standard Method v1.1-2010, Allowable Concentrations, Table 4-1
Carbon Monoxide (CO)	9 part per million and no greater than 2 parts per million above outdoor levels

- 3) The air sample testing must be conducted as follows:
- All measurements must be conducted prior to occupancy, but during normal occupied hours and with the building ventilation system starting at the normal daily start time and operated at the minimum outside air flow rate for the occupied mode throughout the duration of the air testing.
 - The building must have all interior finishes installed, including but not limited to millwork, doors, paint, carpet and acoustic tiles. Non-fixed furnishings such as workstations and partitions are required to be in place for the testing.
 - Prior to air sample testing, all punch-list items that would generate VOCs or other contaminants, the testing and balancing of the HVAC system and finalization of all cleaning must be completed. Use low-emitting cleaning products and vacuum cleaners with HEPA filtration.
 - The number of sampling locations will vary depending upon the size of the building and number of ventilation systems. For each portion of the building served by a separate ventilation system, the number of sampling points must not be less than one per 25,000 sq.ft., or for each contiguous floor area, whichever is larger, and include areas with the least ventilation and greatest presumed source strength.
 - Air samples must be collected between 3 feet and 6 feet from the floor to represent the breathing zone of occupants, and over a minimum 4-hour period.
 - For each sampling point where the maximum concentration limits are exceeded, conduct additional flush-out with outside air and retest the specific parameter(s) exceeded to indicate the requirements are achieved. Repeat procedure until all requirements have been met. When retesting non-complying building areas, take samples from the same locations as in the first test.
6. Implementation and Coordination: Before Demolition and/or Construction begins, the Contractor must implement the Construction IAQ Management Plan, coordinate the Construction IAQ Management Plan with all affected trades, and designate one individual as the Construction IAQ Representative at no additional cost to the City of New York, who will be responsible for communicating the progress of the Construction IAQ Management Plan with the Commissioner monthly and for assembling the required LEED documentation. Include provisions in the Construction



IAQ Management Plan for addressing conditions in the field that do not adhere to the Plan, including provisions to implement a stop work order or to rectify non-compliant conditions.

- a. Distribution: The Contractor must distribute copies of the Construction IAQ Management Plan in accordance with Section 01 33 00 SUBMITTAL PROCEDURES.
- b. Instruction: The Contractor must provide on-site instruction of appropriate site management to all Contractor's Subcontractors.
- c. Monitoring: The Construction IAQ Representative must monitor the implementation of the Construction IAQ Management Plan.

1.8 SUBMITTALS:

- A. Submit the following LEED-required records and documents in accordance with Section 01 33 00 SUBMITTAL PROCEDURES and, as applicable, Section 01 81 13.03 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v3 BUILDINGS or Section 01 81 13.04 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED v4 BUILDINGS.
- A. A copy of the Construction IAQ Management Plan as defined in Sub-Section 1.7 herein.
- B. IAQ Tracking Log
 1. Note date of observed major Construction IAQ issues, describe any damage, describe any repairs or maintenance of specific control measures performed and note responsible party.
 2. Note date and findings of weekly site review, describe any repairs or maintenance performed, and note responsible party. Provide date-stamped photographs, inspection reports or other recording processes.
 3. Submit log monthly.
- B. Product cut-sheets for all filtration media used during construction and installed immediately prior to occupancy, with MERV values highlighted. Cut sheets must be submitted with the Contractor's or Subcontractor's "approved" stamp as confirmation that the products are the products installed on the Project.
- C. PHOTOGRAPHS: Submit to the Commissioner a minimum of 18 photographs as required under the provision for special photographs, in accordance with Section 01 32 33 PHOTOGRAPHIC DOCUMENTATION, comprised of at least six photographs taken on three different occasions during construction of each IAQ measure. The photographs must document the implementation of the Construction IAQ Management Plan throughout the course of the Project construction. Examples include photographs of ductwork sealing and protection, temporary ventilation measures, and conditions of on-site materials storage (to prevent moisture damage). Photographs must include integral date stamping, and must be submitted with brief descriptions of the Construction IAQ Management Plan measure documented, or be referenced to Project meeting minutes or similar Project documents which reference to the Construction IAQ Management Plan measure documented.
- D. A copy of the Project's "Testing, Adjusting and Balancing" (TAB) report, if applicable.

1.9 QUALITY ASSURANCE:

- A. The Contractor will be responsible for preparing and implementing the Construction IAQ Management Plan and must coordinate and incorporate the work of its Subcontractors in the IAQ Management Plan. Include the Construction IAQ Management Plan requirements in contract agreements with Subcontractors. Familiarize Subcontractors with the Construction IAQ Management Plan and how the Construction IAQ Management Plan will affect their daily activities. Hold a Subcontractors' orientation meeting to review the Construction IAQ Management Plan requirements.
- B. Responsibility of Subcontractors: Subcontractors for this Project will be responsible for cooperating with the Contractor in the preparation and implementation of the Construction IAQ Management Plan.



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- C. Include construction IAQ progress check-ins as a regular item in weekly Subcontractor meetings and safety meetings. Provide a copy of the plan on site, posted in an easily accessible area.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 81 19



SECTION 01 91 13

GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 91 13

PART I – GENERAL

1.1 RELATED DOCUMENTS:

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].
- B. The OPR and BOD documents are included by reference for information only.
- C. The Commissioning Plan, prepared by the Commissioning Agent (CxA) under separate contract with the City of New York, contains requirements that apply to this section.

1.2 SUMMARY:

This section includes general requirements that apply to implementation of Commissioning without regard to systems, subsystems and equipment being commissioned. General Requirements for building enclosure commissioning are addressed in a separate specification.

- A. This Section includes:
 - 1. Definitions
 - 2. Commissioning Team
 - 3. City's Responsibilities
 - 4. Contractor's Responsibilities
 - 5. CxA Responsibilities
 - 6. Commissioning Documentation
 - 7. Submittals
 - 8. Coordination
 - 9. Execution

1.3 RELATED SECTIONS:

- A. System-Specific Commissioning requirements indicated in other sections of the Project Specifications for specific requirements for commissioning systems.
- B. This Project will be commissioned by an independent third party under separate contract with the City of New York. Commissioning must be in accordance with ASHRAE and USGBC LEED procedures, and specific commissioning requirements of the Project Specifications, whichever is more stringent. The Contractor must cooperate with the CxA and provide whatever assistance is required.
- C. Related sections include, without limitation, the following:
 - 1. Section 01 10 00 SUMMARY
 - 2. Section 01 31 00 PROJECT MANAGEMENT AND COORDINATION
 - 3. Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION
 - 4. Section 01 78 39 CONTRACT RECORD DOCUMENTS
 - 5. Section 01 79 00 DEMONSTRATION AND OWNER'S PRE-ACCEPTANCE ORIENTATION
 - 6. Section 01 81 13 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS
 - 7. Section 01 91 15 GENERAL COMMISSIONING REQUIREMENTS FOR BUILDING ENCLOSURE



1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.

Basis of Design (BOD)	A document, prepared by the Design Consultant, that records concepts, calculations, decisions, and product selections used to meet the OPR and to satisfy applicable regulatory requirements, standards, and guidelines. The document includes both narrative descriptions and lists of individual items that support the design process.
Checklists	Forms that outline the step-by-step process that must be executed to fulfill the test requirements and to verify that materials, equipment, assemblies and systems are installed in accordance with the Contract Documents. The CxA must develop the checklists; the Contractor must complete them.
Commissioning	Commissioning is a systematic process of ensuring and documenting that the building systems, including the mechanical and electrical systems, have been installed in the prescribed manner, are functionally checked and capable of being operated and maintained to perform with the design intent and have documentation to support proper installation and operation. The process does not eliminate or reduce the responsibility of the installing contractors to provide a finished product.
Commissioning Agent (Aka Commissioning Authority) (CxA)	Consultant under separate contract with the City of New York to provide Commissioning services for this Project. The CxA must not be an employee of the Contractor, nor will the CxA have any interest in the Contract.
Commissioning Plan	A document developed by the CxA that outlines the organization, schedule, roles and responsibilities, allocation of resources, and documentation requirements of the commissioning process.
Deferred Performance Tests	Performance tests that are performed, at the discretion of the CxA, after substantial completion, due to partial occupancy, equipment, seasonal requirements, design, or other site conditions that disallow the test from being performed.
Design Consultant	The entity responsible for providing design services for the Project, including without limitation, preparing the construction documents (drawings and Specifications) and providing services in connection with such documents during construction. The entity serving as the "Design Consultant" may be a corporation, firm, partnership, joint venture, individual or combination thereof. Such entity may be either an employee(s) of the City or an entity engaged by the City to provide such services.
Factory Testing	Testing of equipment on-site or at the factory, by factory personnel, with or without the City's representative.
Functional Performance Test (FPT)	Functional performance testing includes the dynamic functions and operations of equipment and systems using manual or monitoring methods under various levels of operation. Systems are tested under various modes, such as during low cooling loads, high loads, component failures, unoccupied, varying outside air temperatures, fire alarms, power failure, etc. The systems are run through all the control system's sequences of operation and components are verified to respond as the sequences state. Such tests must be performed as per the protocol written by the CxA which defines the methods, personnel and expectations.
Issue (or Deficiency)	A condition in the installation or function of a component, piece of equipment, or system that is not in compliance with the Contract Documents.



Issues Log	A formal and ongoing record of problems, deficiencies or concerns that have been raised by members of the Commissioning Team during the course of commissioning. The Issues Log is the primary tracking tool to address all Commissioning Issues by concerned parties. All Issues must be addressed and resolved by the concerned parties before the closeout of the Project. This log tracks the resolution performed and date of closure of each Issue.
Master Equipment List (MEL)	A complete listing of all commissioned building equipment, including details such as make, model, location, ID Tag number, etc. that is taken from submittals and is the basis from which checklists will be generated. The MEL is a spreadsheet which is also used as a tracking tool for all milestones of the commissioning process, such as the creation and performance of checklists, startup of equipment, TAB work, etc.
Monitoring	The recording of parameters (flow, current, status, pressure, etc.) of equipment operation using data loggers or the trending capabilities of control systems.
Owner (City of New York) Contracted Tests	Tests paid for by the City of New York outside of the Contractor's Contract and for which the CxA does not provide oversight. These tests will not be repeated during functional testing if properly documented.
Owner's (City of New York) Project Requirements (OPR)	A document, prepared by the Design Consultant that details the functional requirements of a Project and the expectations of how it will be used and operated. These include Project goals, measurable performance criteria, cost considerations, benchmarks, success criteria, and supporting information.
Pre-functional (Installation) Checklists	A list of items to inspect and elementary component tests to conduct to verify proper installation of equipment, provided by the CxA to the Contractor. Installation checklists are primarily static inspections and procedures to prepare equipment or systems for initial operation. Pre-functional (Installation) checklists augment, and are combined with, the manufacturer's startup checklist. The Checklists are filled out by the Contractor and reviewed by the CxA.
Sampling	Functional testing for a percentage of the total number of identical or near-identical pieces of equipment.
Seasonal Performance Tests	Functional tests that are deferred until, or performed again when, the system(s) will experience climate conditions close to their design conditions.
Startup	The initial starting or activating of equipment, including executing construction checklists.
Systems, Subsystems, Equipment, and Components	Where these terms are used together or separately, they mean "as-built" systems, subsystems, equipment, and components.
Systems Manual	A system-focused composite document that includes the Operation and Maintenance Manual, and additional information of use to the owner during the occupancy and operations phase.
Testing, Adjusting and Balancing (TAB)	Testing, adjusting, and balancing of the Heating Hot Water (HHW), Chilled Water (CHW) and Heating, Cooling, and Ventilation Airflow distribution system flows and pressures as specified in Contract Documents by a subcontractor certified to perform such work.
Test Requirements	Requirements specifying what modes and functions, etc. must be tested on any given piece of equipment or any given system (integrated or standalone). The test requirements are not the detailed test procedures. The test requirements for each system are specified in the respective Contract Documents.



Trending	Monitoring using the building controls system, and analysis of the data gathered over a period of time.
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1.5 COMMISSIONING TEAM:

- A. Members Appointed by the Contractor and its Subcontractors: Individuals, each having authority to act on behalf of the entity he or she represents, explicitly organized to implement the Commissioning process through coordinated actions. The Commissioning Team will consist of, but not be limited to, representatives of the Contractor, including Project superintendent and Subcontractors, installers, suppliers and specialists deemed appropriate by the CxA.
- B. Members Appointed by the City:
 - 1. Commissioning Authority/Agent (CxA): The designated person, company, or entity under separate Contract with the City that plans, schedules and coordinates the Commissioning Team to implement the commissioning process.
 - 2. Representatives of the facility user and operation and maintenance personnel.
 - 3. Design Consultant and other concerned entities.

1.6 CITY'S RESPONSIBILITIES:

- A. Provide the OPR and BOD documentation to the CxA for use in developing the Commissioning Plan; systems manual; operation and maintenance orientation plan; and testing plans and checklists.
- B. Assign operation and maintenance personnel to participate in Commissioning Team activities.
- C. Provide full details and results of any Owner- contracted tests relevant to the current Project.

1.7 CONTRACTOR'S RESPONSIBILITIES:

- A. The Contractor must provide utility services required for the commissioning process.
- B. As a member of the Commissioning Team, the Contractor and Subcontractors must assign representatives with expertise and authority to act on behalf of the Contractor and its Subcontractor and schedule them to participate in and perform Commissioning Team activities including, but not limited to, the following:
 - 1. Participate in scheduled construction-phase coordination and Commissioning Team meetings.
 - 2. Integrate and coordinate commissioning process activities with the construction schedule.
 - 3. Provide all factory acceptance test reports to the CxA through the Commissioner.
 - 4. Respond to any additional specific information requests from the CxA. CxA may request additional documentation necessary for the commissioning process. Requests by CxA may precede, be concurrent with, or follow normal submittals.
 - 5. Ensure the cooperation and participation of all Subcontractors and manufacturers of equipment to be commissioned.
 - 6. Verify and confirm that components, equipment, and system are functioning as per design prior to CxA witnessing testing.
 - 7. Perform testing required in the Commissioning schedule as per the Commissioning process test procedures provided by the CxA, providing no less than 48 hours' notice to the CxA through the Commissioner.
 - 8. Complete installation checklists as Work is completed and return to CxA through the Commissioner.



9. Provide written responses to the CxA through the Commissioner for resolution of Issues recorded in the Issues Log within five (5) business days.
10. Evaluate performance deficiencies identified in test reports and, in collaboration with entity responsible for system and equipment installation, recommend corrective action.
11. Submit As-Built documents, operation and maintenance manuals for systems and subsystems, and equipment in accordance with Section 01 78 39 CONTRACT RECORD DOCUMENTS. Such documents must be submitted prior to functional testing.
12. Provide orientation sessions for operations and maintenance personnel (sessions will be witnessed by the CxA) in accordance with Section 01 79 00 DEMONSTRATION AND OWNER'S PRE-ACCEPTANCE ORIENTATION. Provide no less than 48 hours' notice to the CxA, through the Commissioner. Video record and edit orientation sessions and provide DVD to the CxA and Commissioner no later than two (2) weeks after the orientation session occurs. Edit as requested by the Commissioner.

1.8 COMMISSIONING AGENT'S (CxA) RESPONSIBILITIES:

- A. Organize and lead the Commissioning Team.
- B. Prepare a construction-phase Commissioning Plan. Collaborate through the Commissioner with each Contractor and with Subcontractors to develop test and inspection procedures. Include design changes and coordinate Commissioning activities with the overall Project schedule. Identify Commissioning Team member responsibilities, by name, firm, and trade specialty, for performance of each commissioning task. Update the Commissioning Plan during construction as required.
- C. Review and comment in accordance with Section 01 33 00 SUBMITTAL PROCEDURES, on submittals from the Contractor for compliance with the OPR, BOD, Contract Documents, and construction-phase Commissioning Plan. Review and comment on performance expectations of systems and equipment and interface between systems relating to the OPR and BOD.
- D. Coordinate with the Commissioner, in accordance with Section 01 31 00 PROJECT MANAGEMENT AND COORDINATION, to convene Commissioning Team meetings for the purpose of coordination, communication and conflict resolution; discuss progress of the commissioning processes.
- E. At the beginning of the construction phase, coordinate with the Commissioner's kick-off meeting schedule to conduct an initial construction-phase coordination meeting for the purpose of reviewing the Commissioning activities and establishing tentative schedules for operation and maintenance submittals, operation and maintenance orientation sessions, TAB Work, testing, and Project completion.
- F. Perform site visits to observe and inspect construction as described in the Commissioning Plan. Report progress and deficiencies to the Commissioner. In addition to compliance with the OPR, BOD, and Contract Documents, inspect systems and equipment installation for adequate accessibility required for component maintenance replacement and repair.
- G. Prepare and distribute project-specific test and inspection procedures and checklists and maintain MEL.
- H. Verify air and water systems balancing by sampling, reviewing completed reports and selected site observation. Coordinate submittal reviews with the Commissioner so that the comments are combined into a single review and submitted to the Contractor.
- I. Coordinate with the Commissioner to witness and document tests, inspections and systems startup, as per the Commissioning Plan.
- J. Maintain an Issues Log and a record of functional testing. Report all Issues as they occur to the Commissioner.



- K. Compile test data, inspection reports and certificates, and include them in the systems manual and Commissioning Report.
- L. Certify date of acceptance and startup for each item of equipment for start of warranty periods.
- M. Review and comment on operation and maintenance documentation and systems manual outline for compliance with the OPR, BOD, and Contract Documents. Operation and maintenance documentation requirements are specified in other sections of the Project Specifications and described in Section 01 78 39 CONTRACT RECORD DOCUMENTS.
- N. Review agenda for orientation; witness and confirm orientation session conforms with agenda and Contract Documents; review recording of demonstration and orientation sessions provided by the Contractor on USB drive or other electronic media as requested by the Commissioner and provide appropriate comments for editing.
- O. Return to the site ten (10) months into the twelve (12)-month guaranty period, to review with facility staff the current building operation and the condition of outstanding Issues related to the original and seasonal commissioning. Interview facility staff and identify problems or concerns they have with operating the building as originally intended.
- P. Prepare Commissioning Reports.
- Q. Assemble the final commissioning documentation, including the Commissioning Report and Systems Manual.
- R. Perform all CxA tasks as defined by LEED; prepare LEED submittal documents.

1.9 COMMISSIONING DOCUMENTATION:

The Contractor must assist the CxA in the development and compiling of the following Commissioning Documentation:

- A. Index of Commissioning Documents: The CxA will prepare an index including the storage location of each document.
- B. Commissioning Plan: A document prepared by the CxA that outlines the schedule, allocation of resources, roles and responsibilities, and documentation requirements of the Commissioning process.
- C. Test Checklists: The CxA will develop test checklists for each system, subsystem, or equipment including interfaces and interlocks, and include a separate entry, with space for comments, for each item to be tested. The CxA will prepare separate checklists for each mode of operation and provide space to indicate whether the mode under test responded as required. Space will be provided for testing personnel to sign off on each checklist. Specific checklist content requirements are specified in other sections of the Project Specifications, but must include without limitation:
 - 1. Identification of tested item
 - 2. Date of test
 - 3. Indication of whether the record is for a first test or retest following correction of a problem or Issue
 - 4. Dated signatures of the person performing the test and of the witness if applicable
 - 5. Deficiencies and Issues, if any, generated as a result of the test
- D. Inspection Checklists will be signed by the Contractor, Subcontractor(s), Installer(s), and CxA certifying that systems, subsystems, equipment, and associated controls are ready for testing.
- E. Test and Inspection Reports: The CxA will record test data, observations, and measurements on test checklists. Photographs, forms, and other means appropriate for the application will be included with data.



- CxA must compile test and inspection reports and test and inspection certificates and include them in systems manual and Commissioning Report.
- F. Corrective Action Documents: The CxA will document corrective action taken for systems and equipment that fail tests and include required modifications to systems and equipment and revisions to test procedures, if any. The Contractor must retest systems and equipment requiring corrective action. The CxA will document retest results.
- G. Issues Log: The CxA will prepare and maintain an Issues Log that describes design, installation, and performance Issues that are at variance with the OPR, BOD, and Contract Documents. The log will identify and track Issues as they are encountered, documenting the status of unresolved and resolved Issues. The Issues Log will identify, at a minimum:
1. The party responsible for correcting the Issue,
 2. The person documenting the Issue resolution,
 3. The exact location of the Issue (floor and room),
 4. The applicable system component,
 5. A detailed description of the Issue,
 6. The Issue status, and
 7. The date the Issue was discovered and the date the Issue was resolved.
- H. Commissioning Report: The CxA will document results of the commissioning process including unresolved Issues and performance of systems, subsystems, and equipment. The Commissioning Report will indicate whether systems, subsystems, and equipment have been completed and are performing according to the OPR, BOD, and Contract Documents. The Commissioning Report must include:
1. An executive summary, including participants and their roles, a brief building description, an overview of the commissioning and testing scope, and a general description of testing and verification methods,
 2. Installation/Pre-Functional Checklists,
 3. Start-up reports,
 4. Functional Test documentation,
 5. Trend Log Analysis,
 6. The final Issues Log, with all Issues identified through the commissioning process, identifying which, if any, Issues remain unresolved,
 7. The Commissioning Plan,
 8. Commissioning progress and field reports,
 9. Commissioning review documents, and
 10. Record of owner's orientation.
- I. Systems Manual: The CxA will gather required information and compile systems manual as specified in other sections of the Project Specifications and described in Section 01 78 39 CONTRACT RECORD DOCUMENTS.



1.10 SUBMITTALS:

- A. Submittal of shop drawings, product data, samples, etc., relevant to commissioning must be provided to the CxA as requested. Such submittals must be in compliance with Section 01 33 00 SUBMITTAL PROCEDURES.
- B. As-Built Contract Record Drawings and Operating and Maintenance Manuals relevant to commissioning must be provided to the CxA as requested. Such submittals must be in compliance with Section 01 78 39 CONTRACT RECORD DOCUMENTS.
- C. All demonstration and orientation submittals relevant to commissioning must be provided to the CxA as requested. Such submittals must be in compliance with Section 01 79 00 DEMONSTRATION AND OWNER'S PREACCEPTANCE ORIENTATION.
- D. Completed Prefunctional (Installation) Checklists must be provided to the CxA.

1.11 COORDINATION:

- A. Coordination of Commissioning is the responsibility of all Commissioning Team members.
- B. Coordinating Meetings: The CxA will coordinate with the Commissioner's regularly scheduled construction progress meetings to conduct coordination meetings of the Commissioning Team to review progress on the Commissioning Plan, to discuss scheduling conflicts, and to discuss upcoming commissioning process activities. Commissioner and Contractor must ensure that all required Commissioning Team members attend.
- C. Construction Documents: The Contractor, through the Commissioner, will furnish copies of all construction documents, addenda, change orders and appropriate submittals and shop drawings to the CxA.
- D. Pre-testing Meetings: The CxA will coordinate with the Commissioner to conduct pretest meetings of the Commissioning Team to review startup reports, pretest inspection results, testing procedures, testing personnel and instrumentation requirements, and manufacturers' authorized service representative services for each system, subsystem, equipment, and component to be tested. Commissioner and Contractor must ensure that all required Commissioning Team members attend.
- E. Testing Coordination: Contractor must coordinate schedule times with the Commissioning Team, through the Commissioner, for tests, inspections, obtaining samples, and similar activities. The CxA will advise the Commissioning Team as to the sequence of testing activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
- F. Manufacturers' Field Services: The Contractor must coordinate manufacturers' field services, as per the Commissioning Plan.
- G. The CxA will regularly apprise the Commissioner of progress, pending problems and/or disputes, as well as provide regular status reports on progress with each system.

PART II – PRODUCTS

2.1 TEST EQUIPMENT

- A. All industry standard test equipment required for performing the specific tests must be provided by the Contractor responsible for testing. Any proprietary Vendor-specific test equipment must be provided by that Vendor or Manufacturer.
- B. Special equipment, tools, instruments, software, and equipment communication network access hardware and software (only available from Vendor, specific to the piece of equipment) required for testing equipment according to the Contract Documents must be included at no extra cost to the City and must be turned over



to the City at Project close-out, except for stand-alone data logging equipment that may be used by the CxA.

- C. Any portable or handheld setup and/or calibration devices required to initialize the control system must be made available by the control vendor for use by the CxA at no additional cost to the City.
- D. The instrumentation used in the commissioning process must comply with the following:
 - 1. Be of sufficient quality and accuracy to test and/or measure system performance within the tolerances required
 - 2. Be calibrated at the manufacturer's recommended intervals with calibration tags permanently affixed to the instrument
 - 3. Be maintained in good repair and operating condition throughout use duration on this Project
 - 4. Be immediately recalibrated or repaired if dropped and/or damaged in any way during this Project.

PART III – EXECUTION

3.1 COMMISSIONING PROCESS

- A. The following provides an overview of the Commissioning tasks during Project construction and the general order in which they occur.
 - 1. Construction-phase Commissioning begins with a Commissioning Kickoff Meeting, conducted by the CxA through the Commissioner in accordance with section 01 31 00 PROJECT MANAGEMENT AND COORDINATION, where the Commissioning process is reviewed with all the Commissioning Team Members.
 - 2. Additional meetings may be required throughout construction, scheduled by the CxA through the Commissioner in accordance with 01 31 00 PROJECT MANAGEMENT AND COORDINATION with necessary parties attending, to plan, scope, coordinate and schedule future activities and resolve open Issues.
 - 3. The CxA will review the Contractor submittals concurrent with the Commissioner and provide comments to the Commissioner for inclusion in their review. The reviewed submittals will include all commissioned equipment information, including detailed startup procedures, and coordination drawings that include commissioned equipment and systems, control drawings and sequences, and interfaces and interlocks between systems.
 - 4. The CxA works with the Commissioner and Contractor in developing Pre-functional and Functional Test documentation formats.
 - 5. Periodically throughout the construction process, the CxA will perform site visits to observe component and system installations.
 - 6. The checkout and performance verification generally proceeds from component level to equipment to systems and intersystem levels. Pre-functional (Installation) Checklists are to be completed before Functional Performance Checklists.
 - 7. The Contractor must, with guidance from the CxA, execute and document the Pre-Functional (Installation) Checklists and perform startup and initial checkout of equipment and systems. The CxA documents that the checklists and startup are completed according to the approved plans. This will include the CxA witnessing selected assembly markups, portions of the startup of selected equipment, and spot checking the Pre-Functional (Installation) Checklists.
 - 8. The CxA develops specific equipment and system Functional Checklists. The Contractor receives a copy of the procedure through the Commissioner. The CxA may request additional design



- narrative from the Commissioner and Controls Contractor, depending on the completeness of the Basis of Design and sequences provided within the design documents.
9. The Functional Checklists are executed by the Contractor and witnessed and documented by the CxA.
 10. Items of non-compliance in material, installation startup, and operation are corrected and the equipment or system is rechecked. The CxA will maintain an Issues Log to track Issues and Issue resolution.
 11. The CxA will review the Operation & Maintenance documentation for completeness.
 12. Commissioning, excluding the Warranty Walkthrough, must be completed prior to Substantial Completion.
 13. The CxA reviews the orientation documentation. The orientation schedules and agenda are provided by the subcontractors. The CxA verifies that orientation is completed, attended by the appropriate City of New York personnel, is thorough and provides all necessary information required to operate and service the equipment or system.
 14. Deferred testing/checkouts are conducted, as specified or required in the Contract Documents.

3.2 COMMISSIONING PLAN AND SCHEDULE

- A. Commissioning Plan: The Commissioning Plan provides guidance in the execution of the commissioning process. After the initial construction phase Commissioning kickoff meeting, the CxA will update the plan. This plan is a living document that must evolve and expand as the Project progresses. The Commissioning Plan must include:
 1. Description of the facility and Project.
 2. Description of the commissioning process and associated deliverable documents.
 3. Description of equipment and systems to be commissioned.
 4. Description of schedules for testing procedures along with identification of parties involved in performing and verifying tests.
 5. Sample rates for equipment to be tested.
 6. Identification of task items that must be completed before the next operation can proceed.
 7. Description of responsibilities of Commissioning Team members.
 8. Description of observations to be made and reported on during testing and witnessing of testing by all parties involved in the Project.
- B. Commissioning Schedule: Contractor must provide construction schedules to the CxA, in accordance with Section 01 31 00 PROJECT MANAGEMENT AND COORDINATION. The CxA will develop and submit a schedule identifying the commissioning process and provide commissioning scheduling information to the Commissioner and Contractor for review and planning activities. The Contractor must incorporate the CxA's activities into the Project schedule.

3.3 TESTING PROCEDURES

- A. The CxA will determine and document the acceptance procedures for each system within disciplines. The acceptance procedures must incorporate the commissioning standards and successful testing results as referred to throughout the Specifications.



- B. The CxA will provide performance checklists and performance checkout data sheets for each system based on actual system configuration. Special emphasis must be placed on checkout procedures that must conclusively determine actual system performance and compliance with the OPR and BoD.
- C. The Contractor and appropriate Vendor(s) must be informed of what tests are to be performed and the expected results. The Commissioning Plan must address the test requirements and be distributed to all parties involved with that system.
- D. Prior to Functional Testing, the Contractor must provide the following:
 - 1. Contractor must certify in writing that commissioned systems, subsystems, and equipment have been installed, calibrated and started, and are operating according to the Contract Documents.
 - 2. Contractor must certify in writing that all relevant instrumentation and control systems have been completed and calibrated; are operating according to the Contract Documents; and that pretest set points have been recorded.
 - 3. Contractor must certify in writing that TAB procedures have been completed, and that the TAB report has been submitted, discrepancies corrected, and corrective work approved.
 - 4. Contractor must perform tests for system and intersystem performance only after CxA and Commissioner have approved the completed testing checklists for systems, subsystems, and equipment.
- E. The Functional Performance tests must be performed by the Contractor and Vendor(s) with oversight by the CxA. The CxA must witness, verify, and document these tests.
 - 1. Functional Performance Tests must include operating the systems and components through each of the written sequences of operation, other significant modes of miscellaneous alarms, power failure, and security alarm when impacted by and interlocked with commissioned equipment, as detailed in the Commissioning Plan.
 - 2. Checklists must be completed comprehensively and to the extent necessary to enable the CxA to assure the Commissioner that the systems perform as per the OPR, BOD, and Contract Documents.
 - 3. If a test is failed for any reason and retesting is required, the Contractor must provide retesting at no additional cost to the City.
 - 4. After testing, Contractor must return settings to normal operating conditions.

3.4 OPERATION & MAINTENANCE MANUALS

- A. General
 - 1. The CxA must review the Operation & Maintenance manuals provided by the Contractor for completeness of the document. The review process will verify that Operation & Maintenance instructions meet Specifications and are included for all commissioned equipment furnished by the Contractor.
 - 2. Published literature will be specifically oriented to the provided equipment, indicating required operation and maintenance procedures, parts lists, assembly / disassembly diagrams and related information.
 - 3. The Contractor must incorporate the standard technical literature into system-specific formats for this facility as designed and as actually installed. The resulting Operation & Maintenance information must be system-specific, concise, to the point and tailored specifically to this facility. The CxA must review these documents as necessary for final corrections by the Contractor.



4. Contractor must submit Operations & Maintenance Manuals for each piece of equipment for review no later than 45 days after submittal approval.
- B. The Operation & Maintenance Manual review and coordination efforts must be completed prior to Owner orientation sessions, as these documents are to be utilized in the orientation sessions.
- C. System Operations Manual
 1. The CxA must prepare and deliver these documents with inputs from the Contractor. The Contractor must provide all required documents to the CxA, through the Commissioner. The required documents must be described in the Commissioning Plan and Contract Documents. Typically, the manual includes the following:
 - a. System, subsystem, and equipment descriptions
 - b. Commissioned systems single line diagrams (to be provided by Mechanical, Electrical, Plumbing, and Building Management System (BMS) subcontractors).
 - c. As built sequences of operations, control drawings and original set points (to be provided by Design Consultant and BMS subcontractor).
 - d. Operating instructions for integrated building systems (to be provided by Mechanical and BMS subcontractors).
 - e. Recommended schedule of maintenance requirements and frequency (to be provided by subcontractors).
 - f. Recommended schedule for calibrating sensors and actuators (to be provided by BMS subcontractor).

3.5 DEMONSTRATION AND INSTRUCTION

- A. The Contractor must schedule and coordinate instruction sessions for the facility's staff for each commissioned system. Demonstrations must be held per Contract Documents, along with the appropriate schematics, handouts and visual / audio orientation aids onsite with equipment.
- B. The equipment vendors must provide instruction on the specifics of each major equipment item including philosophy, troubleshooting and repair techniques.
- C. The Contractor must record and edit demonstration and orientation sessions, and provide these records to the CxA, through the Commissioner.
- D. For additional direction pertinent to instruction, refer to other specific divisions for demonstration and instruction requirements.

3.6 WARRANTY REVIEW / SEASONAL TESTING

- A. The CxA will return upon the start of the new season (cooling or heating) after Project completion to conduct performance tests that could not be performed due to ambient conditions. The seasonal testing will only be performed if suitable loads / conditions were unavailable during the performance testing stages (in other words; the requirement for testing is warranted).
- B. The CxA will return to the site approximately ten (10) months into the twelve (12)-month warranty period and interview the occupants and maintenance staff, review the operation of the building, provide recommendations for installation and operational problems and document warranty and operational Issues in the Issues database.

3.7 RECORD DRAWINGS

- A. The CxA must review the as built Contract Documents to verify incorporation of both design changes and as-built construction details. Discrepancies noted must be corrected by the appropriate party.

END OF SECTION 01 91 13



**SECTION 01 91 15
GENERAL COMMISSIONING REQUIREMENTS FOR BUILDING ENCLOSURE**

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 91 15

PART I – GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum, and (5) the Contract [City of New York Standard Construction Contract].
- B. The Owner's Project Requirements (OPR) and Basis of Design (BOD) documents are included by reference for information only.
- C. The Commissioning Plan, prepared by the Commissioning Agent (CxA) under separate contract with the City of New York, contains requirements that apply to this section.

1.2 SECTION INCLUDES

- A. This section includes the commissioning requirements for the Building Enclosure systems. Refer to "Building Enclosure Functional Performance Test Protocol" in other sections of the Project Specifications for specific requirements regarding Building Enclosure Commissioning.
 - 1. The commissioning requirements for the Building Enclosure systems given in this section are entirely separate from, and in addition to, the Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS for this Project. The Contractor, and his/her Suppliers, Subcontractors, Vendors, etc., are required to participate in both commissioning processes as required.

1.3 DESCRIPTION

- A. Building Enclosure Commissioning (BECx) is a systematic process of ensuring all building enclosure systems responsible for environmental separation perform as per the OPR and BOD. The BECx process is intended to verify and document proper installation and performance of building enclosure materials and systems in accordance with the Contract Documents.
- B. Commissioning does not take away from, or reduce, the Contractor's responsibility to provide a finished and fully functioning product and installation.
- C. This section will in no way diminish the responsibility of the Contractor in performing all aspects of work and testing as outlined in the Contract Documents. Any requirements outlined in this section are in addition to requirements outlined in the Contract Drawings and Specifications.

1.4 RELATED WORK

- A. Specific BECx requirements are given in this Section. The following Project Specification sections are related to the commissioning work specified in this section:
 - 1. Basic Concrete Requirements: Refer to Division 03
 - 2. Basic Metal Requirements: Refer to Division 05
 - 3. Basic Waterproofing, Roofing, Air Barrier and Insulation Requirements: Refer to Division 07
 - 4. Basic Fenestrations Requirements: Refer to Division 08
 - 5. Basic Finishing Requirements: Refer to Division 09



1.5 DEFINITIONS AND ABBREVIATIONS

- A. Refer to Article 2 of the Contract and Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS for terms, words, and expressions not otherwise defined herein.

Approval	Acceptance that a material or system has been properly installed and is functioning in tested modes according to the Contract Documents.
Building Enclosure Commissioning Agent (BECA)	BECA directs and coordinates day-to-day BECx commissioning activities.
Building Enclosure Testing Agency (BETA)	Building Enclosure Testing Agency whom is an independent agency retained by the Contractor and approved by the Commissioner, fully accredited by the appropriate governing body for each of the materials, components or systems to be tested or evaluated for compliance with requirements of the Contract Documents and as directed by the BECA. Documentation of such certification must be submitted to and approved by the Commissioner prior to the start of any work by the BETA.
Commissioning	Commissioning is a systematic process of ensuring and documenting that the building systems, including the Building Enclosure, have been installed in the prescribed manner, are functionally checked and capable of being operated and maintained to perform with the design intent, and have documentation to support proper installation and operation. The process does not eliminate or reduce the responsibility of the installing Contractors to provide a finished product.
Commissioning Agent (CxA)	Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS for Definition.
Commissioning Plan	Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS for Definition.
Deficiency	Condition of a building enclosure material or system that is not in compliance with Contract Documents (that is, does not perform properly or does not comply with design intent).
Design Consultant	Refer to Section 01 91 13 GENERAL COMMISSIONING REQUIREMENTS FOR MEP SYSTEMS for Definition.
Simulated Condition	Condition created for testing component or system (e.g., applying pressure differential across the building enclosure concurrent with water spray to simulate a wind driven rain).
Mock-up	The activities where systems or materials are initially constructed and tested.

1.6 COORDINATION

- A. Building Enclosure Commissioning Team: Members of the Building Enclosure Commissioning Team will consist of:
1. CxA
 2. BECA
 3. BETA
 4. Commissioner
 5. Contractor, and all Building Enclosure Subcontractors
 6. Design Consultant
- B. Management: City of New York will contract services of the BECA through a separate contract. The BECA will direct and coordinate commissioning activities and report to the Commissioner. All members of the



Building Enclosure Commissioning Team must cooperate to fulfill contracted responsibilities and objectives of the Contract Documents.

- C. Scheduling: BECA must work with the Building Enclosure Commissioning Team to establish required commissioning activities to incorporate into the preliminary commissioning schedule. The Contractor must integrate commissioning activities into master construction schedule, in accordance with Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION. Necessary notifications are to be made in a timely manner in order to expedite commissioning.

1.7 SUBMITTALS

- A. Contractor must provide documentation required for commissioning work in accordance with Section 01 33 00 SUBMITTAL PROCEDURES. At minimum, documentation must include, but not be limited to:
1. Submittal of shop drawings, product data, samples, etc., relevant to BECx and as requested by the BECA. Such submittals must be in compliance with Section 01 78 39 CONTRACT RECORD DOCUMENTS.
 2. As-Built Record Drawings and Operation and Maintenance Information relevant to BECx and as required by the BECA. Such submittals must be in compliance with Section 01 78 39 CONTRACT RECORD DOCUMENTS.
 3. All demonstration and orientation submittals relevant to BECx and as requested by the BECA. Such submittals must be in compliance with Section 01 79 00 DEMONSTRATION AND OWNER'S PREACCEPTANCE ORIENTATION.
 4. Performance data, any performance test procedures, and installation and checkout materials.
- B. The Contractor must provide all submittals to the Design Consultant, as per Section 01 33 00 SUBMITTAL PROCEDURES. The Design Consultant will transmit all building enclosure related submittals to the BECA for concurrent review.

PART II – PRODUCTS – Part not used.

PART III – EXECUTION

3.1 SYSTEMS TO BE COMMISSIONED

- A. Building Enclosure systems to be commissioned may include, but are not limited to, Below Grade Waterproofing Systems, Opaque Wall/Cladding Systems, and Fenestration systems. Refer to the Contract Documents for clarity.

3.2 RESPONSIBILITIES OF COMMISSIONING TEAM MEMBERS DURING CONSTRUCTION PHASE

- A. Responsibilities of the Design Consultant include without limitation the following:
1. Review BECA comments on construction documents and shop drawings.
 2. Assist in dispute resolution regarding building enclosure items.
 3. Review BECA reports.
 4. Incorporate BECA Submittal Review Comments into response on submittals.
- B. Responsibilities of the BECA include the following without limitation:
1. Review and comment on Mock-up construction and testing plan as provided by Contractor.
 2. Development of BECx Plan.
 3. Review of building enclosure shop drawings and submittals, including “approved equal” requests, through the Commissioner in accordance with Section 01 33 00 Submittal Procedures.



4. Attend combined pre-construction and BECx kick-off meeting.
 5. Develop construction checklists for the building enclosure for the Contractor's use.
 6. Observe the construction of a building enclosure Mock-up.
 7. Witness the testing of a building enclosure Mock-up.
 8. Project meetings / conference calls / coordination.
 9. Field monitor installation of exterior enclosure components.
 10. Update field report log.
 11. Update BECx Plan.
 12. Advise on Requests for Information.
 13. Assist with the preparation of LEED paperwork.
 14. Prepare systems manual, with required inputs and documentation from the Contractor in accordance with Section 01 78 39 CONTRACT RECORD DOCUMENTS.
 15. Complete Maintenance Plan, with required inputs and documentation from the Contractor in accordance with Section 01 78 39 CONTRACT RECORD DOCUMENTS.
 16. Prepare training manual, with required inputs and documentation from the Contractor in accordance with Section 01 78 39 CONTRACT RECORD DOCUMENTS.
 17. Prepare final BECx record and enclosure commissioning close-out documents.
 18. Develop on-going BECx Plan.
- C. Responsibilities of the Contractor and Building Enclosure Subcontractors include without limitation the following:
1. Review BECx Plan and FPT specification.
 2. Attend commissioning kick-off meeting and other Building Enclosure Commissioning Team meetings.
 3. Incorporate commissioning activities into the construction schedule.
 4. Periodically update Commissioning activities in the construction schedule.
 5. Notify Commissioner and BECA of work completion.
 6. Verify building enclosure materials and assemblies are ready for functional testing.
 7. Retain the services of an approved independent BETA; submit qualifications of independent BETA to Commissioner for approval; coordinate all activities and deliverables of this BETA; ensure all BETA deliverables are provided to the Building Enclosure Commissioning Team.
 8. Attend all required material and systems testing.
 9. Execute all periodic maintenance or repairs required on started systems from initial Mock-up of equipment to Final Acceptance by Commissioner to prevent material warranties from being voided.
 10. Submit maintenance logs of all interim maintenance or repair tasks performed by Contractor.
 11. Ensure installation work is complete, is in compliance with Contract Documents, and is ready for Functional Performance Testing. FPT test results will be documented by BECA.
 12. Ensure resolution of non-compliance and deficiencies in construction or test results. Obtain written documentation of completion from the appropriate Contractors.
 13. Provide letters of compatibility for adjacent building enclosure materials and assemblies.



14. Facilitate all repairs and retesting of failed condition at no additional cost to the City of New York.
15. Provide all warranty information to BECA.
- D. Responsibilities of the BETA include without limitation the following:
 1. Attend Commissioning kick-off meeting and other Building Enclosure Commissioning Team meetings.
 2. Provide on-site technician and equipment to complete Mock-up and field Functional Performance Testing.
 3. Prepare and submit reports to the Commissioner at the conclusion of all testing.
 4. Perform retesting and prepare corresponding reports.

3.3 BUILDING ENCLOSURE COMMISSIONING TEAM (BECx) MEETINGS

- A. BECx meetings will be held periodically, as determined by the Commissioner and recommended by BECA.
- B. Discussions held in BECx meetings must include, but not be limited to: system/materials, mock-up/field, progress, scheduling, testing, documentation, deficiencies, and problem resolution.
- C. The Contractor must attend BECx meetings, and must ensure the attendance of required subcontractors, as requested.

3.4 REPORTING

- A. BECA will provide status reports to the Commissioner. The Commissioner will provide such status reports to the Contractor, CxA, Design Consultant, and other entities as needed.
- B. BECA will submit non-compliance and deficiency reports to Commissioner. The Commissioner will provide such reports to the Contractor, CxA, Design Consultant, and other entities as needed.
- C. BECA will provide a final summary report to Commissioner and CxA.

3.5 MOCK-UP AND FINAL CONSTRUCTION

- A. Prior to Functional Performance Testing or concealment of functional performance layers within the building enclosure, the Contractor must verify that all assemblies are complete, including deficiency long items, and all Contract requirements are met.

3.6 FUNCTIONAL PERFORMANCE TESTING

- A. Objectives and Scope
 1. The objective of Functional Performance Testing is to demonstrate that the building enclosure is performing according to documented design intent and Contract Documents. Functional Performance Testing facilitates bringing the building enclosure systems from a state of Substantial Completion to fully operational. Additionally, during Functional Performance Testing, areas of deficient performance are identified and corrected, improving building enclosure system performance.
- B. Development of Test Procedures
 1. The purpose of a specific test is to verify and document compliance of the installed enclosure systems with the OPR. Building Enclosure Functional Performance Test Protocols are provided in other sections of the Project Specifications for specific requirements regarding BECx.
- C. Coordination and Scheduling
 1. Contractor must provide sufficient notice to BECA, through the Commissioner, regarding completion schedule for materials and systems. Testing to be performed in conjunction with site visits. Contractor must schedule Functional Performance Tests with Commissioning Team. BECA must witness and



document functional testing of equipment and systems. BETA, as retained by the Contractor, must execute tests under direction of BECA.

2. Successful completion of Mock-up functional performance testing must occur prior to full production installation of building enclosure materials and systems.

3.7 DOCUMENTATION, NON-CONFORMANCE, AND APPROVAL OF TESTS

A. Documentation

1. BECA must witness and document results of FPT.

B. Non-Conformance

1. BECA must record results of functional testing. Deficiency or non-conformance issues must be noted and reported to the Commissioner. The Commissioner must provide such non-conformance reports to the CxA, Design Consultant, Contractor, and other entities, as needed.
2. Corrections of minor deficiencies identified may be made during tests at the discretion of the Commissioner and as recommended by the BECA. In such cases, deficiency and resolution must be documented.
3. Every effort must be made to expedite testing and minimize unnecessary delays, while not compromising integrity of tests.
4. Deficiencies are handled in the following manner:
 - a) BECA documents deficiencies and notes Contractor's response and intentions. A finding of deficiency will not end the testing process.
 - b) BECA submits deficiency report to the Commissioner. The Commissioner will provide such deficiency report to the CxA, Contractor, Design Consultant, and other entities as required.
 - c) Contractor corrects deficiency and certifies that material or assembly is ready to be retested.
 - d) Contractor informs Commissioner of retesting schedule for coordination with the BECA.
 - e) Contractor reschedules test with the Commissioner and BETA at no additional cost to the City of New York.

C. Testing

1. Costs for all testing and retesting required for the Project will be the responsibility of the Contractor. The Contractor is to provide access to the test specimens to the Commissioning Team, through the Commissioner.

3.8 COMMISSIONING DOCUMENTATION

A. Final Report Details

1. Final BECx Report must include an executive summary, list of participants and roles, brief building description, overview of Commissioning and testing scope, and general description of testing and verification methods. Report must contain evaluation regarding:
 - a) Conformance to Specifications and design intent.
 - b) Material/system installation.
 - c) Functional performance.
2. All outstanding non-compliance items must be specifically listed.
3. Recommendations for improvement to system or operations, future actions, etc. must also be listed.

END OF SECTION 01 91 15

**THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF PUBLIC BUILDINGS**

30-30 THOMSON AVENUE
TELEPHONE (718) 391-1000

LONG ISLAND CITY, NEW YORK 11101-3045
WEBSITE www.nyc.gov/buildnyc



**Department of
Design and
Construction**

Contract for Furnishing all Labor and Material Necessary

Contractor

Dated _____, 20____

Approved as to Form
Certified as to Legal Authority

Acting Corporation Counsel

Dated _____, 20____

Entered in the Comptroller's Office

First Assistant Bookkeeper

Dated _____, 20____



FMS ID: **PV467WFAC**



**Department of
Design and
Construction**

**THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF PUBLIC BUILDINGS**

30-30 THOMSON AVENUE LONG ISLAND CITY, NEW YORK 11101-3045
TELEPHONE (718) 391-1000 WEBSITE www.nyc.gov/buildnyc

Contract for Furnishing all Labor and Material Necessary and Required for:

CONTRACT NO. 1 GENERAL CONSTRUCTION WORK

The Heckscher Building - Partial Exterior Envelope Upgrade Rebid

**LOCATION: 1230 5th Avenue
BOROUGH: Manhattan, NY 10029
CITY OF NEW YORK**

Contractor

Dated _____, 20____

Approved as to Form
Certified as to Legal Authority

Acting Corporation Counsel

Dated _____, 20____

Entered in the Comptroller's Office

First Assistant Bookkeeper

Dated _____, 20____





**Department of
Design and
Construction**

PROJECT ID:

PV467WFAC

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VOLUME 3 OF 3

**ADDENDUM TO THE GENERAL
CONDITIONS**

SPECIFICATIONS

FOR FURNISHING ALL LABOR AND MATERIALS
NECESSARY AND REQUIRED FOR:

**The Heckscher Building - Partial
Exterior Envelope Upgrade Rebid**

**LOCATION:
BOROUGH:
CITY OF NEW YORK**

**1230 5th Avenue
Manhattan, NY 10029**

CONTRACT NO. 1

GENERAL CONSTRUCTION WORK

NYC Department of Cultural Affairs

Thornton Tomasetti

Date:

May 26, 2021





THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF PUBLIC BUILDINGS

ADDENDUM TO THE GENERAL CONDITIONS
FOR SINGLE CONTRACT PROJECTS

The General Conditions are hereby amended in accordance
with the terms and conditions set forth in this Addendum.

I. PROJECT DESCRIPTION

FMS #: PV467WFAC

PROJECT NAME: The Heckscher Building – Partial Envelope Upgrade Rebid

PROJECT DESCRIPTION: This Project consists of the following repairs being performed along the west façade of the building: replacement of the existing roof parapet and the 6th floor cornice, window and louver replacement, brick and cast stone masonry repointing and cleaning, localized repairs at brick and cast stone masonry including brick masonry replacement, cast stone patch and crack repairs, lintel replacement and window sill replacement.

PROJECT LOCATION: 1230 5th Avenue
BOROUGH: Manhattan
CITY OF NEW YORK
ZIP CODE: 10029
COMMUNITY BOARD #: 11

LANDMARK STATUS:

DESIGNATED LANDMARK STRUCTURE OR SITE: **NO**

If this is a Designated Landmark Structure or Site, Section 01 3591, Historic Treatment Procedures applies to this project.

LANDMARK QUALITY STRUCTURE: **YES**

If this is a Landmark Quality Structure, Section 01 3591, Historic Treatment Procedures applies to this project.

II. LEED GREEN BUILDING REQUIREMENTS

NOT USED

III. COMMISSIONING REQUIREMENTS

NOT USED

IV. PROJECT MANAGEMENT



DDC shall publicly bid and enter into all contracts for the Project. DDC shall manage the Project using its own personnel.



DDC shall publicly bid and enter into all contracts for the Project. A Construction Management firm (the "CM") hired by DDC shall manage the Project. The Contractor is advised that the CM shall serve as the representative of the Commissioner at the site and shall, subject to review by the Commissioner, be responsible for the inspection, management, coordination and administration of the required construction work, as delineated in the article of the Standard Construction Contract entitled "The Resident Engineer".

V. CONTRACTS FOR THE PROJECT

The Project consists of a single contract, the Contract for General Construction Work. The Contractor for General Construction Work is responsible for the performance of all required work for the Project as set forth in the Contract Documents (General Conditions, Drawings and Specifications), including all responsibilities and obligations assigned to separate Contractors for the following subdivisions of the work: Plumbing Work, HVAC Work, and Electrical Work. All responsibilities and obligations in the Contract Documents assigned to separate Contractors for such subdivisions of the work are the responsibility of the Contractor for General Construction Work.

VI. SCHEDULES

The Contractor is advised that Schedules A through E are attached to, and incorporated as part of, this Addendum to the General Conditions. These schedules contain important information that is specific to this Project. The Contractor is advised to carefully review these schedules.

VII. APPLICABILITY OF SECTIONS/SUB-SECTIONS AND AMENDED SUB-SECTIONS

The Contractor is advised that various Sections/Sub-Sections in the General Conditions may not apply to this Project or may apply as amended. Such Sections/Sub-Sections advise the Contractor to "Refer to the Addendum for the applicability of this Section/Sub-Section." Such Sections/Sub-Sections are set forth below. A check mark indicates whether the Section/Sub-Section (1) applies to the Project, (2) does not apply to the Project, or (3) applies to the Project as amended. If no box is checked, the Section/Sub-Section, as set forth in the General Conditions, applies to the Project. Amended Sections/Sub-Sections, if any, are set forth following this list of Sections.

<u>Section</u>	<u>Sub-Section</u>	<u>Sub-Section</u>	<u>Applies</u>	<u>Does not Apply</u>	<u>Applies as Amended</u>
01 1000	1.4 (B)	Scope and Intent / LEED		X	
	1.4(C)	Scope and Intent / Commissioning		X	
01 3216.10		Project Schedules (Method A)		X	
01 3216.20		Project Schedules (Method B)	X		
01 3216.30		Project Schedules (Method C)		X	
	1.7 Q	Cost Loaded Schedule		X	
01 3233		Photographic Documentation	X		
01 3300	1.7 (A-D)	LEED Submittals		X	
01 3503		General Mechanical Requirements		X	
01 3506	3.2 (A-B)	Electrical Conduit System Including Boxes (Pull, Junction and Outlet)		X	
	3.3 (A-E)	Electrical Wiring Devices		X	
	3.4 (A-I)	Electrical Conductors and Terminations		X	
	3.5 (A-B)	Circuit Protective Devices		X	
	3.6 (A-J)	Distribution Centers		X	
	3.7 (A-I)	Motors		X	
	3.8 (A-I)	Motor Control Equipment		X	
01 3591		Historic Treatment Procedures	X		
01 5000	3.2 (A)	Temporary Water Facilities / Temporary Water	X		
	3.2 (B)	Temporary Water Facilities / Temporary Water – Work in Existing Facilities	X		
	3.3 (B)	Temporary Sanitary Facilities / Self-Contained Toilet Units	X		
	3.3 (C)	Temporary Sanitary Facilities / Existing Toilets		X	
	3.4 (B) 1	Temporary Power, Lighting, and Site Lighting / Connection to Utility Lines	X		
	3.4 (B) 2	Temporary Power, Lighting, and Site Lighting / Connection to Existing Electrical Power Service	X		
	3.4 (B) 3	Temporary Power, Lighting, and Site Lighting / Electrical Generator Power Service		X	
	3.4 (D)	Temporary Power, Lighting, and Site Lighting / Temporary Lighting		X	
	3.4 (E)	Temporary Power, Lighting, and Site Lighting / Site Security Lighting (for New Construction Only)		X	
	3.5 (A-J)	Temporary Heat		X	
	3.8 (A)	DDC Field Office / Office Space in Existing Building	X		

<u>Section</u>	<u>Sub-Section</u>	<u>Sub-Section</u>	<u>Applies</u>	<u>Does not Apply</u>	<u>Applies as Amended</u>
01 5000	3.8 (B)	DDC Field Office / DDC Field Office Trailer		X	
	3.8 (B-3a)	DDC Field Office / DDC Managed Field Office Trailer		X	
	3.8 (B-3b)	DDC Field Office / CM Managed Field Office Trailer		X	
	3.8 (D)	DDC Field Office / Additional Equipment for the DDC Field Office	X		
	3.13(A-D)	Work Fence Enclosure		X	
	3.17(B)	Project Rendering		X	
	3.18 (A-C)	Security Guards / Fire Guards on Site		X	
01 5411	3.1 (A-J)	Temporary Use, Operation and Maintenance of Elevators During Construction for New Buildings Up To and Including 15 Stories		X	
	3.2 (A-M)	Temporary Use, Operation and Maintenance of Elevators During Construction for New Buildings Over 15 Stories		X	
	3.3 (A-E)	Temporary Use, Operation and Maintenance of Elevators During Construction for Existing Buildings		X	
01 7300	3.3 (A-I)	Surveys	X		
	3.4 (A-B)	Borings		X	
	3.12 (A-D)	Sleeves and Hangers		X	
	3.13 (A)	Sleeve and Penetration Drawings		X	
	3.15 (A)	Location of Partitions		X	
01 7419	1.5 (C)	Waste Management Performance Requirements / LEED Certification		X	
01 7900		Demonstration and Owner's Pre-Acceptance Orientation		X	
01 8113.03		Sustainable Design Requirements for LEED v3 Buildings		X	
01 8113.04		Sustainable Design Requirements for LEED v4 Buildings		X	
01 8113.13		VOC Limits for Adhesives, Sealants, Paints and Coatings for LEED v3 Buildings		X	
01 8119		Indoor Air Quality Requirements for LEED Buildings		X	
01 9113		General Commissioning Requirements for MEP Systems		X	
01 9115		General Commissioning Requirements for Building Enclosure		X	

VIII. SPECIAL EXPERIENCE REQUIREMENTS FOR THE PROJECT

Refer to the PASSPort Questionnaire for Special Experience Requirements.

IX. REVISIONS: SPECIFICATIONS AND CONTRACT DRAWINGS

The Specifications and the Contract Drawings for the Project are revised in accordance with the provisions set forth below.

- (1) Owner: Wherever the term "Owner" is used in the Specifications and/or the Contract Drawings, such term shall mean the City of New York.
- (2) Other Entities: In the event any entity other than the City of New York is referred to or named as the "Owner" in the Specifications and/or the Contract Drawings, the name of such other entity is deemed deleted and replaced with the "City of New York".
- (3) Architect / Engineer: Wherever the words "Architect", "Engineer", "Architect / Engineer" or "Architect and/or Engineer" are used in the Specifications and/or the Contract Drawings, such words are deemed deleted and replaced with the word "Commissioner".
- (4) Products / Manufacturers: Wherever the Specifications and/or the Contract Drawings require the Contractor to provide a particular product (i.e., material and/or equipment) from a designated manufacturer and/or vendor, the term "or approved equal" is deemed inserted, even if only one product and/or manufacturer is specified, except as otherwise provided below.
 - (a) Proprietary Items: If the Documents section in PASSPort contains a Notice which identifies a particular product from a designated manufacturer as a "Sole Source Product, the Contractor shall be required to provide such specified product. In such case, no substitution or "approved equal" will be permitted.
- (5) Special Experience Requirements: Special Experience Requirements for the Project, if any, are set forth in the PASSPort Questionnaire. Special Experience Requirements may apply to Contractors, subcontractors, installers, manufacturers and/or suppliers. If the Specifications and/or the Contract Drawings contain any Special Experience Requirement that is not set forth in the PASSPort Questionnaire, such Special Experience Requirement is deemed deleted, except as otherwise provided below.
 - (a) Any Special Experience Requirement that provides that the entity performing the work or supplying the material must have more than three (3) years of experience, is revised to provide that the entity performing the work or supplying the material must have three (3) years of experience, except as described in paragraph (b) below.
 - (b) Any Special Experience Requirement that pertains to the abatement of hazardous materials shall not be subject to the deletion and/or revision set forth above. Such Special Experience Requirement shall remain in full force and effect.
 - (c) Any Special Experience Requirement that provides that the entity performing the work must be licensed, authorized, certified, approved by or acceptable to the manufacturer, is deemed deleted and replaced with the requirement that such entity must be properly trained for the specified work.
 - (d) Any Special Experience Requirement that provides that the individual workers performing the work must be licensed, authorized, certified, approved by or acceptable to the manufacturer, is deemed deleted and replaced with the requirement that such individual workers must be properly trained for the specified work.
- (6) Alternate Bids: If the agency is requesting the submission of Alternate Bids, a Notice regarding such Alternate Bids is set forth in the Documents section in PASSPort. In the event of any conflict or inconsistency between (1) the Notice regarding Alternate Bids set forth in the Documents section in PASSPort and (2) a provision in the Specifications and/or the Contract Drawings regarding Alternate Bids, the Notice set forth in the Documents section in shall prevail. If the agency is not requesting the submission of Alternate Bids, as indicated by the absence of a Notice in the Documents section in PASSPort , and the Specifications and/or the Contract Drawings contain any provision regarding Alternate Bids, such provision is deemed deleted.
- (7) Contractor Retained Engineer: If the Specifications and/or the Contract Drawings require the Contractor to retain an Engineer to provide engineering services for the Project, the following sentence is deemed inserted: "Such Engineer must be a Professional Engineer, licensed in the State of New York."
- (8) LEED Related Provisions: If the Specifications and/or the Contract Drawings require the Contractor to purchase FSC certified wood, rapidly renewable materials, or materials within 500 miles (LEED v3) or 100 miles (LEED

v4), such provisions are deemed deleted and replaced with the requirement that if the Contractor has purchased FSC certified wood, rapidly renewable materials, or materials within 500 miles (LEED v3) or 100 miles (LEED v4), the Contractor shall submit such forms or documentation as may be required by the City in order for the USGBC to certify that the Project qualifies for the related LEED credit(s).

- (9) Guarantees: Requirements for Guarantees and Maintenance are set forth in Schedule B, which is included in the Addendum to the General Conditions. In the event of any conflict or inconsistency between (1) a guarantee and/or maintenance requirement set forth in the Specifications and/or the Contract Drawings and (2) a guarantee and/or maintenance requirement set forth in Schedule B, the guarantee and/or maintenance requirement set forth in Schedule B shall prevail.
- (10) Warranties: Requirements for Warranties are set forth in Schedule B, which is included in the Addendum to the General Conditions.
- (a) The term "manufacturer's warranty" as described in this article encompasses the following terms as indicated in the Specifications: "Manufacturer's Warranty", "Manufacturer's Special Warranty", "Special Warranty", "Special Finish Warranty", "Manufacturer's Special Warranty for a (product, assembly)."
 - (b) In the event of any conflict or inconsistency between (1) a warranty requirement set forth in the Specifications and/or the Contract Drawings and (2) a warranty requirement set forth in Schedule B, the warranty requirement set forth in Schedule B shall prevail.
 - (c) In the event a warranty requirement set forth in the Specifications and/or the Contract Drawings is omitted from Schedule B, such omission from Schedule B shall have no effect and the Contractor's obligation to provide the manufacturer's warranty, as set forth in the Specifications and/or the Contract Drawings, shall remain in full force and effect.
 - (d) In the event a warranty requirement for a particular item of material or equipment is omitted from Schedule B, as well as from the Specifications or the Contract Drawings, and the manufacturer of such item actually provides a warranty, the Contractor shall be obligated to obtain and deliver to the Commissioner the highest level of warranty actually provided by that manufacturer.
- (11) Exculpatory Provisions: In the event the Specifications and/or the Contract Drawings contain any provision whereby the consultant and/or any of its officers, employees or agents, including subconsultants, is absolved of responsibility for any act or omission, such provision is deemed deleted.
- (12) Insurance: Provisions regarding insurance coverage the Contractor is required to provide are set forth in Article 22 of the City of New York Standard Construction Contract and Schedule A, which is included in the Addendum to the General Conditions. In the event the Specifications and/or the Contract Drawings contain any provision regarding insurance requirements, such provision is deemed deleted.
- (13) Indemnification: Provisions regarding indemnification are set forth in Articles 7, 12, 22 and 57 of the City of New York Standard Construction Contract. In the event the Specifications and/or the Contract Drawings contain any provision regarding indemnification, such provision is deemed deleted.
- (14) Dispute Resolution: Provisions regarding dispute resolution are set forth in Article 27 of the City of New York Standard Construction Contract. In the event the Specifications and/or the Contract Drawings contain any provision regarding dispute resolution, such provision is deemed deleted.
- (15) Payment to Other Entities: In the event the Specifications and/or the Contract Drawings contain any provision which requires the Contractor to make payments to an entity other than a subcontractor and/or supplier providing services and/or material for the project, such provision is deemed deleted.
- (16) General Conditions: In the event of any conflict or inconsistency between (1) the Specifications and/or the Contract Drawings and (2) the General Conditions, the General Conditions shall prevail.
- (17) Standard Construction Contract: In the event of any conflict or inconsistency between (1) the Specifications and/or the Contract Drawings and (2) the City of New York Standard Construction Contract, the City of New York Standard Construction Contract shall prevail.

SCHEDULE A (FOR PUBLICLY BID PROJECTS)
PART I - Contract Requirements

Various Articles of the Contract refer to requirements which are set forth in Schedule A of the General Conditions. The Schedule set forth below specifies the following: (1) the referenced Articles of the Contract, and (2) the specific requirements applicable to the contract.

REFERENCE	ITEM	REQUIREMENTS	CONTRACT #1
Information For Bidders	Bid Security		See the PASSPort Procurement Information
Information For Bidders	Performance and Payment Bonds		For Contracts in the amount of \$1,000,000.00 or more, Performance and Payment Bonds must each be in amount equal to 100% of the Contract Price.
Information For Bidders	Department of Design and Construction Safety Requirements	The Contractor must provide the safety personnel as indicated to the right	<input checked="" type="checkbox"/> Project Safety Representative <input type="checkbox"/> Dedicated, full-time Project Safety Manager
Article 14 Contract	Time of Substantial Completion	Consecutive Calendar Days	480 ccds
Article 15 Contract	Liquidated Damages	For each consecutive calendar day over completion time	\$600
Article 17 Contract	Sub-Contracts	Not to exceed Percent of Contract Price	50%
Article 21 Contract	Retainage	Percent of Voucher	If 100% bonds are required 5% If 100% bonds are not required, and Contract Price is \$1,000,000 or less 5% If 100% bonds are not required, and Contract Price is more than \$1,000,000 10%
Article 24 Contract	Deposit Guarantee	Percent of Contract Price	1%
Article 24 Contract	Period of Guarantee		See Schedule B of the Addendum to the General Conditions
Article 74 Contract	Statement of Work		Addenda, numbered: _____
Article 75 Contract	Compensation to be Paid to Contractor		Amount for which the Contract was Awarded: _____ Dollars (\$ _____)
Article 79 Contract	MWBE Program		See M/WBE Utilization Plan in the PASSPort Procurement M/WBE Considerations Section.

SCHEDULE A (FOR PUBLICLY BID PROJECTS)

Relating to Article 22 - Insurance

PART II. Types of Insurance, Minimum Limits and Special Conditions

Note: All certificate(s) of insurance submitted pursuant to Contract Article 22.3. 3 must be accompanied by a Certification by Broker consistent with Part III below and include the following information:

- For each insurance policy, the name and NAIC number of issuing company, number of policy, and effective dates;
- Policy limits consistent with the requirements listed below;
- Additional insureds or loss payees consistent with the requirements listed below; and
- The number assigned to the Contract by the City (in the "Description of Operations" field).

Insurance indicated by a blackened box (■) or by (X) in the ☐ to left will be required under this contract.

Types of Insurance (per Article 22 in its entirety, including listed paragraph)	Minimum Limits and Special Conditions
<div>■ Commercial General Liability Art. 22.1.1</div>	<p>This Contract requires Commercial General Liability Insurance (CGL) that is at least as broad as ISO Form CG 00 01 (see Section 22.1.1 of the New York City Standard Construction Contract). CGL policies that include endorsements that add exclusions to ISO Form CG 00 01 do not comply with the Contract. The Department may, in its sole discretion, accept endorsements that add exclusions, but the Department will generally reject endorsements that add exclusions that exempt all or part of the Work of the Project. For example, if the Project includes Work on a roof of a four-story building, the Department will reject a CGL policy that includes a "Three Story Height Limitation Endorsement."</p> <p>The minimum limits shall be \$1,000,000.00 per occurrence and \$2,000,000.00 per project aggregate applicable to this Contract.</p> <p>Additional Insureds:</p> <ol style="list-style-type: none"> 1. City of New York, including its officials and employees, with coverage at least as broad as ISO Forms CG 20 10 and CG 20 37, and 2. All person(s) or organization(s), if any, that Article 22.1.1(b) of the Contract requires to be named as Additional Insured(s), with coverage at least as broad as ISO Form CG 20 26. The Additional Insured endorsement shall either specify the entity's name, if known, or the entity's title (e.g., Project Manager). 3. _____

SCHEDULE A (FOR PUBLICLY BID PROJECTS)

Relating to Article 22 - Insurance

PART II. Types of Insurance, Minimum Limits and Special Conditions

Insurance indicated by a blackened box (■) or by (X) in the ☐ to left will be required under this contract.

Types of Insurance (per Article 22 in its entirety, including listed paragraph)	Minimum Limits and Special Conditions
<div> <div>■ Workers' Compensation</div> <div>Art. 22.1.2</div> </div> <div> <div>■ Disability Benefits Insurance</div> <div>Art. 22.1.2</div> </div> <div> <div>■ Employers' Liability</div> <div>Art. 22.1.2</div> </div> <div> <div><input type="checkbox"/> Jones Act</div> <div>Art. 22.1.3</div> </div> <div> <div><input type="checkbox"/> U.S. Longshoremen's and Harbor Workers Compensation Act</div> <div>Art. 22.1.3</div> </div>	<p>Workers' Compensation, Employers' Liability, and Disability Benefits Insurance: Statutory per New York State law without regard to jurisdiction.</p> <p>Note: The following forms are acceptable: (1) New York State Workers' Compensation Board Form No. C-105.2, (2) State Insurance Fund Form No. U-26.3, (3) New York State Workers' Compensation Board Form No. DB-120.1 and (3) Request for WC/DB Exemption Form No. CE-200. The City will not accept an ACORD form as proof of Workers' Compensation or Disability Insurance.</p> <p>Jones Act and U.S. Longshoremen's and Harbor Workers' Compensation Act: Statutory per U.S. law.</p>
<div> <div>■ Builders' Risk</div> <div>Art. 22.1.4</div> </div>	<p>100 % of total value of Work</p> <p>Contractor the Named Insured; the City both an Additional Insured and one of the loss payees as its interests may appear.</p> <p>If the Work does not involve construction of a new building or gut renovation work, the Contractor may provide an installation floater in lieu of Builders Risk insurance.</p> <p>Note: Builders Risk Insurance may terminate upon Substantial Completion of the Work in its entirety.</p>
<div> <div>■ Commercial Auto Liability</div> <div>Art. 22.1.5</div> </div>	<p>\$1,000,000.00 per accident combined single limit</p> <p>If vehicles are used for transporting hazardous materials, the Contractor shall provide pollution liability broadened coverage for covered vehicles (endorsement CA 99 48) as well as proof of MCS 90</p>

SCHEDULE A (FOR PUBLICLY BID PROJECTS)

Relating to Article 22 - Insurance

PART II. Types of Insurance, Minimum Limits and Special Conditions

Insurance indicated by a blackened box (■) or by (X) in the ☐ to left will be required under this contract.

Types of Insurance (per Article 22 in its entirety, including listed paragraph)	Minimum Limits and Special Conditions
<input type="checkbox"/> Contractor's Pollution Liability Art. 22.1.6	<p>\$_____ per occurrence</p> <p>\$_____ aggregate</p> <p>Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____</p>
<input type="checkbox"/> Marine Protection and Indemnity Art. 22.1.7(a)	<p>\$_____ per occurrence</p> <p>\$_____ aggregate</p> <p>Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____</p>
<input type="checkbox"/> Hull and Machinery Insurance Art. 22.1.7(b)	<p>\$_____ per occurrence</p> <p>\$_____ aggregate</p> <p>Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____</p>
<input type="checkbox"/> Marine Pollution Liability Art. 22.1.7(c)	<p>\$_____ each occurrence</p> <p>Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____</p>
<p>[OTHER] Art. 22.1.8</p> <p><input type="checkbox"/> Ship Repairers Legal Liability</p>	<p>\$_____ each occurrence</p>

SCHEDULE A (FOR PUBLICLY BID PROJECTS)

Relating to Article 22 - Insurance

PART II. Types of Insurance, Minimum Limits and Special Conditions (Continued)

Insurance indicated by a blackened box (■) or by (X) in the ☐ to left will be required under this contract.

Types of Insurance (per Article 22 in its entirety, including listed paragraph)	Minimum Limits and Special Conditions
<p>[OTHER] Art. 22.1.8</p> <p><input type="checkbox"/> Collision Liability/Towers Liability</p>	<p>\$_____ per occurrence</p> <p>\$_____ aggregate</p> <p>Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____</p>
<p>[OTHER] Art. 22.1.8</p> <p><input type="checkbox"/> Railroad Protective Liability _____</p>	<p>\$_____ per occurrence</p> <p>\$_____ aggregate</p> <p>Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____</p>
<p>[OTHER] Art. 22.1.8</p> <p>■ Asbestos Liability _____</p>	<p>Only required of the Contractor or Subcontractor performing any required asbestos removal.</p> <p>\$1,000,000 each occurrence, \$2,000,000 aggregate (Combined Single Limit); only required of the Contractor or Subcontractor performing any required asbestos removal.</p> <p>Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____</p>

SCHEDULE A (FOR PUBLICLY BID PROJECTS)

Relating to Article 22 - Insurance

PART II. Types of Insurance, Minimum Limits and Special Conditions (Continued)

Insurance indicated by a blackened box (■) or by (X) in the ☐ to left will be required under this contract.

<p>[OTHER] Art. 22.1.8</p> <p><input type="checkbox"/> Boiler Insurance</p>	<p>\$200,000</p>
<p>[OTHER] Art. 22.1.8</p> <p>■ Professional Liability</p> <p>In the event any section of the Specifications requires the Contractor to engage a Professional Engineer to provide design and/or engineering services, the Engineer engaged by the Contractor, as well as any sub consultant(s) performing professional services, shall provide Professional Liability Insurance.</p>	<p>\$1,000,000 per occurrence</p> <p>The Contractor's Professional Engineer shall maintain and submit evidence of Professional Liability Insurance in the minimum amount of \$1,000,000 per claim. The policy or policies shall include an endorsement to cover the liability assumed by the Contractor under this Agreement arising out of the negligent performance of professional services or caused by an error, omission or negligent act of the Contractor's Professional Engineer or anyone employed by the Contractor's Professional Engineer.</p> <p>Claims-made policies will be accepted for Professional Liability Insurance. All such policies shall have an extended reporting period option or automatic coverage of not less than two (2) years. If available as an option, the Contractor's Professional Engineer shall purchase extended reporting period coverage effective on cancellation or termination of such insurance unless a new policy is secured with a retroactive date, including at least the last policy year.</p>

SCHEDULE A (FOR PUBLICLY BID PROJECTS)

Relating to Article 22 - Insurance

PART III. Certificates of Insurance

All certificates of insurance (except certificates of insurance solely evidencing Workers' Compensation Insurance, Employer's Liability Insurance, and/or Disability Benefits Insurance) must be accompanied by one of the following:

- (1) the Certification by Insurance Broker or Agent on the following page setting forth the required information and signatures;

-- OR --

- (2) copies of all policies as certified by an authorized representative of the issuing insurance carrier that are referenced in such certificate of insurance. If any policy is not available at the time of submission, certified binders may be submitted until such time as the policy is available, at which time a certified copy of the policy shall be submitted.

SCHEDULE A (FOR PUBLICLY BID PROJECTS)

Relating to Article 22 - Insurance

PART III. Certification by Insurance Broker or Agent

The undersigned insurance broker or agent represents to the City of New York that the attached Certificate of Insurance is accurate in all material respects.

[Name of broker or agent (typewritten)]

[Address of broker or agent (typewritten)]

[Email address of broker or agent (typewritten)]

[Phone number/Fax number of broker or agent (typewritten)]

[Signature of authorized official or broker or agent]

[Name and title of authorized official, broker or agent (typewritten)]

State of)
County of) ss:

Sworn to before me this

_____ day of _____, 20____

NOTARY PUBLIC FOR THE STATE OF _____

SCHEDULE A (FOR PUBLICLY BID PROJECTS)

Relating to Article 22 - Insurance

PART IV. Address of Commissioner

Wherever reference is made in Article 7 or Article 22 to documents to be sent to the **Commissioner** (e.g., notices, filings, or submissions), such documents shall be sent to the address set forth below or, in the absence of such address, to the **Commissioner's** address as provided elsewhere in this **Contract**.

ACCO's Office, Insurance Unit

30-30 Thomson Avenue, 4th Floor

Long Island City, New York 11101

SCHEDULE B

Guarantees and Warranties

(Reference: Section 01 7839, Article 2.7 of the DDC Standard General Conditions)

GUARANTY FROM CONTRACTOR

(1) Contractor's Guaranty Obligation: The Contractor shall promptly repair, replace, restore or rebuild, as the Commissioner may determine, any finished Work in which defects of materials or workmanship may appear or to which damage may occur because of such defects, during the one (1) year period subsequent to the date of Substantial Completion (or use and occupancy in accordance with the Contract), except for the areas of Work set forth below:

- Roofing, Waterproofing, and Joint Sealant Work. For these types of work, the guarantee period shall be (2) two years.
- Trees and/or Plant Material. For trees and/or plant material furnished and installed, the guarantee period shall be (2) two years. During the guarantee period, the Contractor shall provide all maintenance services set forth in the Specifications.

(2) Guaranty Period: The obligation of the Contractor, and its Surety under the Performance Bond, is limited to the period(s) of time specified above.

(3) Other Provisions Deemed Deleted: In the event the Specifications and/or the Contract Drawings contain any provisions regarding guaranty requirements, such provisions are deemed deleted and replaced with the guaranty requirements set forth in this Schedule B.

WARRANTY FROM MANUFACTURER

(1) Contractor's Obligation to Provide Warranties: The items of material and/or equipment for which manufacturer warranties are required are listed below. For each item of material and/or equipment listed below, the Contractor shall obtain a written warranty from the manufacturer. Such warranty shall provide that the material or equipment is free from defects for the period set forth below and will be replaced or repaired within such specified period. The Contractor shall deliver all required warranties to the Commissioner.

(2) Required Warranties:

Specification Number	Material or Equipment	Warranty Period
04 72 00	Cast Stone Units:	10 Years
07 14 16	Liquid-Applied Flashing Membrane:	20 Years
07 62 00	Zinc-Tin Alloy-Coated Copper:	10 Years
07 91 00	Joint Sealant	5 Years
07 92 00	Preformed Foam Joint Seal	5 Years
08 51 13	Aluminum Window Unit	10 Years
08 51 13	Glazing Units at Window Unit	5 Years
08 51 13	Aluminum Finish at Window Unit	10 Years
08 91 19	Aluminum Louver Unit	20 Years
09 96 53	Elastomeric Coating	10 Years

(3) Application: The obligations under the warranty for the periods specified above shall apply only to the manufacturer of the material or equipment, and not to the Contractor or its Surety; provided, however, the Contractor retains responsibility for obtaining all required warranties from the manufacturers and delivering the same to the Commissioner.

(4) Other Provisions: The warranty requirements set forth in this Schedule B are also included in the Specifications.

- (a) In the event of any conflict between a warranty requirement set forth in the Specifications and a warranty requirement set forth in Schedule B, the warranty requirement set forth in Schedule B shall take precedence.
- (b) In the event a warranty requirement set forth in the Specifications is omitted from Schedule B, such omission from Schedule B shall have no effect and the Contractor's obligation to provide the manufacturer's warranty, as set forth in the Specifications, shall remain in full force and effect.
- (c) In the event a warranty requirement for a particular item of material or equipment is omitted from both Schedule B and the Specifications, and the manufacturer of such item actually provides a warranty, the Contractor shall be obligated to obtain and deliver to the Commissioner the highest level of warranty actually provided by that manufacturer.
- (d) In the event a warranty requirement is provided for a particular item of material or equipment, and such requirement specifies a warranty period that is longer than that which is actually provided by any of the specified manufacturers, the Contractor shall be obligated to obtain and deliver to the Commissioner the highest level of warranty actually provided by any of the specified manufacturers, unless otherwise directed in writing by the Commissioner.
- (e) Unless indicated otherwise Warranties are to take effect on the date of Substantial Completion.

SCHEDULE C**Contract Drawings**

(Reference: Section 01 1000, Article 1.5 (A) of the DDC Standard General Conditions)

The Schedule set forth below lists all Contract Drawings for the Project.

T-001.00 Title Sheet and Notes;
G-001.00 General Notes;
G-002.00 Flood Insurance Rate Map 2007;
G-003.00 Flood Insurance Rate Map 2013;
A-101.00 Roof Plan;
A-201.00 West Elevation;
A-202.00 West Court Elevations;
A-301.00 Repair Details I;
A-302.00 Repair Details II;
A-303.00 Repair Details III;
A-304.00 Repair Details IV;
A-305.00 Repair Details V;
A-306.00 Repair Details VI;
A-307.00 Repair Details VII;
A-308.00 Window Replacement Details I;
A-309.00 Window Replacement Details II.
H-001.00 Asbestos Abatement – General Notes
H-002.00 Asbestos Abatement – Roof Plan
H-003.00 Asbestos Abatement – West Elevation
H004.00 Asbestos Abatement – West Court Elevators

SCHEDULE D

Electrical Motor Control Equipment

NO TEXT

SCHEDULE E
Separation of Trades

NOT USED FOR SINGLE CONTRACTS



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DIVISION 3 - CONCRETE

NOT USED

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NOT USED

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NOT USED

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APPENDIX APPENDIX #1 - LIMITED MATERIALS TESTING REPORT BY JABLONSKI BUILDING
CONSERVATION, INC. (07/20/2018)

CONTRACT # 1

GENERAL CONSTRUCTION WORK

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SECTION 01 22 00 EXPANDED WORK ALLOWANCE

PART 1 - GENERAL

1.1 PURPOSE

- A. An Allowance has been established for the items set forth in sub-section 1.3 below ("Expanded Work Allowance" or "EWA"). Payment for the items set forth in sub-section 1.3 ("Expanded Work Items") may be made through the EWA, as directed by the Engineer. "Extra Work", "overrun", and "Allowance" are defined by the Standard Construction Contract (see Articles 2.1.16, 26.1, and 2.1.4, respectively) and nothing in this Section alters, or will be deemed to alter the interpretation or application of, the Standard Construction Contract, including but not limited to Articles 25, 26, 28, and 78 of the Standard Construction Contract.

1.2 PROCESS

- A. If the Engineer determines that use of the EWA is appropriate, in their sole discretion, the Engineer will prepare a written scope document for the Expanded Work Items for the Contractor's execution ("EWA Scope Memo"). The EWA Scope Memo will set forth the maximum amount payable from the EWA prior to the execution of a final cost memorandum ("Maximum Amount"), in accordance with this Section. The Maximum Amount may be increased from time to time by the Engineer, in their sole discretion, except that the Maximum Amount may not exceed 80% of the Engineer's estimated total cost for such Work (the "Estimated Cost") unless and until a final cost is determined and a final cost memorandum ("Final Cost Memo") executed in accordance with this Section.
- B. Neither the Maximum Amount nor the Estimated Cost will be deemed to be the final cost of the Expanded Work Items. The final cost for the Expanded Work Items will be determined in accordance with Article 26 of the Standard Construction Contract. The Contractor must submit its detailed price proposal for the Expanded Work Items, calculated in accordance with the Contract, within the time period set forth in the EWA Scope Memo or within 90 Days after the executed EWA Scope Memo is issued to the Contractor, whichever is sooner.
- C. Once the EWA Scope Memo is executed and the Contractor is directed to proceed with the Work, DDC will make progress payments, as provided in the Contract, up to the Maximum Amount or until the submission period has expired, whichever occurs sooner.
- D. DDC will not make any progress payments for the performance of the Expanded Work Items beyond the submission period set forth in sub-Section C, above, unless and until a final cost has been determined and a Final Cost Memo executed in accordance with this Section. No amounts above the Maximum Amount set by the Engineer will be payable from the EWA, unless and until a final cost has been determined and a Final Cost Memo executed in accordance with this Section. In all events, the Contractor shall promptly and diligently comply with the Engineer's direction and perform all Work required by the Contract and the EWA Scope Memo.
- E. Upon receipt of the Contractor's cost detailed proposal, DDC will evaluate the proposal and initiate negotiations, as necessary, to determine the final cost of the Expanded Work Items in accordance with Article 26 of the Standard Construction Contract. The Contractor is responsible to furnish time and material records



in accordance with Article 28 of the Standard Construction Contract until a Final Cost Memo is executed. If the parties cannot agree on a unit price or fixed price, the Contractor will be paid on the basis of time and material records in accordance with Article 26 the Standard Construction Contract.

- F. A Final Cost Memo will be prepared by the Engineer to be executed by the parties. The total net sum of the amounts added and/or credited under the EWA Scope Memo and payment of the finalized Final Cost Memo constitutes full accord and satisfaction for the costs resulting from the Expanded Work Items. In the event the EWA is insufficient to pay the full amount of the Final Cost Memo, the parties agree to execute change order documents for the remaining funds, subject to registration in accordance with the New York City Charter.

1.3 PRICE TO COVER

- A. Expanded Work Items are those items set forth below. The EWA may be used, in the Engineer's discretion, for the following Expanded Work Items:
1. Non-material changes in the Work necessary to complete Contract Work due to site conditions that differ from those included in the Contract Documents and that could not have been anticipated by the Contractor.
 2. Non-material changes in the Work directed by the Commissioner that result in a net change in the cost to the Contractor for the Work to be performed under this Contract, including but not limited to the following:
 - a. Overruns of unit price items and quantity increases in portions of work within a lump sum item.
 - b. NYCDOT traffic stipulations or permit requirements that significantly differ from those included in the Contract Documents and that could not have been anticipated by the Contractor.
 - c. Changes to the sizes of materials or changes to specifications of materials.
 - d. Materials/structures not included in the Contract Documents that are necessary to complete Contract Work and that could not have been anticipated by the Contractor.

1.4 BASIS OF PAYMENT

- A. The fixed sum must be considered the price bid for this item. The fixed sum is not to be altered in any manner by the bidder. Should the amount shown be altered, the new figures will be disregarded, and the original price will be used to determine the total amount bid for the contract.
- B. The payment(s) made under this item will be equal to the Final Cost Memo prepared by the Engineer and executed by the parties in accordance with 1.2(F) above as proof of work performed for this item as approved by the Engineer.
- C. The total estimated cost of this item is the "fixed sum" amount shown for this item in the Bid Form and shall not be varied in the bid. The "fixed sum" amount is included in the bid solely to ensure that sufficient monies will be available to pay the Contractor for this work, which may be more or less than the fixed sum amount.
- D. The price will cover the cost of all labor, materials, equipment, insurance, and incidentals necessary to complete the work under this section in accordance with the Contract Drawings, the specifications, and the directions of the Engineer.

END OF SECTION 01 22 00



SECTION 02 42 96 - HISTORIC REMOVAL AND DISMANTLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section includes historic treatment procedures in the form of special types of selective demolition work for designated historic spaces, areas, rooms, and surfaces and the following specific work:
 - 1. Removal and dismantling of indicated portions of building or structure and debris hauling.
 - 2. Removal and dismantling of indicated site elements and debris hauling.
- B. Related Requirements:
 - 1. Section 04 03 22 "Historic Brick Unit Masonry Repair";
 - 2. Section 04 03 23 "Historic Brick Unit Masonry Repointing";
 - 3. Section 04 03 42 "Historic Cast-Stone Masonry Repair";
 - 4. Section 04 03 43 "Historic Cast-Stone Masonry Repointing".

1.3 DEFINITIONS

- A. Dismantle: To disassemble or detach a historic item from a surface, or a nonhistoric item from a historic surface, using gentle methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.
- B. Existing to Remain: Existing items that are not to be removed or dismantled, except to the degree indicated for performing required Work.
- C. Remove: To take down or detach a nonhistoric item located within a historic area, using methods and equipment to prevent damage to historic items and surfaces; disposing of items unless indicated to be salvaged or reinstalled.
- D. Retain: To keep existing items that are not to be removed or dismantled.



1.4 PRECONSTRUCTION MEETINGS

- A. Preconstruction Conference(s): Conduct conference(s) at Project site.
 - 1. Review minutes of Preliminary Historic Treatment Conference that pertain to removal and dismantling procedures and protection of historic areas and surfaces.
 - 2. Review list of items indicated to be salvaged.
 - 3. Verify qualifications of personnel assigned to perform removal and dismantling.
 - 4. Inspect and discuss condition of each construction type to be removed or dismantled.
 - 5. Review requirements of other work that depends on condition of substrates exposed by removal and dismantling work.
 - 6. Review methods and procedures related to removal and dismantling work, including, but not limited to, the following:
 - a. Historic removal and dismantling specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Materials, material application, sequencing, tolerances, and required clearances.
 - c. Fire prevention.
 - d. Coordination with building occupants.

1.5 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 "Submittal Procedures".

1.6 SUBMITTALS

- A. Qualification Data: For historic removal and dismantling specialist.
- B. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by Contractor's removal and dismantling operations.
- C. Removal and Dismantling Historic Treatment Program: Submit 30 days before work begins.

1.7 QUALITY ASSURANCE

- A. Refer to DDC General Conditions Section 01 40 00 "Quality Requirements".
- B. Historic Removal and Dismantling Specialist Qualifications: A qualified historic treatment specialist. General selective demolition experience is insufficient experience for historic removal and dismantling work.
- C. Removal and Dismantling Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of removal and dismantling work, including protection of surrounding and substrate materials and Project site.



1. Dust and Noise Control: Include locations of proposed temporary dust- and noise-control partitions and means of egress from occupied areas coordinated with continuing on-site operations and other known work in progress.
 2. Debris Hauling: Include plans clearly marked to show debris hauling routes, turning radii, and locations and details of temporary protective barriers.
- D. Mockups: Prepare mockups of specific historic removal and dismantling procedures specified in this Section to demonstrate aesthetic effects and to set quality standards for materials and execution.
1. Typical Removal Work: Remove typical wall area as shown on Drawings.
 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Commissioner specifically approves such deviations in writing.
- E. Regulatory Requirements: Comply with notification regulations of authorities having jurisdiction before beginning removal and dismantling work. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.8 FIELD CONDITIONS

- A. Conditions existing at time of inspection for bidding purpose will be maintained by the City of New York as far as practical.
- B. Notify Commissioner of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.
- C. Hazardous Materials: Hazardous materials are present in construction affected by removal and dismantling work. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
1. Hazardous material remediation is specified elsewhere in the Contract Documents.
 2. Do not disturb hazardous materials or items suspected of containing hazardous materials, except under procedures specified elsewhere in the Contract Documents.
 3. If unanticipated asbestos is suspected, stop work in the area of potential hazard, shut off fans and other air handlers ventilating the area, and rope off area until the questionable material is identified. Reassign workers to continue work in unaffected areas. Resume work in the area of concern after safe working conditions are verified.
- D. Storage or sale of removed or dismantled items on-site is not permitted unless otherwise indicated.



PART 2 - PRODUCTS - (NOT USED)

PART 3 - EXECUTION

3.1 EXECUTION REQUIREMENTS

- A. Refer to DDC General Conditions for execution requirements.

3.2 HISTORIC REMOVAL AND DISMANTLING EQUIPMENT

- A. Removal Equipment: Use only hand-held tools, except as follows or unless otherwise approved by Commissioner on a case-by-case basis:
 - 1. Light jackhammers are allowed subject to Commissioner's approval.
 - 2. Large air hammers are not permitted.
- B. Dismantling Equipment: Use manual, hand-held tools, except as follows or otherwise approved by Commissioner on a case-by-case basis:
 - 1. Hand-held power tools and cutting torches are permitted only as submitted in the historic treatment program. They must be adjustable so as to penetrate or cut only the thickness of material being removed.
 - 2. Pry bars more than 18 inches (450 mm) long and hammers weighing more than 2 lb (0.9 kg) are not permitted for dismantling work.

3.3 EXAMINATION

- A. Preparation for Removal and Dismantling: Examine construction to be removed or dismantled to determine best methods to safely and effectively perform removal and dismantling work. Examine adjacent work to determine what protective measures are necessary. Make explorations, probes, and inquiries as necessary to determine condition of construction to be removed or dismantled and location of utilities and services to remain that may be hidden by construction that is to be removed or dismantled.
 - 1. Verify that affected utilities are disconnected and capped.
 - 2. Inventory and record the condition of items to be removed and dismantled for reinstallation or salvage. Enter this information on the submittal of inventory of salvaged items.
 - 3. Before removal or dismantling of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.
- B. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.



- C. Perform surveys as the Work progresses to detect hazards resulting from historic removal and dismantling procedures.

3.4 HISTORIC REMOVAL AND DISMANTLING

- A. General: Have removal and dismantling work performed by a qualified historic removal and dismantling specialist. Ensure that historic removal and dismantling specialist's field supervisors are present when removal and dismantling work begins and during its progress.
- B. Perform work according to the historic treatment program and approved mockup(s).
 - 1. Perform removal and dismantling to the limits indicated.
 - 2. Provide supports or reinforcement for existing construction that becomes temporarily weakened by removal and dismantling work, until the Project Work is completed unless otherwise indicated.
 - 3. Perform cutting by hand or with small power tools wherever possible. Cut holes and slots neatly to size required, with minimum disturbance of adjacent work.
 - 4. Do not operate air compressors inside building unless approved by Commissioner in each case.
 - 5. Do not drill or cut columns, beams, joints, girders, structural slabs, or other structural supporting elements, without having Contractor's professional engineer's written approval for each location before such work is begun.
 - 6. Dispose of removed and dismantled items off-site unless indicated to be salvaged or reinstalled.
- C. Water-Mist Sprinkling: Use water-mist sprinkling and other wet methods to control dust only with adequate, approved procedures and equipment according to the historic treatment program to ensure that such water does not create a hazard or adversely affect other building areas or materials.
- D. Unacceptable Equipment: Keep equipment that is not permitted for historic removal or dismantling work away from the vicinity where such work is being performed.
- E. Removing and Dismantling Items on or Near Historic Surfaces:
 - 1. Use only dismantling equipment and procedures within 12 inches (300 mm) of historic surface. Do not use pry bars. Protect historic surface from contact with or damage by tools.
 - 2. Unfasten items in the opposite order from which they were installed.
 - 3. Support each item as it becomes loosened to prevent stress and damage to the historic surface.
 - 4. Dismantle anchorages.
- F. Masonry Walls:
 - 1. Remove masonry carefully, and erect temporary bracing and supports as needed to prevent collapse of materials being removed.



2. Dismantle top edge and sides before removing wall. Stop removal work and immediately inform Commissioner if any structural elements above or adjacent to the work show signs of distress or dislocation during any phase of removal work.
3. Remove wall in easily managed pieces.
4. During removal, maintain the stability of the partially remaining wall. Notify Commissioner of the condition of temporary bracing for wall if work is temporarily stopped during the wall's removal.

G. Steelwork:

1. Expose structural steel for examination by Commissioner and Contractor's professional engineer before proceeding with removal or dismantling.
2. If distress in structure is apparent during performance of the work, stop removal or dismantling and take immediate precautionary measures to ensure safety of the structure. Inform Commissioner of the problem, steps taken, and proposed corrective actions.
3. Brace and support structural steel being removed and remaining during removal and dismantling.
4. Concrete-Encased Steel: Where steel is known to be encased by concrete that is being removed, saw cut with blades that can cut no deeper than the thickness of the concrete cover, with an adequate margin for error in the location of the steel. Isolate sections of concrete by saw cutting before beginning removal.

H. Anchorages:

1. Remove anchorages associated with removed items.
2. Dismantle anchorages associated with dismantled items.
3. In nonhistoric surfaces, patch holes created by anchorage removal or dismantling according to the requirements for new work.
4. In historic surfaces, patch or repair holes created by anchorage removal or dismantling according to Section that is specific to the historic surface being patched.

3.5 HISTORIC REMOVAL AND DISMANTLING SCHEDULE

- A. Existing Items to Be Removed and Replaced: Roof parapet, cast stone cornice, cast stone window sills, deteriorated mortar joints, spalled/cracked bricks, spalled/cracked cast stone, steel lintels, windows and deteriorated sealant.

END OF SECTION 02 42 96



**SECTION 028013 – GENERAL CONTRACTOR WORK
NOVEMBER 2017 VERSION**

ALLOWANCE FOR INCIDENTAL ASBESTOS ABATEMENT

1.01 SCOPE FOR ASBESTOS ABATEMENT WORK

- A. The "General Conditions" apply to the work of this Section.
- B. The asbestos abatement contractor shall remove asbestos containing materials as needed to perform the other work of this Contract when discovered during the course of work. When required, the asbestos abatement contractor shall replace the ACM with non-asbestos containing materials. An allowance of **\$15,000.00** for the **General Contractor** is herein established for this incidental work when so ordered and authorized by the Commissioner.
- C. All work shall be done in accordance with the applicable provisions of the rules and regulations of the asbestos control program as promulgated by Title 15 Chapter I of RCNY and New York State Department of Labor Industrial Code Rule 56 cited as 12 NYCRR Part 56, whichever is more stringent as per latest amendments to these laws and as modified herein by these specifications.
- D. All disposal of asbestos contaminated material shall be per Local Law 70/85.
- E. The asbestos abatement contractor's attention is directed to the fact that certain methods of asbestos abatement are protected by patents. To date, patents have been issued with respect to "negative pressure enclosure" or "negative-air" or "reduced pressure" and "glove bag".
- F. The asbestos abatement contractor shall be solely responsible for and shall hold the Department of Design and Construction and the City harmless from any and all damages, losses and expenses resulting from any infringement by the asbestos abatement contractor of any patent, including but not limited to the patents described above, used by the asbestos abatement contractor during performance of this agreement.
- G. "Asbestos" shall mean any hydrated mineral silicate separable into commercially usable fibers, including but not limited to chrysotile (serpentine), amosite (cummingtonite-grunerite), crocidolite (riebeckite), tremolite, anthrophyllite and actinolite.
- H. Prior to starting, the asbestos abatement contractor must notify the Commissioner of the Department of Design and Construction if he/she anticipates any difficulty in performing the work as required by these Specifications. The asbestos



abatement contractor is responsible to prepare and submit all filings, notifications, etc. required by all City, State and Federal regulatory agencies having jurisdiction.

The asbestos abatement contractor is responsible for submitting the Asbestos Project Notification Form (ACP-7 Form) to the Department of Environmental Protection, Asbestos Control Program, as per Title 15, Chapter I of RCNY and to the NYSDOL as per Industrial Code Rule 56.

The asbestos abatement contractor is responsible for preparing, and submitting Asbestos Variance Application (ACP-9). If a Variance is required, the asbestos abatement contractor is responsible to retain a NYSDOL Asbestos Project Designer, as defined in Title 15, Chapter 1 of the RCNY to prepare and submit the required variance.

The general contractor is responsible for preparing and submitting an Asbestos Abatement Permit and/or Work Place Safety Plans (WPSP) that may be required for the completion of the Contract or incidental work. If such plans are required, the general contractor is responsible for retaining a registered design professional as defined in Title 15, Chapter 1 of the RCNY to prepare and submit the required plans.

The asbestos abatement contractor is responsible for the submission of all required documents to the NYCDEP to acquire the appropriate Asbestos Project Conditional Closeout (ACP-20) and/or Asbestos Project Completion Forms (ACP-21) on a timely basis for the completion of the incidental work encountered under this contract.

The asbestos abatement contractor will be required to attend an on-site job meeting with the Construction Project Manager prior to the start of work to examine conditions and plan the sequence of operations, etc.

The asbestos abatement contractor shall have a NYSDOL/NYCDEP Asbestos Supervisor onsite to oversee the work and conduct a final visual inspection as required by both Title 15, Chapter 1 of the RCNY and NYSDOL Industrial Code Rule 56.

- I. All work shall be done during regular working hours unless the asbestos abatement contractor requests authorization to work in other than regular working hours and such authorization is granted by the Commissioner. (Regular work hours are those hours during which any given facility, in which work is to be done, is customarily open and functioning, normally between the hours of 8:00 A.M. and 4:00 P.M. Monday - Friday.) If such work schedule is authorized by the Commissioner, the work shall be done at no additional cost to the City.
- J. The Commissioner may order that work be done in other than regular working hours as herein by defined and this order may require the asbestos abatement



contractor to pay premium or overtime wages to complete the work. If the Commissioner orders work in other than regular working hours, the asbestos abatement contractor shall multiply the unit price for that portion of the work requiring premium wages by 1.50 when computing payment in accordance with Paragraph 1.09. All requests for premium payment must be supported by certified payroll sheets and field sheets approved by the Construction Project Manager.

1.02 QUALIFICATIONS OF ASBESTOS ABATEMENT CONTRACTOR

- A. Requirements: The asbestos abatement contractor must be approved through the Department's Request for Subcontractor Approval, administered by the Agency Chief Contracting Office (ACCO), Vendor Integrity Unit. The asbestos abatement contractor must demonstrate compliance with the special experience requirements set forth in subparagraphs (1) through (6) below. Such documentation shall include without limitation, all required licenses, certificates, and documentation.
1. The asbestos abatement contractor must, whether an individual, corporation, partnership, joint venture or other legal entity, demonstrate for the three year period prior to the work that it has been licensed by the New York State Department of Labor (NYSDOL), as an "Asbestos Abatement Contractor". The asbestos abatement contractor shall submit copies of the asbestos abatement contractors NYSDOL License for the past three years
 2. The asbestos abatement contractor must, for the three-year period prior to the work, have been in the business of providing asbestos abatement services as a routine part of its daily operations.
 3. The asbestos abatement contractor proposing to do asbestos abatement work must be thoroughly experienced in such work and must submit a list of five (5) asbestos abatement projects of similar size and complexity. The aggregate cost of these projects must be at least \$1,000,000 in each of the three years.
 4. For each project submitted to meet the experience requirements set forth above, the asbestos abatement contractor must submit the following information for the project; name and location of the project; name title and telephone number and email address of the owner or the owner's representative who is familiar with the asbestos abatement contractor's work; brief description of the scope of work completed as a prime or sub-asbestos abatement contractor; amount of contract or subcontract and the date of completion.
 5. The asbestos abatement contractor must demonstrate that it has the financial resources, certified supervisory personnel and equipment



necessary to carry out the work and to comply with the required performance schedule, taking into consideration other business commitments. The asbestos abatement contractor must submit such documentation as may be required by the Department of Design and Construction to demonstrate that it has the requisite capacity to perform the required services of this contract. The Department may also conduct an inspection of the asbestos abatement contractor's facility to verify if the contractor has equipment and staffing to perform the work.

6. The asbestos abatement contractor must submit a copy of their Corporate Health and Safety Plan for review and acceptance. A Job Hazard Analysis (JHA) for the specific work conducted must be included.
- B. Throughout the specifications, reference is made to codes and standards which establish qualities and types of workmanship and materials, and which establish methods for testing and reporting on the pertinent characteristics thereof. Provide materials or workmanship that meet or exceed the specifically named codes or standards where required by these specifications.
- C. Site Investigation: Asbestos abatement contractor shall inspect all the specifications and related drawings, and will investigate and confirm the site conditions affecting the work, including, but not limited to (1) through (5) below. The asbestos abatement contractor will attend a walkthrough site inspection with the department's Project Manager and the Third-Party Air Monitor prior to the work. Such walkthrough will be scheduled at the Department's convenience.
 1. Physical considerations and conditions of both the material and structure. These considerations include any obstacles or obstructions encountered in accessing or removing the material.
 2. Handling, storage, transportation and disposal of the material.
 3. Availability of qualified and skilled labor.
 4. Availability of utilities.
 5. Exact quantities of all materials to be disturbed and/or removed

1.03 ASBESTOS ABATEMENT CONTRACTOR RESPONSIBILITIES

The asbestos abatement contractor will visit the subject location within one (1) working day of notification to ascertain actual work required. If the project is identified as being "urgent", then work shall commence no later than 48 hours from the time of notification. In this event, the asbestos abatement contractor shall immediately notify when applicable EPA NESHAPS Coordinator, NYSDOL Asbestos Control Bureau and NYCDEP



Asbestos Control Program of start of the work and file the necessary Asbestos Notifications and any applicable Variance Applications with the regulatory agencies cited above.

In the event that the project is not classified as "urgent" the asbestos abatement contractor shall notify the EPA NESHAPS Coordinator, NYSDOL and NYCDEP by submitting the requisite asbestos project notification forms, postmarked 10 days before activity begins if 260 linear feet or more and/or 160 square feet or more of asbestos containing material will be disturbed.

The following information must be included in the notification:

- A. Name and address of building City or operator;
- B. Project description:
 - 1. Size - square feet, number of linear feet, etc;
 - 2. Age - date of construction and renovations (if known);
 - 3. Use - i.e., office, school, industrial, etc.
 - 4. Scope - repair, demolition, cleaning, etc.
- C. Amount of asbestos involved in work and an explanation of techniques used to determine the amount;
- D. Building location/address, including Block and Lot numbers;
- E. Work schedule including the starting and completion dates;
- F. Abatement methods to be employed;
- G. Procedures for removal of asbestos-containing material;
- H. Name, title and authority of governmental representative sponsoring project.

1.04 WORK INCLUDED IN UNIT PRICE

The asbestos abatement contractor will be paid a basic unit price of **\$25.00** per square feet for the removal and disposal of asbestos containing material and replacement of the same with non-asbestos containing materials.

Unit price shall include all costs necessary to do the work of this Contract, including but not limited to: labor, materials, equipment, utilities, disposal, insurance, overhead and profit.



1.05 AIR MONITORING – ASBESTOS ABATEMENT CONTRACTOR

- A. “Air Sampling” shall mean the process of measuring the fiber content of a known volume of air collected during a specific period of time. The procedure utilized for asbestos follows the NIOSH Standard Analytical Method 7400 or the provisional transmission electron microscopy methods developed by the USEPA and/or National Institute of Standard and Technology which are utilized for lower detectability and specific fiber identification.
- B. Air monitoring of asbestos abatement contractor’s personnel will be performed in conformance with OSHA requirements, (All costs associated with this work are deemed included in the unit price.).
- C. Qualifications of Testing Laboratory:

The industrial hygiene laboratory shall be a current proficient participant in the American Industrial Hygiene Association (AIHA) PAT Program. The laboratory identification number shall be submitted and approved by the City. The laboratory shall be accredited by the AIHA and New York State Department of Health Environmental Laboratory Approval Program (ELAP).

Note: Work area air testing and analysis before, during and upon completion of work (clearance testing) will be performed by a Third Party Air Monitor under separate Contract with the City.

1.06 THIRD PARTY MONITORING AND LABORATORY

- A. The NYCDDC, at its own expense, will employ the services of an independent Third Party Air Monitoring Firm and Laboratory. The Third Party Air Monitor will perform air sampling activities and project monitoring at the Work Site.
- B. The Laboratory will perform analysis of air samples utilizing Phase Contrast Microscopy (PCM) and/or Transmission Electron Microscopy (TEM).
- C. The Third Party Air Monitoring Firm and the designated Project Monitor shall have access to all areas of the asbestos removal project at all times and shall continuously inspect and monitor the performance of the asbestos abatement contractor to verify that said performance complies with this Specification. The Third-Party Air Monitor shall be on site throughout the entire abatement operation.
- D. The NYCDDC will be responsible for costs incurred with the Third Party Air Monitoring Firm and laboratory work. Any subsequent additional testing required due to limits exceeded during initial testing shall be paid for by the asbestos abatement contractor.



1.07 PAYMENT REQUEST DOCUMENTATION

- B. The following information shall be included for each payment request:
1. Description of work performed.
 2. Linear footage and pipe sizes involved.
 3. Square footage for boiler & breaching insulation removed.
 4. Square footage of non pipe and boiler areas removed, patched, enclosed, sealed, or painted.
 5. Square footage of encapsulation, sealing, patching, and painting involved.
 6. Total cost associated with compliance with the assigned task.
 7. Architectural, Electrical, HVAC, Plumbing, etc. work incidental to the Asbestos Abatement Work.
 8. A certified copy (in form 4312-39) to the Comptroller or Financial Officer of the New York City to the effect that the financial statement is true.
 9. A signed copy (in form 6506q-6) of certificate of compliance with non-discriminatory provisions of the Contract.
 10. Attach a copy of valid workmen compensation insurance.
 11. Valid asbestos insurance per occurrence.
 12. General liability insurance when required.
- C. Each payment request shall include a grand total for all work completed that billing period, the landfill waste manifests and a copy of waste transporter permit. The Department of Design and Construction will inspect the work performed, review the cost and approve or disapprove requests for payment.
- D. EXPOSURE LOG: With this final payment, the asbestos abatement contractor shall submit a listing of the names and social security numbers of all employees actively engaged in the abatement work of this Contract. This list shall include a summary showing each part of the abatement work in which the employee was engaged and the dates thereof.

1.08 QUANTITY CALCULATIONS

In order to determine the square footage involved for the various pipe sizes of pipe insulation that might be encountered, the following table is to be used.



PIPE INSULATION SIZE O.D.	PIPE SIZE O.D.	SQUARE FOOTAGE PER LINEAR FOOT
2-1/2"	1/2"	0.65
2-3/4"	3/4"	0.72
3"	1"	0.79
3-1/4"	1-1/4"	0.85
3-1/2"	1-1/2"	0.92
4"	2"	1.05
4-1/2"	2-1/2"	1.18
5"	3"	1.31
6"	3-1/4"	1.57
7"	3-1/2"	1.83
8"	4"	2.09
9"	5"	2.36
10"	6"	2.62
12"	8"	3.14
14"	10"	3.67
16"	12"	4.19
18"	14"	4.71

1.09 METHOD OF PAYMENT

Payment shall be made in accordance with Items A through R below. Payment shall be calculated based on the actual quantity of the item performed by the asbestos abatement contractor, times the unit price specified below. Credits may apply to certain times, as specified below.

- A. **REMOVAL, DISPOSAL AND REPLACEMENT OF ASBESTOS CONTAINING PIPE INSULATION:** Actual linear footage, multiplied by the square footage factor listed for the respective pipe size in Section 1.08, multiplied by the unit price in Section 1.04.

EXAMPLE: 100 lin.ft. of 1/2" pipe and 100 lin.ft. of 6" pipe, including elbows, tees. Flanges, etc.

$$100 \times 0.65 = 65 \text{ sq.ft.} \quad 65 \times \text{unit price} = \text{Payment}$$

$$100 \times 2.62 = 262 \text{ sq.ft.} \quad 262 \times \text{unit price} = \text{Payment}$$

- B. **REMOVAL, DISPOSAL AND REPLACEMENT OF BOILER INSULATION:** (all types including Silicate Block and including the removal/replacement of metal jacketing) Payment shall be made at 1.5 times the unit price per square foot.

EXAMPLE: Item B. removal and replacement of 1000 S.F. of boiler insulation (incl. Silicate block)



1000 S.F. X (1.5) X the Unit Price = Payment

- C. **REMOVAL, DISPOSAL AND REPLACEMENT OF TANK INSULATION:** (all types including removal/replacement of metal jacketing) Payment shall be made at 1.5 times the unit price per square foot.
- D. **REMOVAL, DISPOSAL AND REPLACEMENT OF BOILER UPTAKE, & BREACHING INSULATION:** (all types including stiffening angles and wire lath) Payment shall be made at 2.0 times the unit price per square foot.
- E. **REMOVAL, DISPOSAL AND REPLACEMENT OF DUCT INSULATION:** Payment shall be made at 1.0 times the unit price per square foot.
- F. **REMOVAL, DISPOSAL AND REPLACEMENT OF SOFT ASBESTOS CONTAINING MATERIAL:** (Including sprayed-on fire proofing and sound proofing) Payment shall be made at 1.0 times the unit price per square foot of surface area. Area of irregular surfaces must be calculated and confirmed with DDC representative.
- G. **ACOUSTIC PLASTER REPAIR AND/OR ENCAPSULATION:** Payment shall be made at 0.5 times the unit price per square foot.
- H. **PATCHING OR REPAIR** of items listed in A through F will be paid at 0.33 times the unit price per square foot.
- I. **REMOVAL, DISPOSAL AND REPLACEMENT OF WATERPROOFING ASBESTOS CONTAINING MATERIAL:** (including friable and non-friable waterproofing material from interior and exterior walls, floors, foundations, penetrations, louvers, vents and openings other than windows, doors and skylights) Payment shall be made at 0.5 times the unit price per square foot.
- J. **REMOVAL, DISPOSAL AND REPLACEMENT OF ASBESTOS CONTAINING ELECTRICAL WIRING INSULATION:** (including friable and non-friable wiring insulation) Payment shall be made at 0.33 times the unit price per square foot.
- K. **PAINTING:** Payment shall be made at 0.05 times the unit price per square foot.
- L. **REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING PLASTER:** from ceilings and walls, including any wire lath and disposal as asbestos containing waste. Payment shall be made at 0.80 times the unit price per square foot.
- M. **REMOVAL AND DISPOSAL OF ASBESTOS-CONTAINING FLOOR TILES, CEILING TILES, TRANSITE PANELS:** (including any adhesive, glue, mastic and/or underlayment) and disposal as asbestos containing waste. Payment shall be made at 0.40 times the unit price per square foot. If multiple



layers are discovered, each additional layer shall be paid at 0.20 times the unit price per square foot.

- N. **ADDITIONAL CLEAN UP/HOUSEKEEPING OF WORK AREA:** (excluding pre-cleaning of work area required by regulations) HEPA vacuuming and wet cleaning of asbestos contaminated surface. Payment shall be made at 0.20 times the unit price per square foot. When GLOVE BAG is employed to remove ACM, cost of HEPA vacuuming and wet cleaning of floor area up to 3 feet on each side of glove-bag shall be included in unit price and no extra payment will be made.
- O. **REMOVAL, DISPOSAL OF ASBESTOS-CONTAINING ROOFING MATERIAL:** including mastic, flashing and sealant compound and provide temporary asbestos-free roof covering consisting of one layer of rolled roofing paper sealed with asphaltic roofing compound. Payment shall be made at 0.8 times the unit price per square foot. Credit at a rate of 0.33 times the unit price will be taken for each square foot of temporary roof covering which the asbestos abatement contractor is directed not to install.
- P. **PICK-UP AND DISPOSAL OF GROSS DEBRIS:** (excluding any waste generated from abatement under Item A-R) at a rate of \$150 per cubic yard for asbestos contaminated waste and \$75 per cubic yard for non-asbestos contaminated waste. This cost includes all labor and material cost associated with work.
- Q. **REMOVAL OF ASBESTOS-CONTAINING BRICK, BLOCK, MORTAR, CEMENT OR CONCRETE:** along with all surfacing materials including wire lath and/or other supporting structures and disposal as ACM waste. Payment shall be made at a rate of \$25.00 per cubic foot of material removed.
- R. **REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING WINDOW/DOOR CAULKING:** including friable and non-friable caulking, weather-stripping, glazing, sealants or other waterproofing materials applied to windows, doors, skylights, etc. Payment shall be made at the rate of \$400.00 per opening regardless of size or configuration. This cost includes labor, consumable materials, set-up/breakdown, removal and disposal, as required.

Note 1: CREDIT: For items listed in A through F, a credit at a rate of 0.33 times the unit price, times the respective multiplier (for each item) will be taken for each square foot of insulation which the asbestos abatement contractor is not directed to reapply.

Note 2: MINIMUM PAYMENT: The minimum payment per call at any individual job sites or various job sites during the same day will be eight hundred dollars (\$800.00).

Note 3: All payments shall be made as described in paragraph 1.09 herein.

Note 4: WORKING HIGHER THAN 12 FEET ABOVE FLOOR LEVEL OR WORK REQUIRING COMPLEX SCAFFOLDING OR CONSTRUCTION WORK



PLATFORMS: Provisions are made in this Contract to compensate the asbestos abatement contractor for work performed in locations that are difficult to access due to work at elevations that are significantly higher than the normal work level. The unit price for these items will be paid at 1.20 times the unit price described in Paragraphs 1.09, A through R for those portions of the work that are more than twelve (12) feet above the grade for that would be judged as the normal working level.

1.10 GUARANTEE

- A. Work performed in compliance with each task shall be guaranteed for a period of one year from the date the completed work is accepted by the Department of Design and Construction.
- B. The Commissioner of The Department of Design and Construction will notify the asbestos abatement contractor in writing regarding defects in work under the guarantee.

1.11 OCCUPANCY OF SITE NOT EXCLUSIVE

Attention is specifically drawn to the fact that contractors, performing the work of other Contracts, may be brought upon any of the work sites of this Contract. Therefore, the asbestos abatement contractor shall not have exclusive rights to any site of his work and shall fully cooperate and coordinate his work with the work of other contractors who may be brought upon any site of the work of this Contract. This paragraph applies to those areas outside the regulated Work Area as defined by Title 15, Chapter I of RCNY.

1.12 SUBMITTALS

- A. Pre-Construction Submittals:
 - 1. Attend a pre-construction meeting scheduled by the City of New York Department of Design and Construction. This meeting shall also be attended by a designated representative of the City of New York third party air monitoring firm, facility manager and the Construction Project Manager. At this meeting, the asbestos abatement contractor shall present three copies of the following items:
 - a. asbestos abatement contractor's scope of work, work plan and schedule.
 - b. Asbestos project notifications, approved variances and plans to Government Agencies.
 - c. Copies of Permits, clearance and licenses if required.
 - d. Schedules: the asbestos abatement contractor shall provide to the Construction Project Manager a copy of the following schedules for



approval. Once approved, schedules shall be maintained and updated as received. asbestos abatement contractor shall post a copy of all schedules at the site:

- (1) A construction schedule stating critical dates of the project including, but not limited to, mobilization, Work Area preparation, demolition, gross removal, fine cleaning, encapsulation, inspections, clearance monitoring, and phase of refinishing and final inspections. The schedule shall be updated biweekly, at a minimum.
 - (2) A schedule of staffing stating number of workers per shift per activity, name and number of supervisor(s) per shift, shifts per day, and total days to be worked.
 - (3) Submit all changes in schedule or staffing to the Construction Project Manager prior to implementation.
- e. Written description of emergency procedures to be followed in case of injury or fire. This section must include evacuation procedures, source of medical assistance (name and telephone number to nearest hospital) and procedures to be used for access by medical personnel (examples: first aid squad and physician). NOTE: Necessary Emergency Procedures Shall Take Priority Over All Other Requirements of These Specifications.
- f. Safety Data Sheets (SDS) for encapsulants, sealants, firestopping foam, cleaners/disinfectants, spray adhesive and any and all potentially hazardous materials that may be employed on the project. No work involving the aforementioned will be allowed to proceed until SDS are reviewed.
- g. Worker Training and Medical Surveillance: The asbestos abatement contractor shall submit a list of the persons who will be employed by him /her to perform the removal work. Present evidence that workers have received proper training required by the regulations and the medical examinations required by OSHA 29 CFR 1926.1101.
- h. Logs: Specimen copies of daily progress log, visitor's log, and disposal log.
- (1) The asbestos abatement contractor shall provide a permanently bound log book of minimum 8-1/2" x 11" size at the entrance to the Worker and Waste Decontamination enclosure system as hereinafter specified. Log book shall



contain on title page the project name, name, address and phone number of the asbestos abatement contractor; name, address and phone number of asbestos abatement contractor and City's third party air monitoring firm; emergency numbers including, but not limited to local Fire/Rescue Department. Log book shall contain a list of personnel approved for entry into the Work Area.

- (2) All entries into the log shall be made in non-washable, permanent ink and such pen shall be strung to or otherwise attached to the log to prevent removal from the log-in area. Under no circumstances shall pencil entries be permitted. Any significant events occurring during the abatement project shall be entered into the log. Upon completion of the job, the asbestos abatement contractor shall submit the logbook containing a day-to-day record of personnel log entries countersigned by the Construction Project Manager every day.

- i. Worker's Acknowledgments: Submit statements signed by each employee that the employee has received training in the proper handling of ACM, understands the health implications and risks involved; and understands the use and limitations of the respiratory equipment to be used.

B. During Construction Submittals:

1. Security and safety logs showing names of person entering workspace, date and time of entry and exit, record of any accident, emergency evacuation, and any other safety and/or health incident.
2. Progress logs showing the number of workers, supervisors, hours of work and tasks completed shall be submitted daily to the Construction Project Manager.
3. Floor plans indicating asbestos abatement contractor's current work progress shall be submitted for review by the Construction Project Manager.
4. All asbestos abatement contractors' air monitoring and inspection results.

C. Project Closeout Submittals:

Upon completion of the project and as a condition of acceptance, the asbestos abatement contractor shall present two copies of the following items, bound and indexed:



1. Lien Waivers from asbestos abatement contractor, sub-asbestos abatement contractors and Suppliers,
2. Daily OSHA air monitoring results,
3. All Waste Manifests (Asbestos and Construction Debris), seals and disposal logs,
4. Field Sign-In/Sign-Out Logs for every shift,
5. Copies of all Building Department Forms and Permits,
6. A Letter of Compliance stating that all the work on this project was performed in accordance with the Specifications and all applicable Federal, State and Local regulations,
7. All Warranties as stated in the Specifications,
 - a. Fully executed disposal certificates and transportation manifest.
8. Project Record: The asbestos abatement contractor shall maintain a project record for all small and large asbestos projects. During the project, the project record shall be kept on site at all times. Upon completion of the project, the project record shall be maintained by the building owner. The project record shall be submitted to DDC as part of the close out documents. The project record shall consist of:
 - a. Copies of licenses of all asbestos abatement contractors involved in the project;
 - b. Copies of NYCDEP and NYSDOL supervisor and handler certificates for all workers engaged in the project;
 - c. Copies of all project notifications and reports filed with NYCDEP, NYSDOL and USEPA for the project, with any amendments or variances;
 - d. Copies of all asbestos abatement permits, including associated approved plans and work place safety plan;
 - e. A copy of the air sampling log and all air sampling results;
 - f. A copy of the abatement asbestos abatement contractor's daily log book;



- g. Copies of all asbestos waste manifests;
- h. A copy of all Project Monitor's Reports (ACP-15).
- i. A copy of each ATR-1 Form completed for the asbestos project (if required).
- j. A copy of each Asbestos Project Conditional Closeout Report (ACP-20) if required.
- k. A copy of the Asbestos Project Completion Form (ACP-21).

1.13 PROTECTION OF FURNITURE AND EQUIPMENT

Cover all furniture and equipment that cannot be removed from Work Areas. Movable furniture and equipment will be removed from Work Areas by the asbestos abatement contractor prior to start of work. At the conclusion of the work (after final air testing), the asbestos abatement contractor will remove all plastic covering on walls, floors, furniture, equipment and reinstall furniture and equipment. He shall remove and store all sheaths, curtains and drapes, and reinstall same following final clean up.

1.14 UTILITIES

A. General:

All temporary facilities shall be subject to the approval of the Commissioner. Prior to starting work at any site, locations and/or sketches (if required) of temporary facilities must be submitted to the Construction Project Manager for the required approval.

B. Water:

The Department of Design and Construction will furnish all water needed for construction, at no cost to the asbestos abatement contractor in buildings under their jurisdiction. However, it is the responsibility of the asbestos abatement contractor to ensure that hot water is provided for showering in the decontamination unit. The asbestos abatement contractor shall furnish, install and maintain any needed equipment to meet these requirements at his own expense.

C. Electricity:

The Department of Design and Construction will furnish all electricity needed for construction, at no cost to the asbestos abatement contractor in a building, under their jurisdiction. The asbestos abatement contractor is responsible for routing the electric power to the abatement Work Area.



All temporary lighting and temporary electrical service for Work Area shall be in weatherproof enclosures and be ground fault protected.

- D. In leased spaces, arrangements for water supplies and electricity must be made with the landlord. However, all such arrangements must be made through and are subject to approval of the Department of Design and Construction. Utilities will be provided at no cost to the asbestos abatement contractor. However, it is the asbestos abatement contractor's (or the general contractor's) responsibility to furnish and install a suitable distribution system to the Work Area. This system will be provided at no cost to the City.

1.15 FEES

The asbestos abatement contractor shall be responsible for any and all fees or charges imposed by Local, State or Federal Law, Rule and Regulation applicable to the work specified herein, including fees or charges which may be imposed subsequent to the date of the Bid opening.

END OF SECTION

**SECTION 028213
NOVEMBER 2017 VERSION****ASBESTOS ABATEMENT****PART 1 – GENERAL****1.01 DESCRIPTION**

- A. The Contract Documents are as defined in the “Agreement”. The General Conditions shall apply to all Work of this Section.
- B. Work specified herein shall be the removal and disposal of Asbestos-Containing Materials (ACM) and asbestos-contaminated materials from designated areas of The Heckscher Building, located at 1230 5th Avenue, New York, New York 10029.
- C. The following documents were reviewed and utilized to generate this abatement design specification which serves to locate and quantify the amount of ACM, and asbestos contaminated material, to be abated in support of this project.
 - 1. A set of 100% CD Submission Drawings labeled “The Heckscher Building, Partial Exterior Envelope Upgrade”, dated 04/29/19, prepared by Thornton Tomasetti, Inc.;
 - 2. Asbestos Survey Report performed by LBA dated 01/07/2020.
- D. The phasing and scheduling of work for this project shall be coordinated with and approved by the Construction Project Manager and Facility Manager. The Construction Project Manager and Facility Manager will make the final determination on all issues under this Contract covered by this Specification.

1.02 SCOPE OF WORK

- A. The asbestos abatement contractor is to provide all labor, materials, equipment, services, testing, appurtenances, permits and agreements necessary to perform the work required for the abatement of ACM as required by these contract documents. All work shall be performed in accordance with this Specification, EPA regulations, OSHA regulations, New York City Local Law 70, Title 15, Chapter 1 RCNY, New York State Industrial Code 56, NIOSH recommendations, and any other applicable federal, state or local government regulations. Whenever there is a conflict or overlap of the above references, the most stringent provisions are applicable.
- B. The intent of this Specification section is to ensure that the asbestos abatement contractor is responsible for the following:
 - 1. Abatement of all ACM.



2. Cleaning and decontamination of the entire affected area.
 3. Demolition that may be required to access ACM in each area, Asbestos abatement contractor shall dispose of all debris associated with demolition activities as ACM waste.
 4. Removal and disposal of all ACM and Assumed ACM found within these areas such as cage support caulking (gray), parapet paint-coating (black), parapet insulation material (black), exterior window frame caulking (gray) and exterior cornice caulking.
 5. Provide all scaffolding, platform installation, equipment, tools, transportation and any other equipment required and/or necessary to complete all work described in the Contract Documents.
 6. The asbestos abatement contractor shall be responsible for and shall include any and all fees or changes imposed by Local, State or Federal Law, Rule or Regulation applicable to the work specified herein, including fees or charges which may be imposed subsequent to the work.
 7. Prior to destructive demolition activities, the DDC may elect to collect bulk samples of assumed asbestos-containing materials and analyze the bulk samples for asbestos content.
- C. The asbestos abatement contractor shall perform the following work as described below and indicated on the drawings. The drawings are only a diagrammatic representation of the Work Areas and do not constitute the actual quantities of material. Asbestos abatement contractor is responsible for the confirmation of the actual total quantities of the Work.

1. Drawing H002.00: Roof Plan

- a. Remove and dispose of asbestos-containing cage support caulking (gray), parapet paint-coating (black), parapet insulation material (black) within **Work Area 1**. Asbestos-containing cage support caulking (gray), parapet paint-coating (black), parapet insulation material (black) shall be removed utilizing NYCDEP Title 15, Chapter 1 § 1-109 Abatement from Vertical Exterior Surfaces.

Work Area	Removal Procedure	Approximate Square Feet (Sq. Ft.)	Approximate Linear Feet (Ln. Ft.)
1	NYC DEP Section § 1-109 Abatement from Vertical Exterior Surfaces	4 Sq. Ft. (50 Ln. Ft.) of Cage Support Caulking (Gray)	—
		1,030 Sq. Ft. of Parapet Paint-Coating (Black) and Parapet Insulation Material (Black)	—



2. Drawing H003.00: West Elevation

- a. Remove and dispose of asbestos-containing exterior window frame caulking (gray) and assumed asbestos-containing exterior cornice caulking within **Work Area 2**. Asbestos-containing exterior window frame caulking (gray) and assumed asbestos-containing exterior cornice caulking shall be removed utilizing NYCDEP Title 15, Chapter 1 § 1-109 Abatement from Vertical Exterior Surfaces.

Work Area	Removal Procedure	Approximate Square Feet (Sq. Ft.)	Approximate Linear Feet (Ln. Ft.)
2	NYC DEP Section § 1-109 Abatement from Vertical Exterior Surfaces	181 Sq. Ft. (2,169 Ln. Ft.) Exterior Window Frame Caulking (Gray) within 88 Openings	—
		21 Sq. Ft. (255 Ln. Ft.) of Exterior Cornice Caulking (Assumed ACM)	—

3. Drawing H003.00: West Court Elevations

- a. Remove and dispose of asbestos-containing exterior window frame caulking (gray) and assumed asbestos-containing exterior cornice caulking within **Work Area 3**. Asbestos-containing exterior window frame caulking (gray) and assumed asbestos-containing exterior cornice caulking shall be removed utilizing NYCDEP Title 15, Chapter 1 § 1-109 Abatement from Vertical Exterior Surfaces.
- b. Remove and dispose of asbestos-containing exterior window frame caulking (gray) and assumed asbestos-containing exterior cornice caulking within **Work Area 4**. Asbestos-containing exterior window frame caulking (gray) and assumed asbestos-containing exterior cornice caulking shall be removed utilizing NYCDEP Title 15, Chapter 1 § 1-109 Abatement from Vertical Exterior Surfaces.



Work Area	Removal Procedure	Approximate Square Feet (Sq. Ft.)	Approximate Linear Feet (Ln. Ft.)
3	NYC DEP Section § 1-109 Abatement from Vertical Exterior Surfaces	63 Sq. Ft. (750 Ln. Ft.) Exterior Window Frame Caulking (Gray) within 29 Openings	—
		7 Sq. Ft. (85 Ln. Ft.) of Exterior Cornice Caulking (Assumed ACM)	—
4		53 Sq. Ft. (630 Ln. Ft.) Exterior Window Frame Caulking (Gray) within 24 Openings	—
		7 Sq. Ft. (85 Ln. Ft.) of Exterior Cornice Caulking (Assumed ACM)	—

- D. The facility is under the jurisdiction of the NYC Department of Cultural Affairs. The asbestos abatement contractor shall perform the work of this contract in a manner that will be least disruptive to the normal use of the building.
- E. Asbestos abatement contractor's attention is directed to the fact that patents cover certain methods of asbestos abatement indicated in the specifications. To date, patents have been issued with regard to negative pressure enclosures or negative or reduced pressure and glove-bag.
- F. Asbestos abatement contractor shall be solely responsible for and shall hold the City of New York Department of Design and Construction and the City harmless from, any and all damages, losses and expenses resulting from any infringement by Asbestos abatement contractor of any patent, including but not limited to the patents described above, used by Asbestos abatement contractor during performance of this agreement.
- G. Prior to starting, the asbestos abatement contractor must notify the Commissioner of the City of New York Department of Design and Construction if he anticipates any difficulty in performing the work as directed and required by these Specifications. Asbestos abatement contractor shall be required to attend an on-site job meeting with the Construction Project Manager prior to start of work to examine conditions of the site for removal and plan the sequence for removal operations.
- H. The asbestos abatement contractor shall retain a certified Project Designer for the preparation of an Asbestos Variance Application (ACP-9), if required.



- I. The asbestos abatement contractor shall be responsible for preparing and submitting all filings, notifications, amendments and variances, etc. required by all City, State and Federal regulatory agencies having jurisdiction, at no additional cost to the NYC DDC.
- J. The general contractor shall retain a Registered Design Professional (person licensed and registered to practice the professions of architecture or engineering under the Education Law of the State of New York) to prepare a Work Place Safety Plan (WPSP), if required.
- K. The general contractor shall retain a Registered Design Professional (person licensed and registered to practice the professions of architecture or engineering under the Education Law of the State of New York) to perform final inspections required pursuant to Title 28 of the Administrative Code, including but not limited to special inspections required under Chapter 17 of the Building Code. Such special inspections and A-TR1 forms shall be completed by the Registered Design professional.
- L. For coordination with other Asbestos abatement contractors, see the General Conditions governing all Contracts.
- M. Related Asbestos Removal Work Under Other Contracts:
 - 1. Each asbestos abatement contractor shall be responsible for the removal of incidental asbestos not identified in this section and found prior to or during the Work.
 - 2. Incidental asbestos is defined as ACM that is discovered during the course of their work that must be abated to enable them to perform the work of their Contract.
- N. Work Hours:
 - 1. The asbestos abatement contractor shall establish his work schedule in a way that avoids interference or conflict with the normal functioning of the facility. Work in the evenings shall be done at no additional cost to the City.
 - 2. All work shall be done during regular working hours unless the Asbestos abatement contractor requests authorization to work other than regular working hours and such authorization is granted by the Commissioner (Regular working hours are those during which any given facility in which work is to be done is customarily open and functioning). If such work schedule is authorized by the Commissioner the work shall be done at no additional cost to the City.



3. The order of phases and start dates associated with each will be determined by the Construction Project Manager.
 4. Asbestos abatement contractor shall be required to schedule waste transfer during evening hours, when activity within the facility is at a minimum. Evening hours are defined as 6:00 p.m. to 6:00 a.m. Waste transfer must be approved by the Construction Project Manager and Facility Manager.
- O. The following conditions shall apply to all temporary shutdowns of existing services:
1. All temporary lighting and temporary electrical services for use in the Work Area shall be in weather proof enclosures and be ground fault protected and:
 - a. Shall be performed at no additional charge to the City.
 2. Shall be performed at times not interfering with the other activities in the building.
 3. Shall be performed only with written consent from the Commissioner and the Facility Manager.
 4. Shall be made through written request to the Commissioner at least 10 days in advance with complete written description of the work to be performed.
- P. Stages of Asbestos Removal Work:
1. The asbestos abatement contractor will be required to perform the work and it is the intent of this Specification to remove all asbestos containing and asbestos contaminated materials from the Work Area. The asbestos abatement contractor is responsible for verifying all quantities of materials listed.
- Q. Certain equipment in the Work Area may need to remain operational during removal. Therefore, the removal of ACM from this equipment shall be performed as the last removal activities within the Work Area. The Asbestos abatement contractor shall coordinate the scheduling for the removal of ACM on functioning equipment with the Construction Project Manager.

1.03 QUALIFICATIONS OF ASBESTOS ABATEMENT CONTRACTOR

- A. Requirements: The asbestos abatement contractor must be approved through the Department's Request for Subcontractor Approval, administered by the Agency Chief Contracting Office (ACCO), Vendor Integrity Unit. The asbestos abatement contractor must demonstrate compliance with the special experience requirements



set forth in subparagraphs (1) through (6) below. Such documentation shall include without limitation, all required licenses, certificates, and documentation.

1. The asbestos abatement contractor must, whether an individual, corporation, partnership, joint venture or other legal entity, demonstrate for the three year period prior to the work that it has been licensed by the New York State Department of Labor (NYSDOL), as an "Asbestos Abatement Contractor". The asbestos abatement contractor shall submit copies of the asbestos abatement contractors NYSDOL License for the past three years
2. The asbestos abatement contractor must, for the three-year period prior to the work, have been in the business of providing asbestos abatement services as a routine part of its daily operations.
3. The asbestos abatement contractor proposing to do asbestos abatement work must be thoroughly experienced in such work and must submit a list of five (5) asbestos abatement projects of similar size and complexity. The aggregate cost of these projects must be at least \$1,000,000 in each of the three years.
4. For each project submitted to meet the experience requirements set forth above, the asbestos abatement contractor must submit the following information for the project; name and location of the project; name title and telephone number and email address of the owner or the owner's representative who is familiar with the asbestos abatement contractor's work; brief description of the scope of work completed as a prime or sub-asbestos abatement contractor; amount of contract or subcontract and the date of completion.
5. The asbestos abatement contractor must demonstrate that it has the financial resources, certified supervisory personnel and equipment necessary to carry out the work and to comply with the required performance schedule, taking into consideration other business commitments. The asbestos abatement contractor must submit such documentation as may be required by the Department of Design and Construction to demonstrate that it has the requisite capacity to perform the required services of this contract. The Department may also conduct an inspection of the asbestos abatement contractor's facility to verify if the contractor has equipment and staffing to perform the work.
6. The asbestos abatement contractor must submit a copy of their Corporate Health and Safety Plan for review and acceptance. A Job Hazard Analysis (JHA) for the specific work conducted must be included.

- B. Throughout the specifications, reference is made to codes and standards which establish qualities and types of workmanship and materials, and which establish



methods for testing and reporting on the pertinent characteristics thereof. Provide materials or workmanship that meet or exceed the specifically named codes or standards where required by these specifications.

- C. Site Investigation: Asbestos abatement contractor shall inspect all the specifications and related drawings, and will investigate and confirm the site conditions affecting the work, including, but not limited to (1) through (5) below. The asbestos abatement contractor will attend a walkthrough site inspection with the department's Project Manager and the Third-Party Air Monitor prior to the work. Such walkthrough will be scheduled at the Department's convenience.
1. Physical considerations and conditions of both the material and structure. These considerations include any obstacles or obstructions encountered in accessing or removing the material.
 2. Handling, storage, transportation and disposal of the material.
 3. Availability of qualified and skilled labor.
 4. Availability of utilities.
 5. Exact quantities of all materials to be disturbed and/or removed.

1.04 WORK BY OTHERS

The City reserves the right during the term of this Contract to have work performed on asbestos abatement projects by other asbestos abatement contractors as the situation warrants.

1.05 DEFINITIONS

- A. General Explanation: Certain terms used in this Specification Section are defined below. Definitions and explanations of this Specification Section are not necessarily complete or exclusive, but are general for the Work to the extent they are not stated more explicitly in another element of the Contract Documents.
- B. Definitions in General Use:
1. Approve: Where used in conjunction with Engineer's response to submittals, requests, applications, inquiries, reports and claims by Asbestos abatement contractor, the meaning of term "approved" will be held to limitations of Engineer's responsibilities and duties as specified in Contract Documents. In no case will "approval" by Engineer be interpreted as a release of Asbestos abatement contractor from responsibilities to fulfill requirements of Contract Documents.



2. Directed, Requested, etc.: Where not otherwise explained, terms such as "directed," "requested," "authorized," "selected," "approved," "required," "accepted," and "permitted" mean "directed by Engineer," "requested by Engineer," and similar phrases. However, no such implied meaning will be interpreted to extend Engineer's responsibility into Asbestos abatement contractor's responsibility for construction supervision.
3. Furnish: Except as otherwise defined in greater detail, term "furnish" is used to mean supply and deliver to project site, ready for unloading, unpacking, assembly, installation, etc., as applicable in each instance.
4. Indicated: The term "indicated" is a cross-reference to graphic representations, notes or schedules on Drawings, to other paragraphs or schedules in the Specifications, and to similar means of recording requirements in Contract Documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used in lieu of "indicated," it is for purpose of helping reader locate cross-reference, and no limitation of location is intended except as specifically noted.
5. Install: Except as otherwise defined in greater detail, term "install" is used to describe operations at Project site including unloading, unpacking, assembly, erection, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning and similar operations, as applicable in each instance.
6. Installer: The term "installer" is defined as the entity (person or firm) engaged by the asbestos abatement contractor, or its sub-asbestos abatement contractor for performance of a particular unit of work at Project site, including installation, erection, application and similar required operations. It is a general requirement that such entities (installers) be expert in operations they are engaged to perform.
7. Provide: Except as otherwise defined in greater detail, term "provide" means furnish and install, complete and ready for intended use, as applicable in each instance.
8. Third-Party Air Monitor: The term "Third-Party Air Monitor" is defined as an entity engaged by City and Construction Project Manager to perform specific inspections or tests of the work, either at Project site or elsewhere; and to report and (if required) interpret results of those inspections or tests.

C. Definitions Relative to Asbestos Abatement:

1. Abatement: Any and all procedures physically taken to control fiber release from asbestos-containing materials. This includes removal, encapsulation, enclosure, cleanup and repair.



2. **Adequately Wet:** The complete penetration of a material with amended water to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material, then the material has not been adequately wetted. However, the absence of visible emissions is not evidence of being adequately wet. ACM must be fully penetrated with the wetting agent in order to be considered adequately wet. If the ACM being abated is resistant to amended water penetration, wetting agent shall be applied to the material prior to and during removal as necessary to minimize fiber release.
3. **Aggressive Sampling:** Method of sampling in which the individual collecting the air sample creates activity by the use of mechanical equipment during the sampling period to stir up settled dust and simulate activity in that area of the building.
4. **AHERA:** Asbestos Hazard Emergency Response Act of 1986
5. **AIHA:** American Industrial Hygiene Association.
6. **Airlock:** System for permitting entrance and exit while restricting air movement between a contaminated area and an uncontaminated area. It consists of two curtained doorways separated by a distance of at least three feet such that one passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination.
7. **Air Sampling:** Process of measuring the fiber content of a known volume of air collected during a specific period. The procedure utilized for asbestos follows the NIOSH Standard Analytical Method 7400, or the provisional transmission electron microscopy methods developed by the US EPA which is utilized for lower detection levels and specific fiber identification.
8. **Ambient Air Monitoring:** “Ambient air monitoring” shall mean measurement or determination of airborne asbestos fiber concentrations outside but in the general vicinity of the worksite.
9. **Amended Water:** Water to which a surfactant has been added.
10. **ANSI:** American National Standards Institute
11. **Area Air Sampling:** Any form of air sampling or monitoring where the sampling device is placed at some stationary location.



12. Asbestos: Any hydrated mineral silicate separable into commercially usable fibers, including but not limited to chrysotile (serpentine), amosite (cummingtonite-grunerite), crocidolite (riebeckite), tremolite, anthophyllite and actinolite.
13. Asbestos-Containing Material (ACM): Asbestos or any material containing more than one-percent asbestos.
14. Asbestos-Containing Waste Material: ACM, asbestos-contaminated objects or debris associated with asbestos abatement requiring disposal.
15. Asbestos-Contaminated Objects: Any objects which have been contaminated by asbestos or asbestos-containing material.
16. Asbestos Assessment Report: “Asbestos Assessment Report” shall mean the “Form ACP-5” form, as approved by NYCDEP, by which a NYCDEP-certified asbestos investigator certifies that a building or structure (or portion thereof) is free of ACM or the amount of ACM to be abated constitutes a minor project.
17. Asbestos Handler: Individual who disturbs, removes, repairs, or encloses asbestos material. This individual shall have completed approved training course(s) and be in possession of certification issued by NYCDEP and NYSDOL.
18. Asbestos Handler Supervisor: Individual who supervises the handlers during an asbestos project and ensures that proper asbestos abatement procedures as well as individual safety procedures are being adhered to. This individual shall have completed approved training course(s) and be in possession of certification issued by NYCDEP and NYSDOL.
19. Asbestos Investigator: An individual certified by NYCDEP as having successfully demonstrated his or her ability to identify the presence of and evaluate the condition of asbestos in a building or structure.
20. Asbestos Project: Any form of work performed in a building or structure which will disturb (e.g., remove, enclose, encapsulate) asbestos-containing material.
21. ASTM: American Society for Testing and Materials.
22. Asbestos Project Notification: The “Form ACP-7” asbestos project notification form as approved by DEP.



23. Authorized Visitor: Authorized visitor shall mean the building owner and his/her representative, and any representative of a regulatory or other agency having jurisdiction over the project.
24. Building Owner: Person in whom legal title to the premises is vested unless the premises are held in land trust, in which instance Building Owner means the person in whom beneficial title is vested.
25. Building Materials: Any and all manmade materials, including but not limited to interior and exterior finishes, equipment, bricks, mortar, concrete, plaster, roofing, flooring, caulking, sealants, tiles, insulation, and outdoor paving such as sidewalks, paving tiles and asphalt.
26. Certified Industrial Hygienist (CIH): Individual with a minimum of five years experience as an industrial hygienist and who has successfully completed both levels of the examination administered by the American Board of Industrial Hygiene and who is currently certified by that board.
27. Certified Safety Professional (CSP): Individual having a bachelor's degree from an accredited college or university and a minimum of four years experience as a safety professional and who has successfully completed both levels of the examination administered by the Board of Certified Safety Professionals and who is currently certified by that board.
28. Chain of Custody: "Chain of Custody" shall mean the form or set of forms that document the collection and transfer of a sample.
29. City: City of New York
30. Clean Room: An uncontaminated area or room that is part of worker decontamination enclosure system with provisions for storage of workers' street clothes and protective equipment.
31. Clearance Air Monitoring: Employment of aggressive sampling techniques with a volume of air collected to determine the airborne concentration of residual fibers and shall be performed as the final abatement activity.
32. Commissioner: shall mean the head of the Agency that has entered into this contract or his/her duly authorized representative.
33. Competent Person: Shall mean the designated person as defined by OSHA in 29 CFR1926.1101.



34. **Curtained Doorway:** Device that consists of at least three overlapping sheets of fire retardant plastic over an existing or temporarily framed doorway. One sheet shall be secured at the top and left side, the second sheet at the top and right side, and the third sheet at the top and left side. All sheets shall have weights attached to the bottom to ensure that the sheets hang straight and maintain a seal over the doorway when not in use.
35. **Decontamination Enclosure System:** Series of connected rooms, separated from the Work Area and from each other by air locks, for the decontamination of workers, materials, waste containers, and equipment.
36. **Demolition:** The dismantling or razing of a building, including all operations incidental thereto (except for asbestos abatement activities), for which a demolition permit from the New York City Department of Buildings is required.
37. **Department:** shall mean the New York City Department of Design and Construction (DDC).
38. **NYCDEP or DEP:** The New York City Department of Environmental Protection.
39. **Disturb:** Any action taken which may alter, change, or stir, such as but not limited to the removal, encapsulation, enclosure or repair of asbestos-containing material.
40. **DOB:** The New York City Department of Buildings.
41. **Egress:** A continuous and unobstructed path of vertical and horizontal egress travel from any occupied portion of a building or structure to a public way. A means of egress consists of three separate and distinct parts: the exit access, the exit and the exit discharge.
42. **ELAP:** Environmental Laboratory Approval Program administered by the New York State Department of Health.
43. **Encapsulant (sealant) or Encapsulating Agent:** Liquid material which can be applied to ACM and which temporarily controls the possible release of asbestos fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant). A thin coat of lockdown encapsulant shall be applied to all surfaces in the work area which were not the subject of removal or abatement, including the cleaned layer of the surface barriers, but excepting sprinklers, standpipes, and other active elements of the fire suppression system.



44. Encapsulation: The coating or spraying of asbestos-containing material encapsulant. A thin coat of lockdown encapsulant shall be applied to all surfaces in the work area which were not the subject of removal or abatement, including the cleaned layer of the surface barriers, but excepting sprinklers, standpipes, and other active elements of the fire suppression system.
45. Enclosure: Construction of airtight walls and/or ceilings between ACM and the facility environment, or around surfaces coated with ACM, or any other appropriate procedure as determined by the NYCDEP which prevents the release of asbestos fibers.
46. EPA or USEPA: United States Environmental Protection Agency.
47. Equipment Room: Contaminated area or room that is part of the worker decontamination enclosure system with provisions for the storage of contaminated clothing and equipment.
48. Exit: That portion of a means of egress system which is separated from other interior spaces of a building or structure by fire-resistance-rated construction to provide a protected path of egress travel between the exit access and the exit discharge.
49. FDNY: The Fire Department of the City of New York.
50. Fiber: An acicular single crystal or a similarity elongated polycrystalline aggregate which displays some resemblance to organic fibers by having such properties as flexibility, high aspect ratio, silky luster, axial lineation, and others, and which has attained its shape primarily through growth rather than cleavage.
51. Fixed Object: A unit of equipment, furniture, or other item in the work area which cannot be removed from the work area. Fixed objects shall include equipment, furniture, or other items that are attached, in whole or in part, to a floor, ceiling, wall, or other building structure or system or to another fixed object and cannot be reasonably removed from the work area. Fixed objects shall also include pipes and other equipment inside the work area which are not the subject of the asbestos project. Active fire suppression system components shall not be considered fixed objects.
52. Glovebag technique: shall mean a method for removing asbestos-containing material from heating, ventilation and air conditioning (HVAC) ducts, short piping runs, valves, joints, elbows, and other nonplanar surfaces. The glovebag assembly is a manufactured device consisting of a large bag (constructed of at least 6-mil transparent plastic), two inward-projecting long sleeve gloves, one inward-projecting waterwand sleeve, an internal tool



pouch, and an attached, labeled receptacle for asbestos waste. The glovebag is constructed and installed in such a manner that it surrounds the object or area to be decontaminated and contains all asbestos fibers released during the removal process.

53. HEPA-Filter: High efficiency particulate air filter capable of trapping and retaining 99.97 percent of particles (asbestos fibers) greater than 0.3 micrometers mass median aerodynamic equivalent diameter.
54. HEPA vacuum equipment: "HEPA vacuum equipment" shall mean vacuuming equipment with a HEPA filter.
55. Holding Area: Chamber in the equipment decontamination enclosure located between the washroom and an uncontaminated area.
56. Homogeneous Work Area: Portion of the Work Area that contains one type of ACM and/or where one type of abatement is used.
57. Industrial Hygiene: Science and art devoted to the recognition, evaluation, and control of those environmental factors or stresses, arising in or from the work place, which may cause sickness, impaired health and well being, or significant discomfort and inefficiency among worker or among the citizens of the community.
58. Industrial Hygienist: Individual having a college or university degree or degrees in Engineering, Chemistry, Physics or Medicine, or related Biological Sciences who, by virtue of special studies and training, has acquired competence in industrial hygiene. Such special studies and training must have been sufficient in all of the above cognate sciences to provide the abilities:
 - a. To recognize the environmental factors and to understand their effect on people and their well being; and
 - b. To evaluate, on the basis of experience and with the aid of quantitative measurement techniques, the magnitude of these stresses in terms of ability to impair people's health and well being; and
 - c. To prescribe methods to eliminate, control, or reduce such stresses when necessary to alleviate their efforts.
59. Isolation Barrier: The construction of partitions, the placement of solid materials, and the plasticizing of apertures to seal off the work place from surrounding areas and to contain asbestos fibers in the work area.



60. Large Asbestos Project: Asbestos project involving the disturbances (e.g., removal, enclosure, encapsulation) of 260 linear feet or more of ACM or 160 square feet or more of ACM.
61. Log: An official record of all activities that occurred during the project. At a minimum, the log shall identify the building owner, agent, asbestos abatement contractor, and workers, and other pertinent information including daily activities, cleanings and waste transfers, names and certificate numbers of asbestos handler supervisors and asbestos handlers; results of inspections of decontamination systems, barriers, and negative pressure ventilation equipment; summary of corrective actions and repairs; work stoppages with reason for stoppage; manometer readings at least twice per work shift; daily checks of emergency and fire exits and any unusual events.
62. Minor Project: A project involving the disturbance (e.g., removal, enclosure, encapsulation, repair) of 25 linear feet or less of asbestos containing material or 10 square feet or less of asbestos containing material.
63. Movable Object: Unit of equipment or furniture in the Work Area that can be removed from the Work Area.
64. Negative Air Pressure Equipment: Portable local exhaust system equipped with HEPA filtration. The system shall be capable of creating a negative pressure differential between the outside and inside of the Work Area.
65. NESHAPS: National Emission Standards for Hazardous Air Pollutants.
66. NFPA: The National Fire Protection Association.
67. NIOSH: National Institute for Occupational Safety and Health.
68. DEP or NYCDEP: New York City Department of Environmental Protection
69. NYSDOL: New York State Department of Labor.
70. NYSDOL ICR 56: "NYSDOL ICR 56" shall mean Part 56 of the Official Compilation of Codes, Rules and Regulations of the State of New York or 12 NYCRR Part 56.
71. NYSDOH: The New York State Department of Health.
72. Obstruction: The blocking of a means of egress with any temporary structure or barrier. A double layer of fire-retardant 6-mil polyethylene sheeting shall not be considered an obstruction when it is prominently marked as an exit with photo luminescent signage or paint and cutting tools



(knife, razor) are attached to the work area side of the sheeting for use in the event that the sheeting must be cut to permit egress. A corridor shall not be considered obstructed when there is a clear path measuring at least three (3) feet wide.

73. Occupied Area: Area of the work site where abatement is not taking place and where personnel or occupants normally function or where workers are not required to use personal protective equipment.
74. OSHA: Occupational Safety and Health Administration.
75. Outside air: "Outside air" shall mean the air outside the work place.
76. Person: Individual, partnership, company, corporation, association, firm, organization, governmental agency, administration, or department, or any other group of individuals, or any officer or employee thereof.
77. Personal Air Monitoring: Method used to determine employees' exposure to airborne asbestos fibers. The sample is collected outside the respirator in the worker's breathing zone.
78. Personal Protective Equipment (PPE): Appropriate protective clothing, gloves, eye protection, footwear, and head gear.
79. Phase Contrast Microscopy (PCM): The measurement protocol for the assessment of the fiber content of air. (NIOSH Method 7400).
80. Physician: Person licensed or otherwise authorized under Article 131 Section 65.22 of the New York State Education Law.
81. Plasticize: To cover floors and walls with fire retardant plastic sheeting as herein specified or by using spray plastics as acceptable to the Department.
82. Polarized Light Microscopy (PLM): The measurement protocol for the assessment of the asbestos content of bulk materials. (Interim Method for the Determination of Asbestiform Materials in Bulk Insulation Samples- 40 CFR Part 763, Subpart F, Appendix A as amended on September 1, 1982)
83. Project Designer: A person who holds a valid Project Designer Certificate issued by the New York State Department of Labor.
84. Project Monitor: A person who holds a valid Project Monitor Certificate issued by the New York State Department of Labor.



85. Qualitative Fit Test: Individual test subject's responding (either voluntarily or involuntarily) to a chemical challenge outside the respirator face-piece. Acceptable methods include irritant smoke test, odorous vapor test, and taste test.
86. Quantitative Fit Test: Exposing the respiratory wearer to a test atmosphere containing an easily detectable, nontoxic aerosol, vapor or gas as the test agent. Instrumentation, which samples the test atmosphere and the air inside the face-piece of the respirator, is used to measure quantitatively the leakage into the respirator. There are a number of test atmospheres, test agents, and exercises to perform during the test.
87. Registered Design Professional: A person licensed and registered to practice the professions of architecture or engineering under the Education Law of the State of New York.
88. Removal: Stripping of any asbestos- containing materials from surfaces or components of a facility or taking out structural components in accordance with 40 CFR 61 Subparts A and M.
89. Renovation: An addition or alteration or change or modification of a building or the service equipment thereof, that is not classified as an ordinary repair as defined in §27-125 of the Administrative Code of the City of New York.
90. Repair: Corrective action using specified work practices (e.g., glovebag, plastic tent procedures, etc.) to minimize the likelihood of fiber release from minimally damaged areas of ACM.
91. Replacement material: Any material used to replace ACM that contains less than .01 percent asbestos.
92. Shift: A worker's, or simultaneous group of workers', complete daily term of work.
93. Shower Room: Room between the clean room and the equipment room in the worker decontamination enclosure with hot and cold running water controllable at the tap and arranged for complete showering during decontamination.
94. Small Asbestos Project: Asbestos project involving the disturbance (e.g., removal, enclosure, encapsulation) of more than 25 and less than 260 linear feet of ACM or more than ten and less than 160 square feet of ACM.



95. Staging Area: Work Area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the Work Area.
96. Strip: To remove asbestos materials from any part of the facility.
97. Structural Member: Load-supporting member of a facility, such as beams and load-supporting walls, or any non-load-supporting member, such as ceiling and non-load-supporting walls.
98. Surface barriers: The plasticizing of walls, floors, and fixed objects within the work area to prevent contamination from subsequent work.
99. Surfactant: Chemical wetting agent added to water to improve penetration.
100. Transmission Electron Microscopy (TEM): The measurement protocol for the assessment of the asbestos fiber content of air. Interim Transmission Electron Microscopy Analytical Methods-40 CFR Part 763, Subpart E, Appendix A.
101. Visible Emissions: Emissions containing particulate material that are visually detectable without the aid of instruments.
102. Washroom: Room between the Work Area and the holding area in the equipment decontamination enclosure system where equipment and waste containers are wet cleaned and/or HEPA-vacuumed prior to disposal.
103. Waste decontamination enclosure system: “Waste decontamination enclosure system” shall mean the decontamination enclosure system designated for the controlled transfer of materials and equipment, consisting of a washroom and a holding area.
104. Wet Cleaning: “Wet cleaning” shall mean the removal of asbestos fibers from building surfaces and objects by using cloths, mops, or other cleaning tools which have been dampened with water.
105. Wet methods: “Wet methods” shall mean the use of amended water or removal encapsulants to minimize the generation of fibers during ACM disturbance.
106. Work Area: Designated rooms, spaces, or areas of the building or structure where asbestos abatement activities take(s) place.



107. Worker Decontamination Enclosure System: Portion of a decontamination enclosure system designed for controlled passage of workers and authorized visitors, consisting of a clean room, a shower room, and an equipment room separated from each other and from the Work Area by airlocks and curtained doorways.
108. Work Place: The work area and the decontamination enclosure system(s).
109. Work Place Safety Plan: Construction documents prepared by a registered design professional and submitted for review by DEP in order to obtain an asbestos abatement permit. Such plan shall include, but not be limited to, plans, sections, and details of the work area clearly showing the extent, sequence, and means and methods by which the work is to be performed.
110. Work Site: Premises where abatement activity is being performed. May be composed of one or more Work Areas.

1.06 STANDARD OPERATING PROCEDURES

- A. Develop and implement a written standard procedure for abatement work to ensure maximum protection and safeguard from asbestos exposure of the workers, visitors, employees, public, and environment.

- B. TELEPHONE DEVICE

The asbestos abatement contractor or his authorized representative shall, at all times during the normal workday or during periods of overtime work under this Contract, carry a mobile cellular telephone capable of transmitting photographs and data. He/she shall supply the Department of Design and Construction with the phone number for the device and he/she is liable to respond back to the calls from DDC within the next one (1) hour period after he/she receives calls from DDC. The cost to the asbestos abatement contractor for this device and all charges accruing thereto is deemed included in the work.

- C. The standard operating procedure shall ensure:
 1. Tight security from unauthorized entry into the workspace.
 2. Restriction of asbestos abatement contractor's personnel to the immediate Work Area and access/egress routes.
 3. Donning of proper protective clothing and respiratory protection prior to entering the Work Area.



4. Safe work practices in the work place, including provisions for inter-room communications, exclusion of eating, drinking, smoking, or in any way breaking the respiratory protection.
 5. Proper exit practices from the work space to the outside through the showering and decontamination facilities.
 6. Removing asbestos in a way that minimizes release of fibers.
 7. Packing, labeling, loading, transporting, and disposing of contaminated material in a way that minimizes exposure and contamination.
 8. Emergency evacuation procedures, for medical or safety situations, to minimize the potential exposure to airborne asbestos fibers for emergency personnel, building occupants, and building environment.
 9. Safety from accidents in the workspace, especially from electrical shocks, fall hazards associated with scaffolding, slippery surfaces, and entanglements in loose hoses and equipment.
 10. Provisions for effective supervision, air monitoring and personnel monitoring for exposure during the work.
 11. Engineering controls that minimize exposure to fibers within the workspace.
 12. The asbestos abatement contractor shall provide a 24-hour fire watch throughout the entire term of the project, to protect against fire and unauthorized entry into the workspace when required by the NYCDEP. Fire watch shall be performed by an individual who is a certified asbestos worker capable of entering the Work Area for regular inspections.
- D. Provide an Asbestos Handler Supervisor to provide continuous supervision of all work, and to be responsible for the following:
1. Ensure that individuals are using proper personal protective equipment, are trained in its use and hold valid NYCDEP and NYSDOL Asbestos Handler certificates.
 2. Maintain entry log records and ensure that they are recorded in accordance with the provisions of Title 15, Chapter 1 of RCNY and NYSDOL ICR 56.
 3. Surveillance of the Work Areas at a minimum of once per work shift or as required by Title 15, Chapter 1 of RCNY and NYSDOL ICR 56 -7.3, to ensure the integrity of work place isolation, negative pressure equipment and workers personal protective equipment is not torn or ripped and that respiratory protection is worn at all times.



4. Ensure that sufficient personal protective equipment is stored in the clean room.
5. Take precautions to prevent heat stress. Precautions include, but are not limited to, selecting lightweight protective clothing, reducing the work rate, and providing adequate fluid breaks.
6. Perform work area inspection with project monitor prior to the commencement of final clearance air monitoring.
7. The asbestos abatement contractor shall retain the asbestos handler supervisor to perform a visual inspection prior to the post-abatement clearance air monitoring to confirm that all containerized waste has been removed from work and holding areas and there is no visible ACM debris or residue on or about all abated surfaces.

E. ENGINEERING CONTROLS

1. All asbestos projects shall utilize negative pressure ventilation equipment.
 - a. The asbestos abatement contractor shall use a manometer to document the pressure differential. The asbestos abatement contractor shall install and make the manometer operational once the negative pressure has been established in the work area. Magnahelic manometers shall be calibrated at least every six months and a copy of the current calibration certification shall be available at the work site.
2. Negative pressure ventilation equipment shall be installed and operated to provide at least one air change in the work area every 15 minutes. Where there are no floor or wall barriers because floor or wall material is being abated, there shall be at least one air change in the work area every ten minutes.
3. The negative pressure ventilation equipment shall operate continuously, 24 hours a day, from the establishment of isolation barriers through successful clearance air monitoring. If such equipment shuts off, adjacent areas shall be monitored for asbestos fibers.
4. A static negative air pressure of 0.02 inches (minimum) water column shall be maintained at all times in the work place during abatement to ensure that contaminated air in the Work Area does not filter back to uncontaminated areas.



5. If the contaminated area of an asbestos project covers the entire floor of the affected building, or an area greater than 15,000 square feet on any given floor, the installation of a negative air cut off switch or switches shall be required at a single location outside the work place, such as inside a stairwell, or at a secured location in the ground floor lobby when conditions warrant. The required switch or switches shall be installed by a licensed electrician pursuant to a permit issued by the Department of Buildings. If negative pressure ventilation equipment is used on multiple floors, the cut off switch shall be able to turn off the equipment on all floors.
6. On loss of negative pressure or electric power to the negative pressure ventilating units, abatement shall stop immediately and shall not resume until power is restored and negative pressure ventilation equipment is operating again.
7. Negative pressure ventilation equipment shall be exhausted to the outside of the building away from occupied areas.
 - a. All openings (including but not limited to operable windows, doors, vents, air intakes or exhausts of any mechanical devices) less than 15 feet from the exterior exhaust duct termination location shall be plasticized with two layers of fire retardant 6-mil polyethylene sheeting, or a second negative pressure ventilation unit with the primary unit's capacity shall be connected in series prior to exhausting to the outside.
 - b. Negative pressure ventilation equipment shall exhaust away from areas accessible to the public.
 - c. All ducting shall be sealed and braced or supported to maintain airtight joints. Ducts shall be reinforced and shall be installed so as to prevent breakage. Damage to ducts must be repaired immediately.
8. Where ducting to the outside is not possible, a second negative pressure ventilation unit compatible with the primary unit's capacity shall be connected in series. The area receiving the exhaust shall have sufficient, non-recycling exhaust capacity to the outside of the structure.
9. In the event that there is a failure of the containment system or a breach in the Isolation Barriers, all abatement work will cease and the asbestos abatement contractor will immediately correct the condition. Abatement work will not resume until the Work Area has been smoke tested by the third party laboratory and approved by the Construction Project Manager.



F. LOCKDOWN ENCAPSULATION PROCEDURES

1. The following procedures shall be followed to seal in non-visible residue while conducting lockdown encapsulation on all surfaces from which ACM has not been removed:
 - a. Only encapsulants rated as acceptable or marginally acceptable on the basis of Battelle Columbus Laboratory test procedures and rating requirements developed under the 1978 USEPA Contract shall be used for lockdown encapsulation.
 - b. The encapsulant solvent or vehicle shall not contain a volatile hydrocarbon unless reviewed and approved by DEP.
 - c. Latex paint with solids content greater than 15 percent shall be considered a lockdown sealant for coating all non-metallic surfaces.
 - d. Encapsulants shall be applied using airless spray equipment. Spraying is to occur at the lowest pressure range possible to minimize fiber release from encapsulant impact at the surface. It shall be applied with a consistent horizontal or vertical motion.
 - e. The cleaned layer of the surface barriers shall be removed from walls and floors.

The isolation barriers shall remain in place throughout cleanup. Decontamination enclosure systems shall remain in place and be utilized. A thin coat of lockdown encapsulant shall be applied to all surfaces in the work area which were not the subject of removal or abatement, including the cleaned layer of the surface barriers, but excepting sprinklers, standpipes, and other active elements of the fire suppression system.

1.07 NOTIFICATIONS, PERMITS, WARNING SIGNS, LABELS, AND POSTERS

- A. The asbestos abatement contractor shall submit an Asbestos Project Notification (ACP-7) to the NYCDEP listing each work area within the building separately one week in advance of the start of work.
- B. The registered design professional shall obtain an asbestos abatement permit authorizing the performance of construction work as required for asbestos projects involving one or more of the following activities:
 1. Obstruction of an exit door leading to an exit stair or the exterior of the building;
 2. Obstruction of an exterior fire escape or access to that fire escape;



3. Obstruction of a fire-rated corridor leading to an exit door;
 4. Removal of handrails in an exit stair or ramp;
 5. Removal or dismantling of any fire alarm system component including any fire alarm-initiating device (e.g., smoke detectors, manual pull station);
 6. Removal or dismantling of any exit sign or any component of the exit lighting system, including photo luminescent exit path markings;
 7. Removal or dismantling of any part of a sprinkler system including piping or sprinkler heads;
 8. Removal or dismantling of any part of a standpipe system including fire pumps or valves;
 9. Removal of any non-load bearing / non-fire-rated wall (greater than 45 square feet or 50 percent of a given wall);
 10. Any plumbing work other than the repair or replacement of plumbing fixtures;
 11. Removal of any fire-resistance rated portions of a wall, ceiling, floor, door, corridor, partition, or structural element enclosure including spray-on fire resistance rated materials;
 12. Removal of any fire damper, smoke damper, fire stopping material, fire blocking, or draft stopping within fire-resistance rated assemblies or within concealed spaces;
 13. Any work that otherwise requires a permit from the DOB (full demolitions, alterations, renovations, modifications or plumbing work).
- C. The asbestos abatement contractor shall provide a floor plan showing the areas of the building under abatement and the location of all fire exits in said areas. It shall be prominently posted in the building lobby or comparable location, along with a notice stating the location within the building of the negative air cutoff switch, if applicable.
- D. When one or more of the activities listed in 1.07 (B) (1-8) and (B)(13) of this specification an asbestos abatement permit is required by DEP. The general contractor is responsible for submitting, a work place safety plan (WPSP) and any other applicable construction documents. These documents must be prepared and sealed by a registered design professional.



- E. A WPSP is not required for projects requiring an asbestos abatement permit due to one or more of the activities listed in 1.07 (B) (9-12) of this specification. The asbestos abatement contractor shall submit, together with the asbestos project notification, all applicable asbestos abatement permit construction documents.
- F. The general contractor shall retain a Registered Design Professional to perform the inspections required pursuant to Title 28 of the Administrative Code, including but not limited to special inspections required by Chapter 17 of the Building Code, as follows:
 - 1. A final inspection shall be performed by a registered design professional retained by the general contractor after all work authorized by the asbestos abatement permit is completed. The person performing the inspection shall note all failures to comply with the provisions of the Building Code or approved asbestos abatement permit and shall promptly notify the owner in writing. All defects noted in such inspection shall be corrected. The final inspection report shall either:
 - a. Confirm:
 - (1) That the construction work is complete, including the reinstallation or reactivation of any building fire safety or life safety component.
 - (2) That any defects previously noted have been corrected.
 - (3) That all required inspections were performed.
 - (4) That the work is in substantial compliance with the approved asbestos abatement permit construction documents, the Building Code, and other applicable laws and rules.
 - b. Confirm:
 - (1) That the construction work does not return the building (or portion thereof) affected by the abatement project to a condition compliant with the building code and other applicable laws and rules, but that the registered design professional has reviewed an application for asbestos abatement permit construction documents approval that has been approved by the department of buildings, and the subsequent scope of work as approved will, upon completion, render all areas affected by the asbestos project in full compliance with the building code and all applicable laws and rules.



- (2) That any defects previously noted that are not addressed by the subsequent scope of work as approved by the department of buildings, have been corrected.
 - (3) That all required inspections that are not addressed by the subsequent scope of work as approved by the department of buildings were performed.
 - (4) That all completed work pursuant to an asbestos abatement permit is in substantial compliance with the approved asbestos abatement permit construction documents.
- G. The Registered Design Professional shall provide the final inspection reports to be filed with DEP on A-TR1 form. Records of final inspections made by registered design professionals shall be submitted to DDC as part of the close out document package.
- H. Erect bilingual (English-Spanish) warning signs around the work space and at every point of potential entry from the outside and at main entrance to building which can be viewed by the public without obstruction, in accordance with OSHA 29 CFR 1926.1101 (K) (Sign Specifications) and Title 15, Chapter 1 of RCNY. The warning signs shall be a bright color so that they will be easily noticeable. The size of the sign and the size of the lettering shall be no less than OSHA requirements.
- I. Provide the required labels for all polyethylene bags and all drums utilized to transport contaminated material to the landfill in accordance with OSHA 29 CFR 1926.1101 (K)(2) and by 49 CFR Parts 171 and 172 of the Department of Transportation regulations.
- J. Provide any other signs, labels, warnings, and posted instructions that are necessary to protect, inform and warn people of the hazard from asbestos exposure. Post in a prominent and convenient place for the workers a copy of the latest applicable regulations from OSHA, EPA, NIOSH, State of New York and New York City and any additional items mandated for posting by the aforementioned regulations.
- K. Furnish all permits, variances and notices required to perform the Work.

1.08 EMERGENCY PRECAUTIONS

- A. Establish emergency and fire exits from the Work Area. The clean side of all emergency exits shall be equipped with two full sets of protective clothing and respirators at all times.



- B. Notify local medical emergency personnel, both ambulance crews and hospital emergency room staff prior to commencement of abatement operations as to the possibility of having to handle contaminated or injured workmen.
- C. Prepare to administer first aid to injured personnel after decontamination. Seriously injured personnel shall be treated immediately or evacuated immediately for decontamination. When an injury occurs, precautions shall be taken to reduce airborne fiber concentrations (i.e., misting of the air with water) until the injured person has been removed from the Work Area.
- D. Notify, before actual removal of the asbestos material, the local police and fire departments to the danger of entering the Work Area. Asbestos abatement contractor shall make every effort to help these agencies form plans of action should their personnel need to enter the contaminated area.

1.09 SUBMITTALS

A. Pre-Construction Submittals:

- 1. Attend a pre-construction meeting scheduled by the Department. This meeting shall also be attended by a designated representative of the City of New York third party air monitoring firm, facility manager and the Construction Project Manager. At this meeting, the asbestos abatement contractor shall present three copies of the following items, bound and indexed. The detailed plan of action must be submitted at least five (5) days prior to the pre-construction meeting.
 - a. Asbestos abatement contractor's scope of work, work plan and schedule.
 - b. Asbestos project notifications, approved variances and plans to Government Agencies.
 - c. Copies of Permits, clearance and licenses if required.
 - d. Schedules: the asbestos abatement contractor shall provide to the Construction Project Manager a copy of the following schedules for approval. Once approved, schedules shall be maintained and updated as received. Asbestos abatement contractor shall post a copy of all schedules at the site:
 - (1) A construction schedule stating critical dates of the project including, but not limited to, mobilization, Work Area preparation, demolition, gross removal, fine cleaning, encapsulation, inspections, clearance monitoring, and phase of



refinishing and final inspections. The schedule shall be updated biweekly, at a minimum.

- (2) A schedule of staffing stating number of workers per shift per activity, name and number of supervisor(s) per shift, shifts per day, and total days to be worked.
 - (3) Submit all changes in schedule or staffing to the Construction Project Manager prior to implementation.
 - (4) A schedule of equipment to be used including numbers and types of all major equipment such as HEPA Air Filtration Units, HEPA-vacuums, airless sprayers, Water Atomizing Devices and Type "C" compressors.
- e. A written plan and shop drawings for preparation of work site and decontamination chamber.
 - f. Description of protective clothing and approved respirator to be used, make, model, NIOSH approval numbers.
 - g. Delineation of responsibility of work site supervision, including competent person, with names, resumes, and home telephone numbers.
 - h. Explanation of decontamination sequence and isolation techniques.
 - i. Description of specific equipment to be utilized, including make and model number of air filtration devices, vacuums, sprayers, etc.
 - j. Description of any prepared methods, procedures, techniques, or equipment other than those specified in the Contract Documents.
 - k. Explanation of the handling of asbestos contaminated wastes including EPA and NYCDEC identification numbers of Waste Hauler.
 - l. Description of the final clean-up procedures to be used.
 - m. Name and qualifications of asbestos abatement contractor's Air Monitor including AIHA accreditation, and proof of NIOSH PAT and NIST/NVLAP Bulk Quality Assurance Proficiency of OSHA samples for approval by the City of New York Department of Design and Construction.



- n. Written description of emergency procedures to be followed in case of injury or fire. This section must include evacuation procedures, source of medical assistance (name and telephone number) and procedures to be used for access by medical personnel (examples: first aid squad and physician). NOTE: Necessary Emergency Procedures Shall Take Priority Over All Other Requirements of These Specifications.
- o. Safety Data Sheets (SDS) for encapsulants, sealants, firestopping foam, cleaners/disinfectants, spray adhesive and any and all potentially hazardous materials that may be employed on the project. No work involving the aforementioned will be allowed to proceed until SDS are reviewed.
- p. Worker Training and Medical Surveillance: Asbestos abatement contractor shall submit a list of the NYSDOL and NYCDEP Asbestos supervisors and handlers who will work on this project. Present evidence that workers have received proper training required by the regulations and required by OSHA 29 CFR 1926.1101 (Asbestos Standard) and 1926.1200 (HAZCOM standard) and any other standards applicable to the work.
- q. Logs: Specimen copies of daily progress log, visitor's log, and disposal log.
 - (1) The asbestos abatement contractor shall provide a permanently bound log book of minimum 8-1/2" x 11" size at the entrance to the Worker and Waste Decontamination enclosure system as hereinafter specified. Log book shall contain all information specified in ICR56-3.4 (a)(2)(i).
 - (2) All entries into the log shall be made in non-washable, permanent ink and such pen shall be strung to or otherwise attached to the log to prevent removal from the log-in area. Under no circumstances shall pencil entries be permitted. Any significant events occurring during the abatement project shall be entered into the log. Upon completion of the job, the Asbestos abatement contractor shall submit a copy of the logbook containing a day-to-day record of personnel log entries countersigned by the Construction Project Manager every day.
 - (3) Worker's Acknowledgments: Submit statements signed by each employee that the employee has received training in the proper handling of ACM, understands the health implications and risks involved; and understands the use and limitations of the respiratory equipment to be used.



- B. During Construction Submittals:
Submit copies of the following items to the Construction Project Manager during the work:
1. Security and safety logs showing names of person entering workspace, date and time of entry and exit, record of any accident, emergency evacuation, and any other safety and/or health incident.
 2. Progress logs showing the number of workers, supervisors, hours of work and tasks completed shall be submitted daily to the Construction Project Manager.
 3. Floor plans indicating asbestos abatement contractor's current work progress shall be submitted for review by the Construction Project Manager at weekly progress meetings.
 4. All asbestos abatement contractors' air monitoring and inspection results.
- C. Project Closeout Submittals:
- Upon completion of the project and as a condition of acceptance, the asbestos abatement contractor shall present two copies of the following items, bound and indexed:
1. Lien Waivers from asbestos abatement contractor, Sub-asbestos abatement contractors and Suppliers,
 2. Daily OSHA air monitoring results,
 3. All Waste Manifests (Asbestos and Construction Debris), seals and disposal logs,
 4. Field Sign-In/Sign-Out Logs for every shift,
 5. Copies of all Building Department Forms and Permits,
 6. A Letter of Compliance stating that all the work on this project was performed in accordance with the Specifications and all applicable Federal, State and Local regulations,
 7. All Warranties as stated in the Specifications,
 - a. Fully executed disposal certificates and transportation manifest.



8. Project Record: The asbestos abatement contractor shall maintain a project record for all small and large asbestos projects. During the project, the project record shall be kept on site at all times. Upon completion of the project, the project record shall be maintained by the building owner. The project record shall consist of:
 - a. Copies of licenses of all asbestos abatement contractors involved in the project;
 - b. Copies of DEP and NYSDOL supervisor and handler certificates for all workers engaged in the project;
 - c. Copies of all project notifications and reports filed with DEP, NYSDOL and EPA for the project, with any amendments or variances;
 - d. Copies of all asbestos abatement permits, including associated approved plans and work place safety plan;
 - e. A copy of the air sampling log and all air sampling results;
 - f. A copy of the abatement asbestos abatement contractor's daily log book;
 - g. All data related to bulk sampling including the results of any asbestos surveys performed by an asbestos investigator;
 - h. Copies of all asbestos waste manifests;
 - i. A copy of all Project Monitor's Reports (ACP-15).
 - j. A copy of each ATR-1 Form completed for the asbestos project (if required).
 - k. A copy of each Asbestos Project Conditional Closeout Report (ACP-20).
 - l. A copy of the Asbestos Project Completion Form (ACP-21).
 - m. A copy of the project record shall be submitted to DDC and its Third Party Air Monitor within 48 hours of the Issuance of the ACP-21 form, as part of the close out documents.



9. The asbestos abatement contractor shall submit one of the following certifications to the general contractor, with a copy provided to DDC:
 - a. Asbestos Project Completion Form. If an asbestos project has been performed, a copy of the asbestos project completion form issued by DEP shall be submitted to DOB, with a copy being provided to DDC, prior to the issuance of a DOB permit and to any amendment of the underlying construction document approval which increases the scope of the project to include (a) work area(s) not previously covered.
 - b. An Asbestos Project Conditional Close-out Form. If an asbestos project has been performed a copy of the asbestos project conditional close-out form issued by DEP shall be submitted to DOB, with a copy being provided to DDC, prior to the issuance of a DOB permit and to any amendment of the underlying construction document approval which increases the scope of the project to include (a) work area(s) not previously covered.

1.10 QUALITY ASSURANCE

- A. All work required for the completion of this project or called for in this Specification must be executed in a workmanlike manner by using the appropriate methods established by regulatory requirements and/or industrial standards. All workmanship or work methods are subject to review and acceptance by the Construction Project Manager. Throughout the Specification, reference is made to codes and standards which establish qualities, levels or types of workmanship which will be considered acceptable. It is the asbestos abatement contractor's responsibility to comply with these codes and standards during the execution of this work.
- B. All materials and equipment required or consumed during the work of this Contract must meet the minimum acceptable criteria established by codes and standards referenced elsewhere in this Specification. Materials and equipment must be submitted for prior approval to the DDC project manager as part of the asbestos abatement contractor's "Shop Drawings".
- C. It is the asbestos abatement contractor's responsibility, when so required by the Specification or upon written request from the Commissioner or his representative to furnish all required proof that workmanship, materials and/or equipment meet or exceed the codes and standards referenced. Such proof shall be in the form requested, typically a certified report or test conducted by a testing entity approved for that purpose by DDC.



- D. The asbestos abatement contractor shall furnish proof that employees working under his supervision have had instruction on the dangers of asbestos exposure, on respirator use, decontamination, and OSHA regulations. This proof shall be in the form of a notarized affidavit to the effect that the above requirements have been satisfied and a copy of the Job Hazard Analysis (JHA) with tool box meeting executed meeting sign in sheet.
- E. The asbestos abatement contractor will have posted and in view at the job site the OSHA regulations 29 CFR 1910.1001, and 1926.1101 Asbestos Standard, and 29 CFR 1926.59 Hazard Communication Standard Environmental Protection Agency 40 CFR, Part 61, subpart B: National Emission Standard for asbestos, asbestos stripping, work practices and disposal of asbestos waste. One copy of NYC Title 15, Chapter 1 of RCNY and NYS DOL ICR 56 at the job site at all times.
- F. Familiarity with Pertinent Codes and Standards: In procuring all items used in this work, it is the asbestos abatement contractor's responsibility to verify the detailed requirements of the specifically named codes and standards and to verify that the items procured for use in this work meet or exceed the specified requirements, and are suitable for their intended use.
- G. Rejection of Non-Complying Items: The Commissioner reserves the right to reject items incorporated into the work that fail to meet the specified minimum requirements. The Commissioner further reserves the right, and without prejudice to other recourse that maybe taken, to accept non-complying items subject to an adjustment in the Contract amount as approved by the City.
- H. Applicable Regulations, Codes and Standards: Applicable standards listed in these Specifications include, but are not necessarily limited to, standards promulgated by the following agencies and organizations:
1. American National Standards Institute (ANSI)
(Successor to USASI and ASA)
25 West 43rd Street (between 5th and 6th Avenue) 4th Floor
New York, NY 10036
212-642-4900
 2. American Society for Testing and Materials (ASTM)
100 Bar Harbor Drive
West Conshohocken, PA 19428-2959
610-832-9500
 3. National Institute for Occupational Safety and Health (NIOSH)
Robert A. Taft Laboratory
4676 Columbia Pkwy
Mailstop R12 Cincinnati, Ohio 45226
513-841-4428



4. National Electrical Code (NEC)
See NFPA
5. National Fire Protection Association (NFPA)
1 Batterymarch Park
Quincy, Massachusetts 02169-7471
617-770-3000
6. New York City Fire Department (FDNY)
9 Metrotech Center
Brooklyn, NY 11201-5431
718-999-2117
7. New York City Department of Buildings (NYC DOB)
Enforcement Division
280 Broadway, New York, New York 10007
212- 566-2850
8. New York City Department of Environmental Protection (NYCDEP)
Bureau of Environmental Compliance
Asbestos Control Program
59-17 Junction Boulevard, 8th Floor
Corona, New York 11368
718-595-3682
9. New York City Department of Health and Mental Hygiene (NYC DOHMH)
Environmental Investigation
125 Worth Street
New York, New York 10013
212-442-3372
10. New York State Department of Labor (NYSDOL)
Division of Safety and Health, Engineering Services Unit
State Office Building Campus
Albany, New York 12240-0010
11. New York City Department of Sanitation
125 Worth Street, Room 714
New York, New York 10013
212-566-1066
12. Occupational Safety and Health Administration (OSHA)
Region II - Regional Office
201 Varick Street, Room 908
New York, New York 10014
212-337-2378



13. United States Environmental Protection Agency (EPA or USEPA)
Region II
Asbestos NESHAPS Contact
Air and Waste Management Division
(Air Compliance Branch) – USEPA
290 Broadway, 21st Floor
New York, New York 10007-1866
212-637-3660

- I. Post all applicable regulations in a conspicuous place at the job site. Assure that the regulations are not altered, defaced or covered by other materials. One copy of each regulation must also be kept at the Asbestos abatement contractor's office.

1.11 CITY/ASBESTOS ABATEMENT CONTRACTOR RESPONSIBILITIES

- A. The normal occupants of the Work Areas will be relocated by the City prior to the performance of the abatement work and returned there to at the conclusion of the abatement work, at no cost to the asbestos abatement contractor. However, the asbestos abatement contractor shall protect all furniture and equipment in the Work Areas in a manner as hereinafter specified. In addition, the asbestos abatement contractor shall perform the work of this Contract in a manner that will be least disruptive to the normal use of the non-Work Areas in the building.
- B. Asbestos abatement contractor shall be responsible for cleaning all portable items not specifically addressed by the Facility, in the Work Areas, or dispose of same as asbestos contaminated waste.
- C. Facility to provide asbestos abatement contractor with a list of items that cannot be removed and need special attention.
- D. Facility to stop all deliveries that may be scheduled to the Work Area while work is in progress.
- E. Facilities to have authorized personnel on site at all times or supply the asbestos abatement contractor with means of contacting such personnel without unreasonable delay. Such personnel shall have access to all areas, have knowledge of electrical, and air handling equipment. Such personnel shall assist the asbestos abatement contractor in case of any power failure or breakdown to shut down air supply systems, to reset and control all protective systems such as alarms, sprinklers, locks, etc. The Facility shall ensure no active air handling systems are operating within the Work Area.
- F. City will not occupy the portions of the building, in which work is being performed during the entire asbestos removal operation, including completion of clean up.



- G. Asbestos abatement contractor shall provide a plan for 24 hour job security both for prevention of theft and for barring entry of curious but unprotected personnel into Work Areas, as required by the Department.
- H. Asbestos abatement contractor shall provide surveillance by a fire watch and set forth procedures to be taken for the safety of building occupants in the event of an emergency, in accordance with the WPSP and DEP regulations.
- I. Should the failure of any utility occur, the City will not be responsible to the asbestos abatement contractor for loss of time or any other expense incurred.
- J. Facility will be responsible to notify the asbestos abatement contractor of any planned electrical power shutdowns in order to ensure that there are no power interruptions in the negative air pressure systems.
- K. Asbestos abatement contractor shall remove all flammable materials from the work area and all sources of ignition (including but not limited to pilot lights) shall be extinguished.
- L. Asbestos abatement contractor shall require a competent person (as defined in OSHA 1926.1101) to perform the following functions and to be on-site continuously for the duration of the project:
 - 1. Monitor the set up of the Work Area enclosure and ensure its integrity.
 - 2. Control entry and exit into the work enclosure.
 - 3. Ensure that employees are adequately trained in the use of engineering controls, proper work practices, proper personal protective equipment and in decontamination procedures.
 - 4. Ensure that employees use proper engineering controls, proper work practices, proper personal protective equipment and proper decontamination procedures.
 - 5. The competent person (as defined in OSHA1926.1101) shall check for rips and tears in work suits, and ensure that they are mended immediately or replaced.

1.12 USE OF BUILDING FACILITIES

- A. City shall make available to the asbestos abatement contractor, from existing outlets and supplies, all reasonably required amounts of water and electric power at no charge.



- B. Electric power to all Work Areas shall be shut down and locked out except for electrical equipment that must remain in service. Safe temporary power and lighting shall be provided by asbestos abatement contractor in accordance with applicable codes. All power to Work Areas shall be brought in from outside the area through ground-fault interrupter circuits installed at the source. Stationary electrical equipment within the Work Area, which must remain in service, shall be adequately protected, enclosed and ventilated. The Facility will identify all electric lines that must remain in service. Asbestos abatement contractor shall protect all lines.
- C. Asbestos abatement contractor shall provide, at his own expense, all electrical, water, and waste connections, tie-ins, extensions, and construction materials, supplies, etc. All water tie-ins shall be hard piped with polyethylene or copper piping. At the end of each shift, asbestos abatement contractor shall disconnect all hoses within the work zone and place in equipment room of the worker decontamination unit. Asbestos abatement contractor shall ensure positive shutoff of all water to Work Area during non-working hours.
- D. Utilities:
 - 1. General:

All temporary facilities required to be installed, shall be subject to the approval of the Commissioner. Prior to starting the work at any site; specify clearly the temporary locations of facilities preferably with sketches and submit the same to the Construction Project Manager for approval.
 - 2. Water:

The Department of Design and Construction will furnish all water needed for construction, at no cost to the asbestos abatement contractor in buildings under their jurisdiction. All temporary plumbing or adaptations to supply the needs of the Work Area shall be installed and removed by the asbestos abatement contractor and the cost thereof included in the Lump Sum price for abatement work. Shower water for the decontamination unit shall be provided hot. Heating of water, if necessary, shall be provided by the asbestos abatement contractor.
 - 3. Electricity:

The Department of Design and Construction will furnish all electricity needed for construction, at no cost to the asbestos abatement contractor in buildings under their jurisdiction. All temporary electrical work or adaptations to supply the needs of the Work Area shall be installed and removed by the asbestos abatement contractor and the cost thereof included in the Lump Sum price for abatement work.



In leased spaces, arrangements for water supplies and electricity must be made with the landlord. However, all such arrangements must be made through and are subject to approval of the Department of Design and Construction. Utilities will be provided at no cost to the asbestos abatement contractor. However, it is the asbestos abatement contractor's (or the General contractor's) responsibility to furnish and install a suitable distribution system to the Work Area. This system will be provided at no cost to the City.

A dedicated power supply for the negative pressure ventilating units shall be utilized. The negative air equipment shall be on a ground fault circuit interrupter (GFCI) protected circuit separate from the remainder of the work area temporary power circuits.

- E. Asbestos abatement contractor shall shut down and lock out all electric power to all work areas except for electrical equipment that must remain in service. Safe temporary power and lighting shall be provided in accordance with all applicable codes. Existing light sources (e.g., house lights) shall not be utilized. All power to work areas shall be brought in from outside the area through ground-fault circuit interrupter at the source.
 - 1. If electrical circuits, machinery, and other electrical systems in or passing through the work area must stay in operation due to health and safety requirements, the following precautions must be taken:
 - a. All unprotected cables, except low-voltage (less than 24 volts) communication and control system cables, panel boxes of cables and joints in live conduit that run through the work area shall be covered with three (3) independent layers of six (6) mil fire retardant polyethylene. Each layer shall be individually duct taped and sealed. All three (3) layers of polyethylene sheeting shall be left in place until satisfactory clearance air sampling results have been obtained.
 - b. Any energized circuits remaining in the work area shall be posted with a minimum two (2) inch high lettering warning sign which reads: DANGER LIVE ELECTRICAL - KEEP CLEAR. A sign shall be placed on all live covered barriers at a maximum of ten (10) foot intervals. These signs shall be posted in sufficient numbers to warn all persons authorized to enter the work area of the existence of the energized circuits.
 - 2. Any source of emergency lighting which is temporarily blocked as a result of work place preparation shall be replaced for the duration of the project by battery operated or temporary exit signs, exit lights, or photo luminescent path markings.



- F. Asbestos abatement contractor shall provide a separate temporary electric panel board to power asbestos abatement contractor's equipment. The Facility will designate an existing electrical source in proximity to the Work Area. Asbestos abatement contractor's licensed electrician shall provide temporary tie-in via cable, outlet boxes, junction boxes, receptacles and lights, all with ground fault interruption. At no time shall extension cords greater than 50-feet in length be allowed. All temporary electrical installation shall be in accordance with OSHA regulations. The electric shut down for power panel tie-in will be on off-hours and must be coordinated with the Facility. Asbestos abatement contractor shall provide to the City a specification and drawing outlining his power requirements at the pre-construction meeting.
- G. Additional electrical equipment (i.e., transformers, etc.), which is necessary due to the lack of existing power on the floor, shall be at the asbestos abatement contractor's expense.
- H. Asbestos abatement contractor shall provide fire protection in accordance with all State and Local fire codes.
- I. Sprinklers, standpipes, and other fire suppression systems shall remain in service and shall not be plasticized.
- J. When temporary service lines are no longer required, they shall be removed by the asbestos abatement contractor. Any parts of the permanent service lines, grounds and buildings, disturbed or damaged by the installation and/or removal of the temporary service lines, shall be restored to their original condition by asbestos abatement contractor. Senior Stationary Engineer will inspect and test all switches, controls, gauges, etc. and shall submit a list to the Construction Project Manager of any equipment damaged by the asbestos abatement contractor.
- K. Asbestos abatement contractor shall supply hot shower water necessary for use in the decontamination unit.

1.13 USE OF THE PREMISES

- A. Asbestos abatement contractor shall confine his apparatus, the storage of materials, and supplies, and the operation of his workmen to limits established by law, ordinances, and the directions of the Construction Project Manager and the Facility. All flammable or combustible materials shall be properly stored to obviate fire and in areas approved by the Facility.
- B. Asbestos abatement contractor shall assure that no exits from the building are obstructed, that appropriate safety barriers are established to prevent access, and that Work Areas are kept neat, clean, and safe.



- C. Asbestos abatement contractor shall maintain exits from the work area or alternative exits shall be established, in accordance with section 1027 of the New York City Fire Code. Exits shall be checked at the beginning and end of each work shift against blockage or impediments to exiting.
- D. If the openings of temporary structural partitions related to abatement work areas block egress, the partition shall consist of two sheets of fire retardant 6-mil plastic, prominently marked as an exit with photo luminescent paint or signage. Cutting tools (e.g., knife, razor) shall be attached to the work area side of the sheeting for use in the event that the barrier must be cut open to allow egress.
- E. All surrounding work, fixtures, soil lines, drains, water lines, gas pipes, electrical conduit, wires, utilities, duct work railings, shrubbery, landscaping, etc. which are to remain in place shall be carefully protected and, if disturbed or damaged, shall be repaired or replaced as directed by the City, at no additional cost.
- F. All routes through the building to be used by the asbestos abatement contractor shall first be approved by the Construction Project Manager and the Facility.
- G. Attention is specifically drawn to the fact that other asbestos abatement contractors, performing the work of other Contracts, may be (or are) brought upon any of the work sites of this Contract. Therefore, the asbestos abatement contractor shall not have exclusive rights to any site of his work and shall fully cooperate and coordinate his work with the work of other asbestos abatement contractors who may be on (or are on) any site of the work of this Contract. Regulated area exempted.
- H. Temporary toilet facilities must be provided by the asbestos abatement contractor on the site. Coordinate location of facilities with Construction Project Manager. No toilet facilities will be allowed in the Work Area.

1.14 PROTECTION AND DAMAGE

- A. The asbestos abatement contractor is responsible to cover all furniture and equipment that cannot be removed from Work Areas. Moveable furniture and equipment will be removed from Work Areas by asbestos abatement contractor prior to start of work and returned upon successful completion of the final air testing. At the conclusion of the work (after clearance level of air testing reaches the acceptable limit), the asbestos abatement contractor will remove all plastic covering from the walls, floors, furniture, equipment and reinstall furniture and equipment in the cleaned Work Area. The asbestos abatement contractor shall remove all shades, curtains and drapes from the Work Area, and reinstall the same following the final clean up.



- B. Prior to plasticizing, the proposed work areas shall be pre-cleaned using HEPA filtered vacuum equipment and/or wet cleaning methods. Methods that raise dust, such as sweeping or vacuuming with equipment not equipped with HEPA filters, are prohibited.
- C. Use rubber tired vehicles that use non-volatile fuels for conveying material inside building and provide temporary covering, as necessary, to protect floors.
- D. No materials or debris shall be thrown from windows or doors of the building. Building waste management system shall NOT be used to remove any asbestos waste from the building.
- E. Debris shall be removed from the work site daily. Premises shall be left neat and clean after each work shift, so that work may proceed the next regular workday without interruption. Limited bag storage may take place within the Work Area when approved by the Construction Project Manager.
- F. Protect floors and walls along removal routes from damage, wear and staining with contamination control flooring. All finished surfaces to be protected with Masonite or other rigid sheathing material.
- G. A preliminary inspection for pre-existing damage shall be conducted by asbestos abatement contractor and representative of the City before commencement of the project.

1.15 RESPIRATORY PROTECTION REQUIREMENTS

- A. Respiratory protection shall be worn by all individuals who may be exposed to asbestos fibers from the initiation of the asbestos project until all areas have successfully passed clearance air monitoring in accordance with Regulations and these Specifications.
- B. Asbestos abatement contractor shall develop and implement a written respiratory protection program with required site-specific procedures and elements. The program shall be administered by a properly trained individual. The written respiratory protection program shall include the requirements set forth in OSHA Standard 29 CFR 1910.134, at a minimum.
- C. The Asbestos abatement contractor shall provide workers with individually issued and marked respiratory equipment. Respiratory equipment shall be suitable for the asbestos exposure level(s) in the Work Area(s), as specified in OSHA Standards 26 CFR 1910.134 and 29 CFR 1926.1101, NIOSH Standard 42 CFR 84, or as more stringently specified otherwise, herein.



- D. Where respirators with disposable filter parts are employed, the asbestos abatement contractor will provide sufficient filter parts for replacement as necessary or as required by the applicable regulation.
- E. All respiratory protection shall be NIOSH approved. All respiratory protection shall be provided by asbestos abatement contractor, and used by workers in conjunction with the written respiratory protection program.
- F. Asbestos abatement contractor shall provide respirators selected by an Industrial Hygienist that meet the following requirements:

Table 1. -- Assigned Protection Factors⁵

Type of Respirator ^{1,2}	Half mask	Full facepiece	Helmet/hood
1. Air-Purifying Respirator	³ 10	50
2. Powered Air-Purifying Respirator (PAPR)	50	1,000	⁴ 25/1,000
3. Supplied-Air Respirator (SAR) or Airline Respirator			
• Demand mode	10	50
• Continuous flow mode	50	1,000	⁴ 25/1,000
• Pressure-demand or other positive-pressure mode	50	1,000
4. Self-Contained Breathing Apparatus (SCBA)			
• Demand mode	10	50	50
• Pressure-demand or other positive-pressure mode (e.g., open/closed circuit)	10,000	10,000

¹Employers may select respirators assigned for use in higher workplace concentrations of a hazardous substance for use at lower concentrations of that substance, or when required respirator use is independent of concentration.

²The assigned protection factors in Table 1 are only effective when the employer implements a continuing, effective respirator program as required by this section (29 CFR 1910.134), including training, fit testing, maintenance, and use requirements.

³This APF category includes filtering facepieces, and half masks with elastomeric facepieces.

⁴The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater to receive an APF of 1,000. This level of performance can best be demonstrated by performing a WPF or SWPF study or equivalent testing. Absent such testing, all other PAPRs and SARs with helmets/hoods are to be treated as loose-fitting facepiece respirators, and receive an APF of 25.

⁵These APFs do not apply to respirators used solely for escape. For escape respirators used in association with specific substances covered by 29 CFR 1910 subpart Z, employers must refer to the appropriate substance-specific standards in that subpart. Escape respirators for other IDLH atmospheres are specified by 29 CFR 1910.134 (d)(2)(ii).

G. Selection of high efficiency filters:

1. All high efficiency filters shall have a nominal efficiency rating of 100 (99.97-percent effective) when tested against 0.3-micrometer monodisperse diethyl-hexyl phthalate (DOP) particles.
2. Choose N-, R-, or P-series filters based upon the presence or absence of oil particles.
 - a. N-series filters shall only be used for non-oil solid and water based aerosols or fumes.



- b. R- and P-series filters shall be used when oil aerosols or fumes (i.e., lubricants, cutting fluids, glycerin, etc.) are present. The R-series filters are oil resistant and the P-series filters are oil proof.
 - c. Follow filter manufacture recommendations.
 - 3. If a vapor hazard exists, use an organic vapor cartridge in combination with the high efficiency filter.
- H. Historical airborne fiber level data may serve as the basis for selection of the level of respiratory protection to be used for an abatement task. Historical data provided by the asbestos abatement contractor shall be based on personal air monitoring performed during work operations closely resembling the processes, type of material, control methods, work practices, and environmental conditions present at the site. Documentation of aforementioned results may be requested by the City and/or Third-Party Air Monitor for review. This will not relieve the asbestos abatement contractor from providing personal air monitoring to determine the time-weighted average (TWA) for the work under contract. The TWA shall be determined in accordance with 29 CFR 1926.1101.
- I. At no time during actual removal operations shall half-mask air purifying respirators be allowed unless a full 8-hour TWA and excursion limit have been conducted, and reviewed by the Construction Project Manager. If the TWA and excursion limit have not been conducted, a Supplied-Air Respirator (SAR) or Airline Respirator or Self-Contained Breathing Apparatus (SCBA) must be used. Use of single use dust respirators is prohibited for the above respiratory protection.
- J. Workers shall be provided with personally issued and individually marked respirators. Respirators shall not be marked with any equipment that will alter the fit of the respirator in any way. Only waterproof identification markers shall be used.
- K. Asbestos abatement contractor shall ensure that the workers are qualitatively or quantitatively fit tested by an Industrial Hygienist initially and every 12 months thereafter with the type of respirator he/she will be using.
- L. Whenever the respirator design permits, workers shall perform the positive and negative air pressure fit test each time a respirator is worn. Powered air-purifying respirators shall be tested for adequate flow as specified by the manufacturer.
- M. No facial hairs (beards) shall be permitted to be worn when wearing respiratory protection that requires a mask-to-face seal.
- N. If a worker wears glasses, a spectacle kit to fit their respirator shall be provided by the asbestos abatement contractor at the asbestos abatement contractor's expense.



- O. Respiratory protection maintenance and decontamination procedures shall meet the following requirements:
 - 1. Respiratory protection shall be inspected and decontaminated on a daily basis in accordance with OSHA 29 CFR 1910.134 (b); and
 - 2. High efficiency filters for negative pressure respirators shall be changed after each shower; and
 - 3. Respiratory protection shall be the last piece of worker protection equipment to be removed. Workers must wear respirators in the shower when going through decontamination procedures as stated in Section 3.03 and/or 3.04.
 - 4. Airline respirators with high efficiency filtered disconnect shall be disconnected in the equipment room and worn into the shower. Powered air-purifying respirator face pieces shall be worn into the shower. Filtered/power pack assemblies shall be decontaminated in accordance with manufacturers recommendations; and
 - 5. Respirators shall be stored in a dry place and in such a manner that the face-piece and exhalation valves are not distorted; and
 - 6. Organic solvents shall not be used for washing of respirators.
- P. Authorized visitors shall be provided with suitable respirators and instruction on the proper use of respirators whenever entering the Work Area. Qualitative fit test shall be done to ensure proper fit of respirator.

1.16 PROTECTIVE CLOTHING

- A. Provide worker protection as required by the most stringent OSHA and/or EPA standards applicable to the work. Provide to all workers, foremen, superintendents, authorized visitors and inspectors, protective disposable clothing consisting of full body coveralls, head covers, gloves and 18-inch high boot type covers or reusable footwear.
- B. In addition to personal protective equipment for workers, the asbestos abatement contractor shall make available at each worksite at least four (4) additional uniforms and required respiratory equipment each day for personnel who are authorized to inspect the work site. He/she shall also provide, for the duration of the work at any site involving a decontamination unit for worksite access, a lockable storage locker for use by the Construction Project Manager. In addition to respiratory masks for workers, the asbestos abatement contractor must have on hand at the beginning of each work day, at least four (4) masks each with three sets of fresh filters, for use by personnel who are authorized to inspect the worksite and



are medically qualified to don a respirator. The asbestos abatement contractor shall check for proper fit of the respirators of all City personnel authorized to enter the Work Area.

- C. Asbestos handlers involved in tent procedures shall wear two (2) disposable suits, including gloves, hood and footwear, and appropriate respiratory equipment. All street clothes shall be removed and stored in a clean room within the work site. The double layer personal protective equipment shall be used for installation of the tent and throughout the procedure, if a decontamination unit (with shower and clean room) is contiguous to the Work Area, only one (1) layer of disposable personal protective equipment shall be required; in this case, prior to exiting the tent the worker shall HEPA vacuum and wet clean the disposable suit.
- D. The outer disposable suit (if 2 suits are worn) shall be removed and remain in the tent upon exiting. Following the tent disposal and work site clean up the workers shall immediately proceed to a shower at the work site. The inner disposal unit and respirator shall be removed in the shower after appropriate wetting. The disposal clothing shall be disposed of as asbestos-containing waste material. The workers shall then fully and vigorously shower with supplied liquid bath soap, shampoo, and clean dry towels.
- E. Coveralls: provide disposable full-body coveralls and disposable head covers. Require that they be worn by all workers in the Work Area. Provide a sufficient number for all required changes for all workers in the Work Area.
- F. Boots: provide work boots with non-skid soles, and where required by OSHA, foot protection, for all workers. Provide boots at no cost to workers. Paint uppers of all boots yellow with waterproof enamel. Do not allow boots to be removed from the Work Area for any reason after being contaminated with ACM and/or dust.
- G. Hard Hats: provide hard hats as required by OSHA for all workers, and provide a minimum of four spares for Inspectors, visitors, etc. Label all hats with same warning label as used on disposal bags. Require hard hats to be worn at all times that work is in progress that may cause potential head injury. Provide hard hats of the type with polyethylene strap suspension. Require hats to remain in the Work Area throughout the work. Thoroughly clean and decontaminate and bag hard hats prior to removing them from the Work Area at the end of the work.
- H. Goggles: provide eye protection (goggles) as required by OSHA for all workers involved in any activity that may potentially cause eye injury. Require them to be worn at all times during these activities. Thoroughly clean and decontaminate goggles before removing them from the Work Area.



- I. Gloves: provide work gloves to all workers, of the type dictated by the Work and OSHA Standards. Do not remove gloves from the Work Area. Dispose of as asbestos contaminated waste at the end of the work. Gloves shall be worn at all times, except during Work Area Preparation activities that do not disturb ACM.
- J. Reusable footwear, hard hats and eye protection devices shall be left in the contaminated Equipment Room until the end of the Asbestos Abatement Work.
- K. Disposable protective clothing shall be discarded and disposed of as asbestos waste every time the wearer exits from the workspace to the outside through the decontamination facility.
- L. Adequate supplies of disposable coveralls, head covers and foot covers shall be maintained by the asbestos abatement contractor for authorized representatives who may inspect the Work Area.

1.17 AIR MONITORING - ASBESTOS ABATEMENT CONTRACTOR

- A. Asbestos abatement contractor shall employ a qualified industrial hygiene firm to conduct OSHA personal exposure monitoring air samples in accordance with OSHA Regulations, 1926.1101 (Asbestos Standards for Construction) to establish representative full shift monitoring data, per task, to determine respiratory protection. The asbestos abatement contractor may submit representative Personal exposure monitoring data for a project of similar size and complexity in lieu of performing monitoring in accordance with OSHA 29CFR 1926.1101.
- B. The asbestos abatement contractor shall ensure that a qualified industrial hygiene laboratory for OSHA personal exposure monitoring is utilized. Such laboratory shall be a current proficient participant in the American Industrial Hygiene Association (AIHA) PAT Program. The laboratory shall be accredited by the AIHA and New York State Department of Health Environmental Laboratory Approval Program (ELAP).
- C. Sampling and analysis methods shall be per NIOSH 7400A.
- D. Test Reports:
 - 1. Promptly process and distribute one copy of the test results, to the Commissioner via email.
 - 2. Prompt reports are necessary so that if required, modifications to work methods and/or practices may be implemented as soon as possible.
 - 3. Asbestos abatement contractor shall post the personal exposure monitoring results at the jobsite within 24 hours of receipt of the results.



- E. Competent person shall conduct inspections and provide written reports daily. Inspections will include checking the standard operating procedures, engineering control systems, respiratory protection and decontamination systems, packaging and disposal of asbestos waste, and any other aspects of the project which may affect the health and safety of the people and environment.
- F. All costs for required the asbestos abatement contractor's air monitoring shall be borne by the asbestos abatement contractor.
- G. The City reserves the right to conduct air and surface dust sampling in conjunction with and separate from the Third-Party Air Monitor for the purposes of Quality Assurance.

1.18 THIRD PARTY MONITORING AND LABORATORY

- A. The NYCDDC, at its own expense, will employ the services of an independent Third Party Air Monitoring Firm and Laboratory. The Third Party Air Monitor will perform air sampling activities and project monitoring at the Work Site.
- B. The Laboratory will perform analysis of air samples utilizing Phase Contrast Microscopy (PCM) and/or Transmission Electron Microscopy (TEM). This laboratory shall meet the standards stated in Paragraph 1.17. B.
- C. Observations will include, but not be limited to, checking the standard operating procedures, engineering control systems, respiratory protection, decontamination systems, packaging and disposal of asbestos waste, and any other aspects of the project that may affect the health and safety of the environment, Asbestos abatement contractor, and/or facility occupants.
- D. The Third Party Air Monitoring Firm and the designated Project Monitor shall have access to all areas of the asbestos removal project at all times and shall continuously inspect and monitor the performance of the asbestos abatement contractor to verify that said performance complies with this Specification. The Third-Party Air Monitor shall be on site throughout the entire abatement operation.
- E. The NYCDDC will be responsible for costs incurred with the Third Party Air Monitoring Firm and laboratory work. Any subsequent additional testing required due to limits exceeded during initial testing shall be paid for by the Asbestos abatement contractor.
- F. At a minimum, air sampling shall be conducted in accordance with the following schedule:



Abatement Activity	Pre-Abatement	During Abatement	Post- Abatement
Equal to or greater than 10,000 square feet or 10,000 linear feet of ACM	PCM	PCM	TEM
Less than 10,000 square feet or 10,000 linear feet of ACM	PCM	PCM	PCM

Note: TEM is acceptable wherever PCM is required.

- G. The number of air samples required per stage of abatement and size of abatement project is listed in the table below:

		Pre-Abatement	During Abatement	Post Abatement
Large Asbestos Projects				
1.	Full Containment	10	5	10
2.	Glovebag inside Tent	5 ^a	5 ^a	5 ^a
3.	Exterior Foam and Vertical Surfaces	-	5 ^c	5 ^d
4.	Interior Foam	10	5 ^c	10 ^d
Small Asbestos Projects				
1.	Full Containment	6	3	6
2.	Glovebag inside Tent	3 ^b	3 ^b	3 ^b
3.	Tent	3 ^b	3 ^b	3 ^b
4.	Exterior Foam and Vertical Surfaces	-	3 ^c	3 ^d
5.	Interior Foam	6	3 ^c	6 ^d
Minor Projects				
1.	Glovebag inside Tent	-	-	1 ^d
2.	Tent	-	-	1 ^d
3.	Exterior Foam and Vertical Surfaces	-	-	1 ^d
4.	Interior Foam	-	-	1 ^d

^aif more than three (3) tents then two (2) samples required per enclosure.

^bif more than three (3) tents then one (1) sample required per enclosure.

^csamples shall be taken within the work area(s).

^darea sampling is required only if:

- visible emissions are detected during the project
- during-abatement area sampling results exceeded 0.01 f/cc or the pre-abatement area sampling result(s) for interior projects where applicable.
- work area to be reoccupied is an interior space at a school, healthcare, or daycare facility.

- H. Prior to commencement of abatement activities, the Third Party Air Monitoring Firm will collect a minimum number of area samples inside each homogeneous work area.

1. Samples will be taken during normal occupancy activities and circumstances at the work site.



2. Samplers shall be located within the proposed work area and at all proposed isolation barrier locations.
 3. Samples shall be analyzed using PCM.
 4. The number of samples to be collected will be determined by the size of the project and the abatement methods to be utilized.
- I. Frequency and duration of the air sampling during abatement shall be representative of the actual conditions during the abatement. The size of the asbestos project will be a factor in the number of samples required to monitor the abatement activities. The following minimum schedule of samples shall be required daily.
1. For large asbestos projects employing full containment, area air sampling shall be performed at the following locations:
 - a. Two area samples outside the work area in uncontaminated areas of the building, remote from the decontamination facilities.
 - (1) Primary location selection shall be within 10 feet of isolation barriers.
 - (2) Where negative ventilation exhaust runs through uncontaminated building areas, one of the area samples will be required in these areas to monitor any potential fiber release.
 - (3) Where exhaust tubes have been grouped together in banks of up to five (5) tubes, with each tube exhausting separately and the bank of tubes terminating together at the same controlled area, one area air sample shall be taken.
 - b. One area sample within the uncontaminated entrance to each decontamination enclosure system.
 - c. Where adjacent non-work areas do not exist, an exterior area sample shall be taken.
 - d. One area sample within 5 feet of the unobstructed exhaust from a negative pressure ventilation system exhausting indoors but not within a duct.
 - e. One area sample outside, but within 25 feet of, the building or structure, if the entire building or structure is the work area.



2. For large asbestos projects involving interior foam method, area air sampling shall be performed at the following sampling locations:
 - a. One area sample taken outside the work area within 10 feet of isolation barriers.
 - b. One area sample taken within the uncontaminated entrance to each worker decontamination and waste decontamination enclosure system.
 - c. One area sample within 5 feet of the unobstructed exhaust from a negative pressure ventilation system exhausting indoors but not within a duct, if applicable.
 - d. Three area samples inside the work area.
 - e. One area sample where the negative ventilation exhaust ducting runs through uncontaminated building areas, if applicable.
3. For large asbestos projects employing the glovebag procedure within a tent, a minimum of five continuous air samples shall be taken concurrently with the abatement for each work area, unless there are more than three enclosures, in which case two area samples per enclosure are required.
 - a. Four area samples taken outside the work area within ten feet of tent enclosure(s).
 - b. One area sample taken within the uncontaminated entrance to each worker and waste decontamination enclosure system.
 - c. One area sample within five feet of the unobstructed exhaust from a negative pressure ventilation system exhausting indoors, but not within a duct, if applicable.
 - d. One area sample where negative ventilation exhaust ducting runs through uncontaminated building areas, if applicable.
4. For large asbestos projects involving exterior foam method or removal of ACM from vertical surfaces, a minimum of five continuous area samples shall be taken concurrently with the abatement for each work area using the following minimum requirements:
 - a. Three area samples inside the work area and remote from the decontamination systems.



- b. One area sample within the uncontaminated entrance to each worker and waste decontamination enclosure system.
 - c. One area sample outside the work area within 25 feet of the building or structure, if the entire building or structure is the work area.
 - d. One area sample inside the building or structure at the egress point to the work area, if applicable.
- 5. For small asbestos projects employing full containment, a minimum of three continuous area samples shall be taken concurrently with the abatement for each work area at the following locations:
 - a. Two area samples taken outside the work area within ten feet of the isolation barriers.
 - b. One area sample within the uncontaminated entrance to each worker or waste decontamination enclosure system.
 - c. One area sample within five feet of the unobstructed exhaust from a negative pressure ventilation system exhausting indoors, but not within a duct, if applicable.
 - d. One area sample where negative ventilation exhaust ducting runs through an uncontaminated building area, if applicable.
- 6. Tent Procedures:

For projects involving more than 25 linear feet or 10 square feet, a minimum of three continuous samples shall be taken concurrently throughout abatement.
- J. Post-abatement clearance air monitoring for projects not solely employing glove-bag procedures shall include a minimum number of area samples inside each homogeneous work area and outside each homogeneous work area (five samples inside/five samples outside for Large Projects and three samples inside/three samples outside for Small Projects). In addition to the five sample inside/five sample outside minimum for Large Projects, one additional representative area sample shall be collected inside and outside the work area for every 5,000 square feet above 25,000 square feet of floor space where ACM has been abated.
- K. Post-abatement clearance air monitoring for Small Projects solely employing glove-bag procedures is not required unless one or more of the following events occurs. In such cases, post-abatement clearance air monitoring procedures shall be followed. The events requiring post-abatement clearance air monitoring are:
 - 1. The integrity of the glove-bag was compromised,



2. Visible emissions are detected outside the glove-bag, and/or
 3. Ambient levels exceed 0.01 f/cc during abatement.
- L. Monitoring requirements for other than post-abatement clearance air monitoring are as follows:
1. The sampling zone for indoor air samples shall be representative of the building occupants' breathing zone.
 2. If possible, outdoor ambient and baseline samplers should be placed about 6 feet above the ground surface in reasonable proximity to the building and away from obstructions and drafts that may unduly affect airflow.
 3. For outdoor samples, if access to electricity and concerns about security dictate a rooftop site, locations near vents and other structures on the roof that would unduly affect airflow shall be avoided.
 4. Air sampling equipment shall not be placed in corners of rooms or near obstructions such as furniture.
 5. Samples shall have a chain of custody record.
- M. Post-abatement clearance air monitoring requirements are as follows:
1. Sampling shall not begin until at least one hour after wet cleaning has been completed and no visible pools of water or condensation remain.
 2. Samplers shall be placed at random around the work area. If the work area contains the number of rooms equivalent to the number of required samples based on floor area, a sampler shall be placed in each room. When the number of rooms is greater than the required number of samples, a representative sample of rooms shall be selected.
 3. The representative samplers placed outside the work area but within the building shall be located to avoid any air that might escape through the isolation barriers and shall be approximately 50 feet from the entrance to the work area, and 25 feet from the isolation barriers.
- N. The following aggressive sampling procedures shall be used within the work area during all clearance air monitoring:
1. Before starting the sampling pumps, use forced air equipment (such as a one horsepower leaf blower) to direct exhaust air against all walls, ceilings, floors, ledges and other surfaces in the work area. This pre-sampling procedure shall take at least five minutes per 1,000 square feet of floor area; then



2. Place a 20-inch diameter fan in the center of the room. Use one fan per 10,000 cubic feet of room space. Place the fan on slow speed and point it toward the ceiling.
3. Start the sampling pumps and sample for the required time or volume.
4. Turn off the pump and then the fan(s) when sampling is completed.
5. Collect a minimum number of area samples inside and outside each homogeneous work area (five inside/five outside samples for Large Projects and three inside/three outside samples for Small Projects). In addition to the minimum for Large Projects, one representative area samples shall be collected inside and outside the work area for every 5,000 square feet above 25,000 square feet of floor space where ACM has been abated.

O. For post-abatement monitoring, area samples shall conform to the following schedule:

Area Samples for Analysis by	Minimum Volume	Flow Rate
PCM	1,800 liters	5 to 15 liters/minute
TEM	1,250 liters	1 to 10 liters/minute

1. Each homogeneous work area that does not meet the clearance criteria shall be thoroughly re-cleaned using wet methods, with the negative pressure ventilation system in operation. New samples shall be collected in the work area as described above. The process shall be repeated until the work site meets the clearance criteria.
2. For an asbestos project with more than one homogeneous work area, the release criterion shall be applied independently to each work area.
3. Should airborne fiber concentrations exceed the clearance criteria, the asbestos abatement contractor shall re-clean the work area utilizing wet wiping and HEPA-vacuuming techniques. Following completion of re-cleaning activities, the Third-Party Air Monitor will perform an observation of the Work Area. If the Third-Party Air Monitor determines that the work was performed in accordance with the specifications, the appropriate settling period will be observed and additional air sampling will be performed.
4. All costs resulting from additional air tests and observations shall be borne by the asbestos abatement contractor. These costs may include, but are not limited to, labor, analysis fees, materials, and expenses.



5. After the area has been found to be in compliance, the asbestos abatement contractor may remove Isolation Barriers and perform final cleaning as specified.

P. Clearance and/or Re-occupancy Criteria:

1. The clearance criteria shall be applied to each homogeneous work area independently.
2. For PCM analysis, the clearance air monitoring shall be considered satisfactory when each of the 5 inside/5 outside samples for Large Projects and/or 3 inside/3 outside samples for Small Projects is less than or equal to 0.01 f/cc or the background concentrations, whichever is greater.
3. For TEM analysis, the clearance air monitoring shall be considered satisfactory when the requirements stated in 40 CFR Part 763, Subpart E, Appendix A, Section IV are met.
4. As soon as the air monitoring tests are completed and analyzed, the Third-Party Air Monitor will send the results of such tests to the City and notify the Asbestos abatement contractor.
5. The asbestos abatement contractor shall initiate the appropriate closeout process in DEP ARTS within 24 hours of the Re-occupancy letter being issued by the Third-Party Air Monitoring Firm. This will allow the Third-Party Air Monitoring Firm to complete and submit the ACP-15 forms for each specific work area.
6. The asbestos abatement contractor shall provide the ACP-20 and ACP-21 forms to the general contractor within 48 hours of receipt by DEP.

1.19 TAMPERING WITH TEST EQUIPMENT

All parties to this Contract are hereby notified that any tampering with testing equipment will be considered an attempt at falsifying reports and records to federal and state agencies and each offense will be prosecuted under applicable state and federal criminal codes to the fullest extent possible.

1.20 GUARANTEE

- A. Work performed in compliance with this Contract shall be guaranteed for a period of one year from the date the completed work is accepted by the City.
- B. The asbestos abatement contractor shall not be held liable for the guarantee where the repair required under the guarantee is a result of obvious abuse or vandalism, as determined by the Commissioner.



- C. The City will notify the asbestos abatement contractor in writing regarding defects in work under the guarantee.

PART 2 – PRODUCTS

2.01 MATERIAL HANDLING

- A. Deliver all materials to the job site in their manufacturer's original container, with the manufacturer's label intact and legible.
 - 1. Maintain packaged materials with seals unbroken and labels intact until time of use.
 - 2. Store all materials on pallets, away from any damp and/or wet surface. Cover materials in order to prevent damage and/or contamination.
 - 3. Promptly remove damaged materials and unsuitable items from the job site, and promptly replace with material meeting the specified requirements, at no additional cost to the City.
- B. The Construction Project Manager may reject as non-complying such material and products that do not bear identification satisfactory to the Construction Project Manager as to manufacturer, grade, quality and other pertinent information.

2.02 MATERIALS

- A. Wetting agents: (Surfactant) shall consist of resin materials in a water base, which have been tested to ensure materials are non-toxic and non-hazardous. Surfactants shall be installed according to the manufacturer's written instructions.
- B. Encapsulants: Liquid material which can be applied to asbestos-containing material which temporarily controls the possible release of asbestos fibers from the material or surface either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant). A thin coat of lockdown encapsulant shall be applied to all surfaces in the work area which were not the subject of removal or abatement, including the cleaned layer of the surface barriers, but excepting sprinklers, standpipes, and other active elements of the fire suppression system.
- C. During abatement activities, replacement materials shall be stored outside the work area in a manner to prevent contamination. Materials required for the asbestos project (i.e., plastic sheeting, replacement filters, duct tape, etc.) shall be stored to prevent damage or contamination.



- D. Framing Materials and Doors: As required to construct temporary decontamination facilities and isolation barriers. Lumber shall be high grade, new, finished one side and fire retardant.
- E. Fire Retardant Polyethylene Sheeting: minimum uniform thickness of 6-mil. Provide largest size possible to minimize seams. All materials used in the construction of temporary enclosures shall be noncombustible or fire-retardant in accordance with NFPA 701 and 255.
- F. Fire Retardant Reinforced Polyethylene Sheeting: For covering floor of decontamination units, provide translucent, nylon reinforced or woven polyethylene laminated, fire retardant polyethylene sheeting. Provide largest size possible to minimize seams, minimum uniform thickness 6-mil. All materials used in the construction of temporary enclosures shall be noncombustible or fire-retardant in accordance with NFPA 701 and 255.
- G. Drums: Asbestos-transporting drums, sealable and clearly marked with warning labels as required by OSHA and EPA.
- H. Polyethylene Disposal Bags: Asbestos disposal bags, minimum of fire retardant 6-mil thick. Bags shall be clearly marked with warning labels as required by OSHA and EPA.
- I. Signs: Asbestos warning signs for posting at perimeter of Work Area, as required by OSHA and EPA.
- J. Waste Container Bag Liners and Flexible Trailer Trays: One piece leak-resistant flexible tray with absorbent pad.
- K. Tape: Provide tape which is of high quality with an adhesive that is formulated to aggressively stick to sheet polyethylene.
- L. Spray Adhesive: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.
- M. Flexible Duct: Spiral reinforced flex duct for air filtration devices.
- N. Protective Clothing: Workers shall be provided with sufficient sets of properly fitting, full-body, disposable coveralls, head covers, gloves, and 18-inch high boot-type foot covers. Protective clothing shall conform to OSHA Standard 29 CFR 1926.1101.
- O. Surfactants, strippers, sealers, or any other chemicals used shall be non-carcinogenic and non-toxic.



- P. Materials used in the construction of temporary enclosures shall be noncombustible or fire-retardant in accordance with NFPA 701 and 255.

2.03 TOOLS AND EQUIPMENT

- A. Air Filtration Device (AFD): AFDs shall be equipped with High Efficiency Particulate Air (HEPA) filtration systems and shall be approved by and listed with Underwriter's Laboratory.
- B. Scaffolding: All scaffolding shall be designed and constructed in accordance with OSHA (29 CFR 1926/1910), New York City Building Code, and any other applicable federal, state and local government regulations. Whenever there is a conflict or overlap of the above references the most stringent provisions are applicable. All scaffolding and components shall be capable of supporting without failure a minimum of four times the maximum intended load, plus an allowance for impact. All scaffolding and staging must be certified in writing by a Professional Engineer licensed to practice in the State of New York.
1. Equip rungs of all metal ladders, etc., with an abrasive, non-slip surface.
 2. Provide non-skid surface on all scaffold surfaces subject to foot traffic. Scaffold ends and joints shall be sealed with tape to prevent penetration of asbestos fibers.
- C. Transportation Equipment: Transportation Equipment, as required, shall be suitable for loading, temporary storage, transit and unloading of asbestos contaminated waste without exposure to persons or property. Any temporary storage containers positioned outside the building for temporary storage shall be metal, closed and locked.
- D. Vacuum Equipment: All vacuum equipment utilized in the Work Area shall utilize HEPA filtration systems.
- E. Vacuum Attachments: Soft Brush Attachment, Asbestos Scraper Tool, Drill Dust Control Kit.
- F. Electric Sprayer: An electric airless sprayer suitable for application of encapsulating material and shall be approved by and listed with Underwriters Laboratory.
- G. Water Sprayer: The water sprayer shall be an airless or other low-pressure sprayer for amended water application.
- H. Water Atomizer: Powered air-misting device equipped with a ground fault interrupter and equipped to operate continuously.



- I. Brushes: All brushes shall have nylon bristles. Wire brushes are excluded from use due to their potential to shred asbestos fibers into small, fine fibers.
- J. Power tools used to drill, cut into, or otherwise disturb ACM shall be manufacturer-equipped with HEPA filtered local exhaust ventilation. Abrasive removal methods, including the use of beadblasters, are prohibited.
- K. Other Tools and Equipment: Asbestos abatement contractor shall provide other suitable tools for the stripping, removal, encapsulation, and disposal activities including but not limited to: hand-held scrapers, sponges, rounded-edge shovels, brooms, and carts.
- L. Fans and Leaf Blower: Provide Leaf Blower (one leaf blower per floor) and one 20-inch diameter fans for each 10,000 cubic feet of Work Area volume to be used for aggressive sampling technique for clearance air testing.
- M. Fire Extinguishers: At least one fire extinguisher with a minimum rating 2-A:10-B:C shall be required for each work place. In the case of large asbestos projects, at least two such fire extinguishers shall be required.
- N. First Aid Kits: Asbestos abatement contractor shall maintain adequately stocked first aid kits in the clean rooms of the decontamination units and within Work Areas. The first aid kit shall be approved by a licensed physician for the work to be performed under this Contract.
- O. Water Service:
 - 1. Temporary Water Service Connection: All connections to the Facilities water system shall include back flow protection. Valves shall be temperature and pressure rated for operation of the temperature and pressures encountered. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping, and equipment. Leaking or dripping fittings/valves shall be repaired and or replaced as required.
 - 2. Water Hoses: Employ new heavy-duty abrasion-resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water into each Work Area and to each Decontamination Enclosure Unit. Provide fittings as required for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment.
 - 3. Water Heater: Provide UL rated 40-gallon electric water heaters to supply hot water for Personal Decontamination Enclosure System Shower. Activate from 30 Amp Circuit breakers located within the Decontamination Enclosure sub panel. Provide relief valve compatible with water heater



operations, pipe relief valve down to drip pan at floor level with type 'L' copper piping. Drip pans shall be 6-inch deep and securely fastened to water heater. Wiring of the water heater shall comply with NEMA, NECA, and UL standards.

P. Electrical Service:

1. General: Comply with applicable NEMA, NEC and UL standards and governing regulations for materials and layout of temporary electric service.
2. Temporary Power: Provide service to decontamination unit sub panel with minimum 60 AMP, two pole circuit breaker or fused disconnect connected to the building's main distribution panel. Sub panel and disconnect shall be sized and equipped to accommodate all electrical equipment required for completion of the work.
3. Voltage Differences: Provide identification warning signs at power outlets that are other than 110-120 volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 volt plugs into higher voltage outlets. Dry type transformers shall be provided where required to provide voltages necessary for work operations.
4. Ground Fault Protection: Equip all circuits for any purpose entering Work Area with ground fault circuit interrupters (GFCI). Locate the GFCIs outside the Work Area so that all circuits are protected prior to entry to Work Area. Provide circuit breaker type ground fault circuit interrupters (GFCI) equipped with test button and reset switch for all circuits to be used for any purpose in Work Area, decontamination units, exterior, or as otherwise required by NECA, OSHA or other authority.
5. Power Distribution System: Provide circuits of adequate size and proper characteristics for each use. In general run wiring overhead, and rise vertically where wiring will be least subject to damage from operations.
6. Temporary Wiring: In the Work Area shall be type UF non-metallic sheathed cable located overhead and exposed for surveillance. Provide liquid tight enclosures or boxes for all wiring devices. Do not wire temporary lighting with plain, exposed (insulated) electrical conductors.
7. Electrical Power Cords: Use only grounded extension cords; use hard service cords where exposed to traffic and abrasion. Use single lengths of cords only.
8. Temporary Lighting: All lighting within the Work Area shall be liquid and moisture proof and designed for the use intended.



- a. Provide sufficient temporary lighting to ensure proper workmanship everywhere; by combined use of daylight, general lighting, and portable plug-in task lighting.
 - b. Provide lighting in the Decontamination Unit as required to supply a minimum 50-foot candle light level.
9. If electrical circuits, machinery, and other electrical systems in or passing through the work area must stay in operation due to health and safety requirements, the following precautions must be taken:
- a. All unprotected cables, except low-voltage (less than 24 volts) communication and control system cables, panel boxes of cables and joints in live conduit that run through the work area shall be covered with three (3) independent layers of six (6) mil fire retardant polyethylene. Each layer shall be individually duct taped and sealed. All three (3) layers of polyethylene sheeting shall be left in place until satisfactory clearance air sampling results have been obtained.

2.04 CLEANING

- A. Throughout the construction period, the asbestos abatement contractor shall maintain the building as described in this Section.
1. The asbestos abatement contractor shall prevent building areas other than the Work Area from becoming contaminated with asbestos-containing dust or debris. Should areas outside the Work Area become contaminated with asbestos-containing dust or debris as a consequence of the asbestos abatement contractor's work practices, the asbestos abatement contractor shall be responsible for cleaning these areas in accordance with the procedures appended in Title 15, Chapter 1 of RCNY and NYSDOL ICR56. All costs incurred in cleaning or otherwise decontaminating non-Work Areas and the contents thereof shall be borne by the asbestos abatement contractor at no additional cost to the City.
 2. The asbestos abatement contractor shall provide to all personnel and laborers the required equipment and materials needed to maintain the specified standard of cleanliness.
- B. General
1. Waste water from asbestos removal operations, including shower water, may be discharged into the public sewer system only after approved filtration is on operation to remove asbestos fibers.



2. Asbestos wastes shall be double bagged in six mil fire retardant polyethylene bags approved for ACM disposal and shall be properly labeled and handled before disposal.
3. All waste generated shall be bagged, wrapped or containerized immediately upon removal. The personal and waste decontamination enclosure systems and floor and scaffold surfaces shall be HEPA vacuumed and wet cleaned at the end of each work shift at a minimum.
4. The asbestos abatement contractor shall use corrugated cartons or drums for disposal of asbestos-containing waste having sharp edged components (e.g., nails, screws, metal lathe and tin sheeting) that may tear polyethylene bags and sheeting. The waste within the drums or cartons must be double bagged.
5. The asbestos abatement contractor shall transport all bags of waste to disposal site in thirty gallon capacity metal or fiber drums with tight lids, or in locked steel dumpster.
6. Dumping of debris, waste or bagged waste will not be permitted.
7. The waste decontamination enclosure system shall be wet cleaned twice using wet cleaning methods upon completion of waste removal. When the worker decontamination enclosure shower room alternates as a waste container wash room, the shower room shall be washed immediately with cloths or mops saturated with a detergent solution prior to wet cleaning.
8. Excessive water accumulation or flooding in the work area shall require work to stop until the water is collected and disposed of properly.
9. ACM shall be collected utilizing rubber dust pans and rubber squeegees.
10. HEPA vacuums shall not be used on wet materials unless specifically designed for that purpose.
11. Metal shovels shall not be used within the work area.
12. Mastic solvent when used will be applied in moderation (e.g., by airless sprayer). Saturation of the concrete floor with mastic solvent must be avoided.
13. The asbestos abatement contractor shall retain all items in the storage area in an orderly arrangement allowing maximum access, not impeding traffic, and providing the required protection of all materials.



14. The asbestos abatement contractor shall not allow accumulation of scrap, debris, waste material, and other items not required for use in this work. When asbestos contaminated waste must be kept on the work site overnight or longer, it shall be double bagged and stored in accordance with New York City Department of Sanitation (DSNY) regulation Title 16 Chapter 8, and Federal, State and City laws.
15. At least twice a week (more if necessary), the asbestos abatement contractor shall completely remove all scrap, debris and waste material from the job site.
16. The asbestos abatement contractor shall provide adequate storage space for all items awaiting removal from the job site, observing all requirements for fire protection and concerns for the environment.
17. All respiratory protection equipment shall be selected from the latest NIOSH Certified Equipment list.
18. Daily and more often, if necessary, the asbestos abatement contractor shall inspect the Work Areas and adjoining spaces, and pick up all scrap, debris, and waste material. All such items shall be removed to the place designated for their storage.
19. Weekly, and more often, if necessary, the asbestos abatement contractor shall inspect all arrangements of materials stored on the site; re-stack and tidy them or otherwise service them to meet the requirements of these Specifications.
20. The asbestos abatement contractor shall maintain the site in a neat and orderly condition at all times.

PART 3 – EXECUTION

3.01 WORKER DECONTAMINATION FACILITY

A. Large Asbestos Projects:

1. Provide a worker decontamination facility in accordance with, Title 15, Chapter 1, OSHA Standard 29 CFR 1926.1101, 12NYCRR Part 56 and as specified herein. Unless approved by NYCDEP and the City, worker decontamination facilities shall be attached to the Work Areas
 - a. Structure:



- (1) Use modular systems or build using wood or metal frame studs, joists, and rafters placed at a maximum of 16 inches on-center.
 - (2) When worker decontamination unit is located outdoors, in areas with public access, or in correctional facilities, frame work shall be lined with minimum 3/8" thickness fire rated plywood sheathing. Sheathing shall be caulked or taped airtight at all joints and seams.
 - (3) Interior shall be covered with two layers of fire retardant 6-mil polyethylene sheeting, with a minimum overlap of 12 inches at seams. Seal seams airtight using tape and adhesive. The interior floor shall be covered with two (2) layers of reinforced fire-retardant polyethylene sheeting with a minimum overlap on the walls of 12 inches.
 - (4) Entrances to the decontamination unit shall be secured with lockable hinged doors. Doors shall be open at all times when abatement operations are in progress. Doors shall be louvered to allow for air movement through the decontamination units into Work Area.
- b. Curtained Doorways: A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms.
- c. Air Locks: Air locks shall consist of two curtained doorways placed a minimum of three feet apart. The curtained doorways shall consist of 3 overlapping sheets of fire retardant 6-mil polyethylene sheeting, with alternating entrances and weighted at the bottom.
- d. Decontamination Enclosure System shall be placed adjacent to the Work Area and shall consist of three totally enclosed chambers, separated from Work Area and each other by airlocks, as follows:
- (1) Equipment Room: The equipment room shall have a curtain doorway to separate it from the Work Area, and share a common airlock with the shower room. The equipment room shall be large enough to accommodate at least one worker (allowing them enough room to remove their protective clothing and footwear), and a fire retardant 6-mil disposal bag for collection of discarded clothing and equipment. The equipment room shall be utilized for the storage of equipment and tools after decontamination using a HEPA-vacuum and/or wet cleaning. A one-day supply of replacement filters, in



sealed containers, for HEPA-vacuums and negative air machines, extra tools, containers of surfactant, and other materials and equipment required for the project shall be stored here. A walk-off pan filled with water shall be placed in the Work Area just outside the equipment room for persons to clean foot coverings when leaving the Work Area. Contaminated footwear and reusable work clothing shall be stored in this room.

- (2) Shower Room: The shower room shall have two airlocks (one that separates it from the equipment room and one that separates it from the clean room). The shower room shall contain at least one shower, with hot and cold water adjustable at the tap, per six workers. Careful attention shall be given to the shower to ensure against leaking of any kind and shall contain a rigid catch basin at least six inches deep. Asbestos abatement contractor shall supply towels, shampoo and liquid soap in the shower room at all times. Shower water shall be continuously drained, collected, and filtered through a system with at least a 5-micron particle size collection capacity. A system containing a series of several filters with progressively smaller pore sizes shall be used to avoid rapid clogging of the filters by large particles. Pumps shall be installed, maintained and utilized in accordance with manufacturer's recommendations. Filtered water shall be discharged in accordance with applicable codes. Contaminated filters shall be disposed of as asbestos waste.
- (3) Clean Room: The clean room shall share a common airlock with the shower room and shall have a curtained doorway to separate it from outside non-contaminated areas. Lockers, for storage of workers' street clothing, and shelves, for storing respirators, shall be provided in this area. Clean disposable clothing, replacement filters for respirators, and clean dry towels shall be provided in the clean room. The clean room shall not be used for the storage of tools, equipment or other materials.

B. Small Asbestos Projects:

1. Provide a worker decontamination facility in accordance with, Title 15, Chapter 1, OSHA Standard 29 CFR 1926.1101, 12NYCRR Part 56 and as specified herein. Unless approved by NYCDEP and the City, worker decontamination facilities shall be attached to the Work Areas.



2. The worker decontamination enclosure system shall consist of, at a minimum, an equipment room, a shower room, and a clean room separated from each other and from the work area by curtained doorways. The equipment storage, personnel gross decontamination and removal of disposal clothing shall occur in the equipment room prior to entering the shower. All other requirements shall be the same as described above for a large asbestos project.
 3. For small asbestos projects with only one exit from the work area, the shower room may be used as a waste washroom. The clean room shall not be used for waste storage. All other requirements shall be the same as described above for a large asbestos project.
- C. Decontamination Enclosure System Utilities: Lighting, heat, and electricity shall be provided as necessary by the Asbestos abatement contractor, and as specified herein.

3.02 WASTE DECONTAMINATION FACILITY

A. Large Asbestos Project (Small Project Option)

1. Provide a worker decontamination facility in accordance with, Title 15, Chapter 1, OSHA Standard 29 CFR 1926.1101, 12NYCRR Part 56 and as specified herein. Unless approved by NYCDEP and the City, worker decontamination facilities shall be attached to the Work Areas.
 - a. Structure:
 - (1) Use modular systems or build using wood or metal frame studs, joists, and rafters placed at a maximum of 16 inches on-center.
 - (2) When worker decontamination unit is located outdoors, in areas with public access, or in correctional facilities, frame work shall be lined with minimum 3/8" thickness fire rated plywood sheathing. Sheathing shall be caulked or taped airtight at all joints and seams.
 - (3) Interior walls shall be covered with two layers of fire retardant 6-mil polyethylene sheeting, with a minimum overlap of 12 inches at seams. Seal seams airtight using tape and adhesive. The interior floor shall be covered with two (2) layers of reinforced fire-retardant polyethylene sheeting with a minimum overlap on the walls of 12 inches.



- (4) Entrances to the decontamination unit shall be secured with lockable hinged doors. Doors shall be open at all times when abatement operations are in progress. Doors shall be louvered to allow for air movement through the decontamination units into the Work Area.
 - b. Curtained Doorways: A device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms.
 - c. Air Locks: Air locks shall consist of two curtained doorways placed a minimum of three feet apart. The curtained doorways shall consist of 3 overlapping sheets of fire retardant 6-mil polyethylene sheeting, with alternating entrances and weighted at the bottom.
 - d. Decontamination Enclosure System shall be located outside the work area and attached to all locations through which ACM waste will be removed from the work area and shall consist of two totally enclosed chambers, separated from the Work Area and each other by airlocks, as follows:
 - (1) Washroom: An equipment washroom shall have two air locks (one separating the unit from the Work Area and one common air lock that separates it from the holding area). The washroom shall have facilities for washing material containers and equipment. Gross removal of dust and debris from contaminated material containers and equipment shall be accomplished in the Work Area, prior to moving to the washroom.
- B. Holding Area: A holding area shall share a common air lock with the equipment washroom and shall have a curtained doorway to outside areas. A hinged, lockable door shall be placed at the holding area entrance to prevent unauthorized access into the Work Area.
- C. Small Asbestos Project:
 - 1. The worker decontamination enclosure system shall consist of, as a minimum, an equipment room, a shower room, and a clean room separated from each other and from the work area by curtained doorways. The equipment storage, personnel gross decontamination and removal of disposal clothing shall occur in the equipment room prior to entering the shower. All other requirements shall be the same as described above for a large asbestos project.



2. For small asbestos projects with only one exit from the work area, the shower room may be used as a waste washroom. The clean room shall not be used for waste storage. All other requirements shall be the same as described above for a large asbestos project.

- D. Decontamination Enclosure System Utilities: Lighting, heat, and electricity shall be provided as necessary by the Asbestos abatement contractor, and as specified herein.

3.03 PERSONNEL ENTRANCE AND DECONTAMINATION PROCEDURES FOR REMOVAL OPERATIONS UTILIZING REMOTE DECONTAMINATION FACILITIES

- A. All individuals who enter the Work Area shall sign the entry log, located in the clean room, upon each entry and exit. The log shall be permanently bound and shall fully identify the facility, agents, asbestos abatement contractor(s), the project, each Work Area, and worker respiratory protection employed. The asbestos handler supervisor shall be responsible for the maintenance of the log during the abatement activity. The log shall be submitted to the NYC DDC within 48 hours of request.
- B. Each worker shall remove street clothes in the clean room; wear two disposable suits, including gloves, hoods and non-skid footwear; and put on a clean respirator (with new filters) before entering the Work Area.
- C. Each worker shall, before leaving the Work Area or tent, clean the outside of the respirators and outer layer of protective clothing by wet cleaning and/or HEPA-vacuuming. The outer disposable suit shall be removed in the airlock prior to proceeding to the Worker Decontamination Unit. The inner disposable suit and respirator shall be wet wiped and HEPA vacuumed thoroughly before removing and prior to aggressive shower.
- D. Following showering and drying off, each worker or authorized visitor shall proceed directly to the clean room, dress in street clothes, and exit the decontamination enclosure system immediately.

3.04 PERSONNEL ENTRANCE AND DECONTAMINATION PROCEDURES FOR REMOVAL OPERATIONS UTILIZING ATTACHED DECONTAMINATION FACILITIES

- A. All workers and authorized visitors shall enter the Work Area through the worker decontamination facility.
- B. All individuals who enter the Work Area shall sign the entry log, located in the clean room, upon each entry and exit. The log shall be permanently bound and shall identify fully the facility, agents, asbestos abatement contractor(s), the



project, each Work Area and worker respiratory protection employed. The site supervisor shall be responsible for the maintenance of the log during the abatement activity. The log shall be submitted to the NYC DDC within 48 hours of request.

- C. Each worker or authorized visitor shall, upon entering the job site, remove street clothes in the clean room and put on a clean respirator with filters, and clean protective clothing before entering the Work Area through the shower room and equipment room.
- D. Each worker or authorized visitor shall, each time he leaves the Work Area, remove gross contamination from clothing before leaving the Work Area; proceed to the equipment room and remove clothing except the respirator; still wearing the respirator, proceed to the shower room; clean the outside of the respirator with soap and water while showering; remove filters, wet them, and dispose of them in the container provided for that purpose; wash and rinse the inside of the respirator; and thoroughly shampoo and wash himself/herself.
- E. Following showering and drying off, each worker or authorized visitor shall proceed directly to the clean room, dress in street clothes, and exit the decontamination enclosure system immediately. Disposable clothing of the type worn inside the Work Area is not permitted outside the Work Area.

3.05 MAINTENANCE OF DECONTAMINATION ENCLOSURE FACILITIES AND BARRIERS

The following procedures shall be followed during abatement activities.

- A. All polyethylene barriers inside the work place and partitions constructed to isolate the Work Area from occupied areas shall be inspected by the asbestos handler supervisor at least twice per shift.
- B. Smoke tubes shall be used to test the integrity of the Work Area barriers and the decontamination enclosure systems daily before abatement activity begins and at the end of each shift.
- C. Damage and defects in the decontamination enclosure system shall be repaired immediately upon discovery. The decontamination enclosure system shall be maintained in a clean and sanitary condition at all times.
- D. At any time during the abatement activity, if visible emissions are observed, or elevated asbestos fiber counts outside the Work Area are measured, or if damage occurs to barriers, abatement shall stop. The source of the contamination shall be located, the integrity of the barriers shall be restored and extended to include the contaminated area, and visible residue shall be cleaned up using appropriate HEPA-vacuuming and wet cleaning.



- E. Inspections and observations shall be documented in the daily project log by the asbestos handler supervisor.
- F. The daily inspection to ensure that exits have been checked against exterior blockage or impediments to exiting shall be documented in the log book. If exits are found to be blocked, abatement activities shall stop until the blockage is cleared.

3.06 MODIFICATIONS TO HVAC SYSTEMS

- A. Shut down, isolate or seal, all existing HVAC units, fans, exhaust fans, perimeter convection air units, supply and/or return air ducts, etc., situated in, traversing or servicing the work zone.
- B. Seal all seams with duct tape. Wrap entire duct with a minimum of two layers of fire retardant 6-mil polyethylene sheeting. All shutdowns are to be coordinated with the Facility. Where systems must be maintained, i.e., traversing Work Areas to non-Work Areas, only supply ducts will be maintained, protect as described above. All returns must be blanked off in Work Area and adjacent areas, including floor above and below Work Area. When required Asbestos abatement contractor shall apply for a clarification from NYCDEP. The Asbestos abatement contractor shall implement the following engineering procedures:
 - 1. Maintenance of a positive pressure within the HVAC system of 0.01 inch water gauge (or greater) with respect to the ambient pressure outside the Work Area. The conditions for this system shall be maintained and be operational 24 hours per day from the initiation of Work Area preparation until successful final air clearance. Positive pressurization of HVAC system shall be applied only under the direction and control of professional engineer, or other knowledgeable licensed professional;
 - 2. The positive pressurization of the duct shall be tested, inspected and recorded both at the beginning and at the end of each shift;
 - 3. The positive pressurization shall be monitored using instrumentation which will provide a written record of pressurization and that will trigger an audible alarm, if the static pressure falls below the set value;
 - 4. The supply air fan and the supply air damper for the active positive-pressurized duct shall be placed in the manual "on" positions to prevent shutdown by fail-safe mechanisms;
 - 5. The return air fan and the return air dampers shall be shut down and locked-out;



6. All the seams of the HVAC ducts that pass through the Work Area shall be sealed;
 7. The HVAC ducts that pass through the Work Area shall be covered with two (2) layers of fire retardant 6-mil polyethylene sheeting, and all seams and edges of both layers shall be sealed airtight;
 8. The supply air fans, return air fans, and all dampers servicing the Work Area itself shall be shut down and locked-out. All openings within the Work Area of supply and return air ducts shall be sealed with 3/8-inch fire rated plywood and two layers of fire retardant 6-mil polyethylene;
 9. When abatement occurs during periods while the HVAC system is shut down an alternative method of pressurization of the duct passing through the Work Area should be employed (e.g., by low-pressure “blowers”, etc., directly coupled into the duct). Item #4 above shall be deleted and shall be replaced by the requirement to set the dampers of the HVAC duct in the manual closed positions, in order to effect pressurization.
- C. Asbestos abatement contractor to coordinate this item with the Facility and Construction Project Manager at the commencement of work. Where present HVAC systems (ducts) service an area and that air system cannot be shut down, asbestos abatement contractor shall isolate and seal the ducts, both supply and return, at the boundary of that zone.
1. To isolate, cap, or seal a duct, the asbestos abatement contractor shall remove insulation from duct (if necessary), then disconnect linkage to fold shut all fire dampers. Asbestos abatement contractor shall seal all edges and seams with caulk and duct-tape.
 2. Asbestos abatement contractor shall then cut existing duct and fold metal in and secure with approved fasteners. Asbestos abatement contractor shall caulk and duct-tape all seams and edges.
 3. All ducts shall then be completely wrapped and sealed with duct-tape and three (3) layers of reinforced polyethylene sheeting.
 4. All ducts shall be restored to original working order at the end of the project.
- D. Where present HVAC systems (ducts) service occupied areas (non-Work Areas), the Asbestos abatement contractor shall blank off the ducts.
1. To isolate or seal the return duct, the asbestos abatement contractor shall remove any insulation (if necessary) from the duct. Then disconnect linkage to fold shut all fire dampers and insert a fiberglass board within the duct. Asbestos abatement contractor shall seal all edges and seams with caulk, duct-tape and three (3) layers of reinforced polyethylene sheeting.



2. All isolation of return ducts and any other activity that requires removal of ceiling by the asbestos abatement contractor shall be conducted under controls. Work is to be coordinated with the Construction Project Manager and the Facility and is described as follows:
 - a. Work shall occur as scheduled.
 - b. Horizontal surfaces near the blanking operations shall be protected with fire retardant 6-mil polyethylene sheeting.
 - c. Plastic drapes shall be used to enclose the immediate area.
 - d. Asbestos abatement contractor to position and operate air filtration devices and HEPA-vacuums in the area to clean space after blanking operations.
 - e. All personnel involved with this work shall receive personal protection (i.e., respirators and disposable suits).
- E. Upon loss of negative pressure or electric power, all work activities in an area shall cease immediately and shall not resume until negative pressure and/or electric power has been fully restored. When a power failure or loss of negative pressure lasts, or is expected to last, longer than thirty (30) minutes, the following sequence of events shall occur.
 1. All make up air inlets shall be sealed airtight.
 2. All decontamination facilities shall be sealed airtight after evacuation of all personnel from the Work Area.
 3. All adjacent areas shall be monitored for potential fiber release upon discovery of and subsequently throughout, power failure.

3.07 LOCKOUT OF HVAC SYSTEMS, ELECTRIC POWER, AND ACTIVE BOILERS

Prior to the start of any prep work, the asbestos abatement contractor shall employ skilled tradesmen with limited asbestos licenses for the following work:

- A. Disable all ventilating systems or other systems bringing air into or exhausting air out of the Work Area. Disable system by disconnecting wires removing circuit breakers, by lockable switch or other positive means to ensure against accidental re-starting of equipment.



- B. Lock out power to the Work Area by switching off all breakers and removing them from panels or by switching and locking entire panel. Label panel with following notation: "DANGER CIRCUIT BEING WORKED ON". Give all keys to Facility.
- C. Lock out power to circuits running through Work Area whenever possible by switching off and removing breakers from panel. If circuits must remain live, the Facility shall notify asbestos abatement contractor in order that he may secure a variance from NYCDEP. The asbestos abatement contractor shall protect all conduit and wires to remain and label all active circuits at intervals not to exceed 3 feet with tags having the following notation: "DANGER LIVE ELECTROCUTION HAZARD". The asbestos abatement contractor shall label all circuits in all locations including hidden locations that may be affected by the work in a similar manner.
- D. All boilers and other equipment within the work area shall be shut down, locked out, tagged out and the burner/boiler/equipment accesses and openings shall be sealed until abatement activities are complete. If the boiler or other exhausted equipment will be subject to abatement, all breeching, stacks, columns, flues, shafts, and double-walled enclosures serving as exhausts or vents shall be segregated from the affected boiler or equipment and sealed airtight to eliminate potential chimney effects within the work area.

PART 4 – PREPARATION OF WORK AREA AND REMOVAL PROCEDURES

4.01 REMOVAL OF ASBESTOS-CONTAINING MATERIAL

A. Asbestos abatement contractor Responsibility

Asbestos abatement contractor shall be responsible for the proper removal of ACM from the Work Area using standard industry techniques. The Third-Party Air Monitor representative shall observe the Work.

1. General Requirements:

- a. Removal of ACM shall be performed using wet methods. Dry removal of ACM is prohibited.
- b. Spray ACM with amended water with sufficient frequency and quantity to enhance penetration. Sufficient time shall be allowed for amended water to penetrate the material to the substrate prior to removal. All ACM shall be thoroughly wetted while work is being conducted.
- c. Accumulation of standing water on the floor of the Work Area is prohibited.



- d. Apply removal encapsulants, when used, in accordance with the manufacturer's recommendations and guidelines.
- e. Containerize ACM immediately upon detachment from the substrate. Alternately, ACM may be dropped in to a flexible catch basin and promptly bagged. Detached ACM is not permitted to lie on the floor for any period of time. Excess air within the bag shall be removed before sealing. ACM shall not be dropped from a height of greater than 10 feet. Above 10 feet, dust free inclined chutes may be used. Maximum inclination from horizontal shall be 60-degrees for all chutes.
- f. Exits from the work area shall be maintained, or alternative exits shall be established, in accordance with section 1027 of the New York City Fire Code. Exits shall be checked at the beginning and end of each work shift against blockage or impediments to exiting.
- g. Signs clearly indicating the direction of exits shall be maintained and prominently displayed within the work area.
- h. No smoking signs shall be maintained and prominently displayed within the work place.
- i. At least one fire extinguisher with a minimum rating 2-A:10-B:C shall be required for each work place. In the case of large asbestos projects, at least two such fire extinguishers shall be required.
- j. If the containment area of an asbestos project covers the entire floor of the affected building, or an area greater than 15,000 square feet on any given floor, the installation of a negative air cut off switch or switches shall be required at a single location outside the work place, such as inside a stairwell, or at a secured location in the ground floor lobby when conditions warrant. The required switch or switches shall be installed by a licensed electrician pursuant to a permit issued by the Department of Buildings. If negative pressure ventilation equipment is used on multiple floors the cut off switch shall be able to turn off the equipment on all floors.

B. Removal of ACM Utilizing Full Containment Procedures shall be as follows:

1. Preparation Procedures:

- a. Ensure that the Third-Party Air Monitor has performed area monitoring and established a background count prior to the preparatory operations for each removal area, as applicable.



- b. Shut down, isolate, and lock out or tag heating, ventilating, and air conditioning (HVAC) systems which serve or which pass through the Work Area. Vents within the Work Area and seams in HVAC components shall be sealed with tape and two layers of fire retardant polyethylene sheeting. Filters in HVAC systems shall be removed and treated as asbestos contaminated waste.
- c. Shut down, disconnect, and lock out or tag all electric power to the Work Area so that there is no possibility of its reactivation until after clearance testing of the Work Area.
- d. Provide and install decontamination enclosure systems in accordance with Sections 3.01 and 3.02 of this Section.
- e. Remove ACM that may be disturbed by the erection of partitions using tent procedures and wet removal methods. Removal shall be limited to a one-foot wide strip running the length/height of the partition.
- f. Pre-clean and remove moveable objects from the Work Area. Pre-cleaning shall be accomplished using HEPA-vacuum and wet-cleaning techniques. Store moveable objects at a location determined by the City.
- g. Protect carpeting that will remain in the Work Area.
 - (1) Pre-clean carpeting utilizing wet-cleaning techniques.
 - (2) Install a minimum of two layers of fire retardant 6-mil reinforced polyethylene sheeting over carpeting.
 - (3) Place a rigid flooring material, minimum thickness of 3/8-inch, over polyethylene sheeting.
- h. Pre-clean all fixed objects to remain within the Work Area using HEPA-vacuum and wet-cleaning techniques.
- i. Seal fixed objects with two individual layers, minimum, of 6-mil fire retardant polyethylene sheeting.
- j. Pre-clean entire Work Area utilizing HEPA-vacuum and wet-cleaning techniques. Methods of cleaning that raise dust; such as dry sweeping or use of vacuum equipment not equipped with HEPA-filters, is prohibited.



- k. Install isolation barriers (i.e., sealing of all openings, including but not limited to windows, corridors, doorways, skylights, ducts, grills, diffusers, and other penetrations within the Work Area) using two layers of 6-mil fire retardant polyethylene sheeting and duct-tape.
- l. Construct rigid framework to support Work Area barriers.
 - (1) Framework shall be constructed using 2-inch by 4-inch wooden or metal studs placed 16 inch on center when existing walls and/or ceiling do not exist for all openings greater than 32 square feet. Framework is not required except where one dimension is one foot or less or the opening will be used as an emergency exit.
 - (2) Apply a solid construction material, minimum thickness of 3/8-inch to the Work Area side of the framing. In secure interior areas, not subject to access from the public or building occupants, an additional layer of 6-mil fire retardant polyethylene sheeting may be substituted for the rigid construction material.
 - (3) Caulk all wall, floor, ceiling, and fixture joints to form a leak tight seal.
- m. Seal floor drains, sumps, shower tubs, and other collection devices with two layers of 6-mil fire retardant plastic and fire rated plywood, as necessary, and provide a system to collect all water used by the asbestos abatement contractor. Collected water shall be passed through a water filtration system prior to being discharged into the sanitary sewer.
- n. Remove ceiling mounted objects not previously sealed that will interfere with removal operations. Mist object and surrounding ACM with amended water prior to removal to minimize fiber dispersal. Clean all moveable objects using HEPA-vacuum and wet-cleaning techniques prior to removal from the Work Area.
- o. Fiberglass insulation with intact coverings shall be protected in place during abatement activities. These materials shall be protected with two layers of 6-mil fire retardant polyethylene sheeting as isolation barriers and two additional layers of 6-mil fire retardant polyethylene sheeting serving as primary and secondary surface barriers.
- p. Install and initiate operation of Air Filtration Devices (AFD)s to provide a negative pressure and a minimum of four air changes per hour within the Work Area relative to surrounding non-Work Areas.



Do not shut down AFDs until the Work Area is released to the City following final clearance procedures. The use of HEPA-filtered vacuum to produce a negative air pressure inside the enclosure is prohibited.

- q. Maintain emergency and fire exits from the Work Area or establish alternative exits satisfactory to the local fire officials. Emergency exits and routes shall be established and clearly marked with florescent paint or other effective designations to permit easy location from anywhere within the Work Area. Cutting tools (e.g., knife, razor) shall be attached to the work area side of the sheeting for use in the event that the barrier must be cut open to allow egress. Emergency exits shall be secured to prevent access from uncontaminated areas and yet permit emergency exiting. Exits shall be checked daily against exterior blockage or impediments to exiting.
- r. Temporary lighting within the Work Area and decontamination system shall be provided as required to achieve minimum illumination levels.
- s. Hand power tools used to drill, cut into, or otherwise disturb ACM shall be manufacturer-equipped with HEPA filtered local exhaust ventilation.
- t. Prior to being plasticized, the Work Areas shall be cleaned using HEPA vacuum equipment and/or wet cleaning methods as appropriate. Methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters, shall not be used.
- u. Plasticize the area after pre-cleaning, using the following procedures.
 - (1) Cover floors with one layer of 6-mil fire retardant polyethylene sheeting, turning layer a minimum of 6 inches up wall, and seal layer to wall.
 - (2) Cover walls with one layer of 6-mil fire retardant polyethylene sheeting, overlapping wall layer a minimum of 6 inches, and seal layer to floor layer.
 - (3) Cover floors with a second layer of 6-mil fire retardant polyethylene sheeting, turning layer a minimum of 12 inches up wall, and seal layer to wall.



- (4) Cover walls with a second layer of fire retardant 6-mil polyethylene sheeting, overlapping wall layer a minimum of 12 inches, and seal layer to floor layer.
 - (5) In areas where demolition is required to access ACM, a layer of fire retardant 6-mil reinforced polyethylene sheeting shall be placed on the floor of the enclosure.
 - (6) Perform demolition required to access ACM. Debris resulting from demolition activities shall be disposed of as ACM waste as described in this Specification.
 - (7) Repeat preparation of areas accessed by demolition activities as described above.
 - v. Suspended ceiling tiles and T-grid components shall remain in place until the preparation of the Work Area below the ceiling tiles are completed and personnel and equipment decontamination enclosures have been constructed.
 - w. Scaffolds shall be provided for workers engaged in work that cannot safely be performed from the ground or other solid Work Area surface.
 - x. Means of egress shall not be obstructed by hardwall barriers.
 - y. Pre-Removal Inspections.
 - (1) Prior to removal of any ACM, the asbestos abatement contractor shall notify the Third-Party Air Monitor and request a pre-removal inspection. Posting of warning signs, building of decontamination enclosure systems, and all other preparatory steps have been taken prior to notification of the Third-Party Air Monitor.
 - (2) Asbestos abatement contractor shall correct any deficiencies observed by Third-Party Air Monitor at no additional cost to City.
 - (3) Following the Third-Party Air Monitor's approval of the Work Area preparations, removal of ACM may commence.
2. Removal of ACM Within Full Containment:
- a. Mist material with amended water. Allow sufficient time for the amended water to penetrate the material to be removed.



- b. Remove the material using hand tools such as scrapers or putty knives. Wire-mesh or wood lathe reinforcing, when present, shall be cut into manageable pieces and disposed of as ACM.
 - c. Remove any residual material from the substrate using wet cleaning methods and nylon-bristled hand brushes.
 - d. Place the removal material immediately into a properly labeled fire retardant 6-mil polyethylene bag. All material shall be properly containerized and decontaminated prior to removal from the Work Area.
 - e. Following the completion of removal of insulation, all visible residue shall be removed from the substrate.
- 3. Following Removal of ACM utilizing Full Containment Procedures:
 - a. First Cleaning:
 - (1) Remove any visible accumulation of asbestos material and debris. HEPA-vacuuming and wet cleaning shall be performed on all surfaces inside the Work Area. All sealed drums, plastic bags, and equipment used in the Work Area shall be removed from the Work Area.
 - (2) Upon request of the asbestos abatement contractor, the Third-Party Air Monitor will perform a visual inspection. Evidence of asbestos contamination identified during the inspection will necessitate further cleaning as heretofore specified.
 - (3) Remove first layer of plastic sheathing inside the Work Area. The isolation barriers and decontamination facility shall remain in place and be utilized.
 - b. Second Cleaning:
 - (1) After the first cleaning, the Work Area shall be vacated for twelve hours to allow fibers to settle.
 - (2) All objects and surfaces in the Work Area shall be HEPA - vacuumed and wet cleaned for a second cleaning.
 - (3) A thin coat of lockdown encapsulant shall be applied to all plastic covered surfaces in the Work Area.



- (4) When the encapsulant is dry, second layer of polyethylene sheeting on the walls, ceiling and floors shall be removed. Do not remove seals from doors, windows, Isolation Barriers or disconnect the negative pressure equipment.

c. Third Cleaning:

- (1) A minimum of four hours after the second cleaning, all the surfaces in the Work Area shall be HEPA-vacuumed and wet cleaned for a third cleaning.
- (2) Upon the request of the asbestos abatement contractor, the Third-Party Air Monitor will do final visual inspection for re-occupancy. Evidence of asbestos contamination identified during the inspection will necessitate further cleaning as heretofore specified.
- (3) When the Work Area passes the Third-Party Air Monitor's visual re-occupancy inspection, air sampling shall not begin until at least one hour after the completion of the third cleaning. The Third-Party Air Monitor shall perform air monitoring using aggressive testing techniques. The Third-Party Air Monitor will approve re-occupancy if the specified fiber count in the Work Area is achieved according to the Third-Party Air Monitor.
- (4) When the Work Area passes the re-occupancy test, all controls and seals established shall be removed.
- (5) The cleaned layer of the surface barriers shall be removed from walls and floors.
- (6) The isolation barriers shall remain in place throughout cleanup. Decontamination enclosure systems shall remain in place and be utilized. A thin coat of lockdown encapsulant shall be applied to all surfaces in the work area which were not the subject of removal or abatement, including the cleaned layer of the surface barriers, but excepting sprinklers, standpipes, and other active elements of the fire suppression system.

d. Final Barrier Removal:

- (1) Upon receipt of acceptable clearance testing results, polyethylene sheeting and Isolation Barriers shall be removed and disposed accordingly as asbestos-containing material.



- (2) The area surrounding the abatement work place shall be cleaned of any visible debris utilizing HEPA vacuum and wet methods.
 - e. The Third-Party Air Monitor will conduct a final visual observation. Approval must be granted prior to break down of decontamination facility and asbestos abatement contractor demobilization.
- C. Removal of ACM from Vertical Exterior Surfaces utilizing NYCDEP Title 15, Chapter 1 §1-109 Abatement from Vertical Exterior Surfaces procedures shall be as follows:

Preparation procedures: This procedure shall apply to the abatement of asbestos-containing materials from vertical exterior surfaces such as, but not limited to caulking or glazing compounds, asphaltic materials or tar, cement siding or shingles (including transite), paints, sealants coping stone caps or clay roof tiles.

- a. The entire surface to be abated and ground-level perimeter shall be considered the work area unless partitions and warning tape are used to define the work area.
- b. A restricted area shall be established using warning tape extending at least 25 feet from the affected areas of the building or to the nearest vertical obstruction or the curb.
- c. The restricted area may be entered only by certified workers or authorized visitors.
- d. Before plasticizing, the restricted area shall be inspected for ACM debris and, if necessary, pre-cleaned using HEPA vacuums and wet methods.
- e. All openings to the building or structure's interior which are within 25 feet of the affected ACM shall be closed and sealed.
- f. Scaffolding erected to access the ACM shall be constructed, maintained, and used in accordance with applicable federal, state, and city laws.
- g. Horizontal surfaces beneath the affected ACM shall be covered with two layers of fire-retardant 6-mil plastic to a width of six feet.



- h. Elevated platforms being used to access the affected ACM shall be plasticized with two layers of fire-retardant 6-mil plastic, which shall extend up from the platform to at least the height of the mid-rail on three sides, and shall be attached directly to the building just below the surfaces under abatement.
- i. The ground-level restricted area shall be cleared of all moveable objects and plasticized with two sheets of fire-retardant 6-mil plastic, which shall be extended one foot up the side of the building. The plasticized area shall be ten feet wide for every floor up to a maximum width of thirty feet, or to the curb. This plastic shall be cleaned, replaced, and disposed of as asbestos waste at the end of each shift.
- j. Sidewalk bridges in the restricted area shall be covered with two layers of fire retardant 6-mil plastic, placed over and secured to the bridge, spread across the full width, draped over the side to ground level, and extended to a width of at least thirty feet.
- k. Establish a remote decontamination unit in accordance with Section 3.01 within the restricted area.
- l. Construct all elevated work platforms a minimum of one foot below the surface to be abated.
- m. Pre-Removal Inspections
 - (1) Prior to removal of any ACM, the asbestos abatement contractor shall notify the Project Monitor and request a pre-removal inspection. Posting of warning signs, building of decontamination enclosure systems, and all other preparatory steps have been taken prior to notification of the Third-Party Air Monitor.
 - (2) Asbestos abatement contractor shall correct any deficiencies observed by Third-Party Air Monitor at no additional cost to City.
 - (3) Following the Project Monitor's approval of the Work Area preparations, removal of ACM may commence.

2. Removal of ACM Materials:

- a. Mist material with amended water. Allow sufficient time for the amended water to penetrate the material to be removed.



- b. Remove the caulk using hand tools such as knives or scrapers.
 - c. Exercise caution when removing caulking material to prevent damage to windows or skylight openings.
 - d. Remove any residual asbestos-containing caulking material from the substrate using wet cleaning methods and nylon-bristled hand brushes. The use of metal bristled brushes is prohibited.
 - e. Place the removed material immediately into a properly labeled 6-mil polyethylene bag. All material shall be properly containerized and decontaminated prior to removal from the Work Area.
 - f. Following the completion of removal of caulking, all visible residues shall be removed from the substrate.
 - g. Air sampling shall be conducted in compliance with NYC DEP Title 15 Chapter 1, §1-41 Air Sampling Schedule. This sampling shall be performed by the Third Party Air Monitoring Firm.
3. Following Removal of ACM :
- a. The stripped substrate shall be HEPA vacuumed and wet-wiped.
 - b. A visual clearance inspection shall be conducted by the asbestos handler supervisor and project monitor after the work area dries, to ensure the absence of ACM residue or debris in the work area.
 - c. After the inspection is completed, the warning tapes and barriers may be removed.
 - d. The clearance inspection shall be documented in the log and the project air sampling log.
 - e. Air monitoring shall be conducted in accordance with relevant provisions.
 - f. Asbestos abatement contractor shall request and pass a visual inspection performed by the consultant before proceeding to the next step. Documentation of passing this inspection shall be recorded in a daily logbook.
 - g. The Third-Party Air Monitor will conduct a visual observation of the Work Area to verify the absence of asbestos-containing waste materials.



- h. If the Work is accepted by the Third-Party Air Monitor based on the inspection, asbestos abatement contractor shall be notified. Conduct the following activities in accordance with the contract and all applicable laws, codes, rules and regulations:
 - (1) All waste shall be removed from the Work Area and holding areas.
 - (2) All tools and equipment are to be removed and decontaminated in the decontamination enclosure system.
- i. If the Work is not approved, the Third-Party Air Monitor will inform Asbestos abatement contractor who will then HEPA-vacuum and/or wet-clean the Work Area. The Third-Party Air Monitor will then perform a subsequent visual observation. This process will continue until the Third-Party Air Monitor accepts the Work Area as clean.
- j. Final Barrier Removal
 - (1) Upon receipt of acceptable observation results, polyethylene sheeting and barrier tape shall be removed and disposed accordingly as ACM.
 - (2) The area surrounding the abatement work place shall be cleaned of any visible debris utilizing HEPA vacuum and wet methods.
 - (3) The Third-Party Air Monitor will conduct final visual inspection. Approval must be granted prior to break down of decontamination facility and asbestos abatement contractor demobilization. Other Information: Extra time required to clean Work Areas in order to achieve clearance criteria shall not be considered grounds for an extension of time for contract completion.

4.02 MAINTENANCE OF CONTAINED WORK AREA AND DECONTAMINATION ENCLOSURE SYSTEMS

- A. Ensure that barriers are installed in a manner appropriate to the expected weather conditions during the project and for its duration. Repair damaged barriers and remedy defects immediately upon their discovery. Visually inspect barriers at the beginning and end of each work period.



- B. Visually inspect non-Work Areas and the decontamination enclosure system for water leakage. Check the floor below, ceiling and walls, and view beneath/or around the decontamination enclosure system, for signs of leakage. Perform the visual inspection a minimum of two times for each 8-hour work shift.

PART 5 – ASBESTOS WASTE MANAGEMENT

5.01 ACM WASTE REQUIREMENTS

- A. The asbestos abatement contractor and all sub-asbestos abatement contractors are specifically alerted to the illegal practice of combining asbestos-containing waste (ACW) from one project with the ACW of other projects without using the services of a permitted waste transfer station as defined by 6 NYCRR Part 360 and 364. As part of the shop drawing submittals, the asbestos abatement contractor must submit for approval the proposed method of transportation and disposal that will be utilized to manage the ACW of this Contract. If a permitted transfer station is to be used, the cost shall be included in the work. The asbestos abatement contractor must submit a waste manifest consistent with whatever approved method is utilized as part of the invoicing and payment procedures.
- B. The asbestos abatement contractor shall maintain compliance with the strictest set of regulations of Title 15, Chapter 1 of RCNY, NYC LL 70/85, NYS DOL ICR 56, USEPA, Asbestos Regulation 40 CFR Section 61.152, 29 CFR 1926.1101, 29 CFR 1910.1200 (F) of OSHA's Hazard Communication Standards, and other applicable standards.

NOTE: Any penalties incurred for failure to comply with any of the above regulations will be the sole responsibility for fines imposed due to negligence of the Asbestos abatement contractor.

- C. When presenting ACW for storage at the generation site, the asbestos abatement contractor shall:
1. Wet down ACW in a manner sufficient to prevent all visible emissions of dust into the air.
 2. Seal material in a leak tight container while wet.
 3. Keep ACW separate from any other waste.
- D. When presenting ACW for storage away from the site of generation, the Asbestos abatement contractor shall:
1. Ensure that ACW has been properly packaged as per requirements above.



2. Examine the containers of ACW to ensure that there are no breaks in the containers and that no visible dust is being released into the air.
 3. If examination reveals damage to a container of ACW the Asbestos abatement contractor or person accepting the waste shall immediately wet down the ACW and repackage it into a clean leak tight container. The subsequent repackaging shall be the financial responsibility of the Asbestos abatement contractor and occur at no extra cost to the City.
 4. Keep ACW separate from any other waste.
- E. When storing ACW – The Asbestos abatement contractor shall:
1. Ensure that the ACW has been sufficiently wetted down in tight containers.
 2. Re-wet and repackage any damaged containers.
 3. Maintain at storage site an adequate supply of spare leak tight containers.
 4. Maintain at storage site an adequate supply of amended water.
 5. Keep ACW separate from any other waste.
 6. Keep ACW in a secured, enclosed, and locked container.
 7. If the asbestos abatement contractor has intention of sorting a quantity of ACW greater than or equal to 50 cubic yards, the Asbestos abatement contractor shall:
 - a. Submit a written request and receive written approval from the City.
- F. When presenting for transport, the asbestos abatement contractor shall:
1. Ensure that ACW has been sufficiently wetted down.
 2. Examine the integrity of the container's airtight seal.
 3. Re-wet and repackage any damaged containers.
 4. Keep ACW separate from all other waste.
 5. Ensure that a person transporting asbestos waste holds a valid permit issued pursuant to law.
 6. Frequency of Waste Removal:
 - a. Properly packaged and labeled asbestos waste shall be removed from the site on a daily basis. Under no circumstance shall asbestos waste



be stored on site without written approval from the City. The Waste Hauler and landfill shall be as indicated on the notifications to regulatory agencies.

- G. Waste Load-out Through Equipment Decontamination Enclosure (Full Decontamination Facility): Place asbestos waste in disposal bags. Large items not able to fit into disposal bags shall be wrapped in one layer of 6-mil thick polyethylene sheeting. Clean outer covering of asbestos waste package by wet cleaning and/or HEPA-vacuuming in a designated part of the Work Area. Move wrapped asbestos waste to the equipment washroom, wet clean each bag or object and place it inside a second disposal bag, or a second layer of 6-mil polyethylene sheeting, as the item's physical characteristics demand. Air volume shall be minimized, and the bags or sheeting shall be sealed airtight with tape.
1. The clean containerized items shall be moved to the equipment decontamination enclosure holding area pending load-out to storage or disposal facilities.
 2. Workers who have entered the equipment decontamination enclosure system from the uncontaminated non-Work Area shall perform load-out of containers from the decontamination enclosure holding area. Dress workers moving asbestos waste to storage or disposal facilities in clean overalls of a color different than from that of coveralls used in the Work Area. Ensure that workers do not enter from uncontaminated areas into the equipment washroom or the Work Area. Ensure that contaminated workers do not exit the Work Area through the equipment decontamination enclosure system.
 3. Thoroughly clean the equipment decontamination enclosure system immediately upon completion of the waste load-out activities, and at the completion of each work shift.
 4. Labeled ACM waste containers or bags shall not be used for non-ACM debris or trash. Any materials placed in labeled containers or bags, including those turned "inside-out", shall be handled and disposed of as ACM waste.
- H. All asbestos materials, wastes, shower water, polyethylene, disposable equipment and supplies shall be disposed of as asbestos contaminated waste, in accordance with the EPA regulation (40 CFR, Section 61.150) and those requirements of the New York Department of Environmental Conservation and New York City Department of Sanitation.
- I. All asbestos materials shall be prepared for transportation in accordance with this specification and all applicable Federal, State, County and City Regulations. asbestos abatement contractor shall submit the following documentation:



1. Where applicable, an EPA Generator's identification number which has been obtained from the EPA for all asbestos waste generated from the project.
 2. Applicable State Waste Hauler license and registration numbers.
 3. Federal Hazardous Materials Waste Hauler number.
 4. Designated landfill EPA Permit numbers.
- J. Prior to loading asbestos waste the enclosed cargo areas (dumpster) shall be prepared as follows:
1. Clean via HEPA-vacuum and wet wipe techniques the enclosed cargo areas of all visible debris prior to preparing with polyethylene.
 2. Line the cargo area with two layers of 6-mil polyethylene sheeting to prevent contamination from damaged or leaking containers. Floor sheeting shall be installed first and extend up the walls a minimum of 24-inches. Wall sheeting shall be overlapped and taped securely into place.
- K. Asbestos-containing waste shall be placed on level surfaces in the cargo area of the dumpster and shall be packed tightly to prevent any shifting or tipping of the waste during transportation.
- L. Asbestos-containing waste shall not be thrown into or dropped from the dumpster. All material shall be handled carefully to prevent rupture of the containers.
- M. All personnel engaged in handling and loading of asbestos contaminated waste outside of the Work Area shall wear protective clothing. The disposable clothing shall include head, body and foot protection and color of clothing shall be different from abatement personnel in the Work Area. Minimum respiratory protection shall be half face, dual cartridge, air purifying respirators with HEPA-filters.
- N. Asbestos abatement contractor shall immediately clean debris or residue observed on containers or surfaces outside of the Work Area. Cleaning shall be via HEPA equipped wet/dry vacuums only.
- O. All asbestos-containing waste shall be transported from the abatement site to the landfill by a registered Waste Hauler. When transporting ACW:
1. Ensure that the ACW has been sufficiently wetted down in a leak tight container.
 2. Re-wet and repackage any damaged containers.
 3. Maintain at storage site an adequate supply of spare leak tight containers.



4. Maintain at storage site an adequate supply of amended water.
 5. Keep ACW separate from any other waste.
- P. Keep ACW in a secured, enclosed, and locked container.
- Q. Waste transport documents shall conform to the requirements of the U.S. Department of Transportation, Hazardous Materials Transportation Regulation, 49 CFR Part 173 and EPA 40 CFR 61.150 (d)(1)(2). Shipping documents shall be clearly marked with the required designation "RQ Asbestos". Asbestos abatement contractor shall provide a copy of this document to the City.
- R. A uniform hazardous waste manifest shall be prepared by the asbestos abatement contractor and signed by the asbestos abatement contractor each time the asbestos abatement contractor ships a dumpster load of Asbestos-Containing Waste Material. The uniform hazardous waste manifest shall include the site of waste generation, the names and addresses of the Transporter, the asbestos abatement contractor, and the landfill operator with information on the type and number of asbestos-waste containers, time and date. Asbestos abatement contractor shall provide the Construction Project Manager, Third-Party Air Monitor or authorized designated representative with signed copies of the waste manifest before each departure.
- S. Asbestos abatement contractor or his/her Waste Hauler shall transport asbestos-containing waste material from the abatement site directly to the specified disposal site. Asbestos abatement contractor or their Waste Hauler shall not accept material from any other site when transporting asbestos-containing waste material from the abatement site. The authorized DDC representative or Construction Project Manager reserves the right to travel with asbestos abatement contractor's Waste Hauler to the waste disposal site. No intermediate storage of waste material (i.e., asbestos abatement contractor's warehouse) shall be permitted.
- T. Final or progress application for payments will not be processed unless all hazardous waste manifests generated to date have been received and reviewed by the Construction Project Manager.
- U. All asbestos materials, wastes, shower water, polyethylene disposable equipment and supplies shall be disposed of as asbestos contaminated waste, in accordance with the EPA regulation (40 CFR, Section 61.150) and those requirements of the New York State Department of Environmental Conservation and the New York Department of Sanitation.



- V. Asbestos abatement contractor shall transport all sealed drums to a landfill disposal site approved by the Department of Environmental Conservation and the EPA. Transportation shall be performed by a New York State registered Waste Hauler, where required. When presenting the ACW for disposal the Asbestos abatement contractor or sub Asbestos abatement contractor shall:
 - 1. Ensure that waste container is properly labeled according to the National Emission Standard for Hazardous Air Pollutants (NESHAP); Asbestos Revision, 40 CFR, Part 61, Subpart M. The labels shall include the name of the waste generator and the location where the waste was generated.
 - 2. Comply with all applicable orders issued pursuant to asbestos disposal.
 - 3. Ensure that ACW has been sufficiently wetted down.
 - 4. Re-wet and repack any damaged containers.
 - 5. Keep ACW separate from all other wastes.
- W. Asbestos abatement contractor shall notify the waste disposal site, at least 24 hours prior to transportation of asbestos contaminated waste to be delivered. Asbestos abatement contractor shall determine if a larger notification period is required.
- X. At the site asbestos abatement contractors or Waste Hauler trucks shall approach the dump location as close as possible for unloading asbestos waste. Containers shall be carefully placed in the ground. Do not throw containers from truck.
- Y. Asbestos abatement contractor or Waste Hauler shall inspect containers as they are unloaded at the disposal site. Material in damaged containers shall be repacked in empty containers, as necessary.
- Z. Asbestos abatement contractor or Waste Hauler shall not remove asbestos-containing waste Material from drums unless required to do so by the disposal site City. Used drums shall be disposed of as asbestos-asbestos contaminated waste.
- AA. All personnel engaged in unloading of the containers at the waste site shall wear protective clothing. The disposable clothing shall include head, body and foot protection. Minimum respiratory protection shall be half face, dual cartridge, air purifying respirators with HEPA-filters. Workers shall remove their protective clothing at the disposal site, place it in labeled disposal bags and leave them with the deposited waste shipment.
- BB. For the compaction operation, the asbestos abatement contractor shall ensure that disposal sites personnel have been provided with personal protective equipment by the disposal operator. If the disposal site City has not provided this protective equipment, the asbestos abatement contractor shall supply protective clothing and



respiratory protection for the duration of this operation (PAPR respirators are mandatory).

- CC. If containers are broken or damaged, the asbestos abatement contractor or Waste Hauler shall, using personnel who are properly trained and wearing proper protective equipment, shall repackage the waste in properly labeled containers. Asbestos abatement contractor shall then clean the entire truck and its contents using HEPA-vacuums and wet cleaning techniques until no visible residue is observed.
- DD. Following the removal of all containerized waste, the asbestos abatement contractor shall decontaminate the truck cargo area using HEPA-vacuums and/or wet cleaning techniques until no residue is observed. All 6-mil polyethylene sheeting shall be removed and discarded as asbestos-containing waste material along with contaminated cleaning material and protective clothing, in containers at the disposal site.
- EE. The transporter(s) of all asbestos waste shall not back-haul any items on his return from landfill/disposal site.
- FF. All asbestos waste shall be disposed of in an approved Asbestos Landfill site only.
 - 1. NO PERSON UNDER ANY CIRCUMSTANCES SHALL ABANDON ACW. The same shall be disposed of only by certified persons in approved landfills.
 - 2. A manifest form will be signed by the Landfill documenting receipt and acceptance of the asbestos-containing waste. This manifest will be furnished to the City of New York within thirty calendar days from the project completion date.
 - 3. It is the responsibility of the Asbestos abatement contractor to determine current waste handling, transportation and disposal regulations for the work site and for each waste disposal landfill. The Asbestos abatement contractor must comply fully with these regulations and all appropriate U.S. Department of Transportation, EPA and other Federal, State and Local entities' regulations and all other current legal requirements.
 - 4. The asbestos abatement contractor shall obtain an agreement from the transporter (s) that the practice of "Back-Hauling" will not be engaged in, with respect to any and all waste loads taken from this site during the work.
 - 5. The asbestos abatement contractor will document actual disposal of the waste at the designated landfill by having completed a Disposal Certificate and will provide a copy of the same to the Department of Design and Construction.

PART 6 – ACCEPTANCE**6.01 ACCEPTANCE**

Upon satisfactory completion of all decontamination procedures, a certificate will be issued by the Construction Project Manager with copies to all parties.

- A. A letter of Compliance stating that all the work on the project was performed in accordance with the Specifications and all applicable Federal, State and Local regulations.
- B. All warranties as stated in the Specifications.

END OF SECTION 028213



SECTION 04 03 10 - HISTORIC MASONRY TREATMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section includes historic treatment work consisting of cleaning historic brick and cast stone masonry surfaces.
- B. Related Requirements:
 - 1. Section 04 03 22 "Historic Brick Unit Masonry Repair";
 - 2. Section 04 03 23 "Historic Brick Unit Masonry Repointing";
 - 3. Section 04 03 42 "Historic Cast-Stone Masonry Repair";
 - 4. Section 04 03 43 "Historic Cast-Stone Masonry Repointing".

1.3 DEFINITIONS

- A. Very Low-Pressure Spray: Less than 100 (690) psi (kPa).
- B. Low-Pressure Spray:
 - 1. Pressure: 100 to 400 (690 to 2750) psi (kPa).
 - 2. Flow Rate: 4 to 6 (0.25 to 0.4) gpm (L/s).
- C. Medium-Pressure Spray:
 - 1. Pressure: 400 to 800 (2750 to 5510) psi (kPa).
 - 2. Flow Rate: 4 to 6 (0.25 to 0.4) gpm (L/s).
- D. High-Pressure Spray:
 - 1. Pressure: 800 to 1200 (5510 to 8250) psi (kPa).
 - 2. Flow Rate: 4 to 6 (0.25 to 0.4) gpm (L/s).



1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference with manufacturer and the Commissioner at Project site prior to commencing the testing program.
1. Review methods and procedures related to cleaning historic masonry, including, but not limited to, the following:
 - a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Materials, material application, and sequencing.
 - c. Quality-control program.
 - d. Fire-protection plan.
 - e. Cleaning program.
 - f. Coordination with building occupants.
 2. Submit manufacturer's records in writing.
 3. Perform tests and mock-ups.
 4. Obtain manufacturer's recommendations in writing.
- B. Mockups:
1. Demonstrate materials and methods to be used for cleaning each type of masonry surface and condition, as described on drawings, on mockup panels of building façade of a size indicated, or of approximately five (5) sq. ft. where not indicated. Use the same equipment for the mockup panels that will be used for the entire work area.
 - b) Notify Commissioner and manufacturer's technical representative in writing when mockup panels will be performed. The Commissioner and manufacturer's representative will be present during mockup panel cleaning to identify dilution of chemicals and application methods appropriate for sample applications.
 - c) Mockup panels will be clearly marked and the contractor will document the exact application procedures, materials, dilution, dwell time and water pressures used in each mockup panel application.
 - d) Test adjacent non masonry materials for possible reaction with cleaning materials.
 - e) Allow waiting period of not less than 7 calendar days, after completion of cleaning mockup to permit study of panels for negative reactions.
 - f) Obtain Commissioner's written acceptance of visual qualities before proceeding with the work. Mockup panels will be judged for cleanness and any discoloration or whitening of the masonry surface.
 - g) If one or more mockup panels are not deemed acceptable, additional mockups will be required under Commissioner written direction until satisfactory results are achieved.
 2. Retain accepted mockup panels in undisturbed condition, suitably marked, during entire cleaning as a standard for judging completed work.



1.5 SEQUENCING AND SCHEDULING

- A. Work Sequence: Perform historic masonry cleaning work in the following sequence:
 - 1. Remove plant growth.
 - 2. Inspect masonry for open mortar joints. Where repairs are required, delay further cleaning work until after repairs are completed, cured, and dried to prevent intrusion of water and other cleaning materials into the wall.
 - 3. Remove paint.
 - 4. Clean masonry.
- B. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in masonry units according to historic masonry repair Sections. Patch holes in mortar joints according to historic masonry repointing Sections.

1.6 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 "Submittal Procedures".

1.7 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include material descriptions and application instructions.
 - 2. Include test data substantiating that products comply with requirements.

1.8 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For historic treatment specialists including field supervisors and workers, paint-remover manufacturer and chemical-cleaner manufacturer.
- B. Preconstruction Test Reports: For cleaning materials and methods.
- C. Quality-control program.
- D. Cleaning program.

1.9 QUALITY ASSURANCE

- A. Refer to DDC General Conditions Section 01 40 00 "Quality Requirements".
- B. Historic Treatment Specialist Qualifications: A qualified historic masonry cleaning specialist. Experience cleaning new masonry work is insufficient experience for historic treatment work.
- C. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use



materials and tools without damaging masonry. Include provisions for supervising performance and preventing damage.

- D. Cleaning Program: Prepare a written cleaning program that describes cleaning process in detail, including materials, methods, sequence, and equipment to be used; protection of surrounding materials; and control of runoff during operations.
 - 1. If materials and methods other than those indicated are proposed for any phase of cleaning work, add to the quality-control program a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.
- E. Coating Removal Mockups: Strip coatings from no less than 1 sq. ft. for at least one product from each group of strippers (Group A, Group B, Group C, Group D and Group E) listed under Products on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution.
 - 1. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Commissioner specifically approves such deviations in writing.
- F. Cleaning mockups: Prepare mockups of each cleaning method to include atmospheric soiling removal, biological soiling removal and efflorescence removal on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution.
 - 1. Cleaning: Clean an area approximately 10 sq. ft. for each type of masonry and surface condition.
 - a. Test cleaners and methods on samples of adjacent materials for possible adverse reactions. Do not test cleaners and methods known to have deleterious effect.
 - b. Allow a waiting period of not less than seven days after completion of sample cleaning to permit a study of sample panels for negative reactions.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Commissioner specifically approves such deviations in writing.

1.10 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit masonry cleaning work to be performed according to product manufacturers' written instructions and specified requirements.
- B. Clean masonry surfaces only when air temperature is 40 deg F (4 deg C) and above and is predicted to remain so for at least seven days after completion of cleaning.



PART 2 - PRODUCTS

2.1 GENERAL CLEANING MATERIALS

- A. Water: Potable.
- B. Stone and Brick Masonry Deposition Remover: Subject to compliance with requirements, available products to be tested per the Manufacturer's instructions and with varying dwell times and dilutions, but are not limited to the following:
 - 1. Dumond Chemicals: Safe 'n Easy All Purpose Cleaner;
 - 2. Cathedral Stone Products: Light Duty Restoration Cleaner;
 - 3. Prosoco: Sure Klean Light Duty Restoration Cleaner;
 - 4. Or approved equal.

2.2 PAINT REMOVERS

- A. Alkaline Paste Paint Remover: Manufacturer's standard alkaline paste or gel formulation for removing paint from masonry; containing no methylene chloride. Manufacturers include:
 - 1. Dumond Chemicals: Smart Strip;
 - 2. Cathedral Stone Products: Light Duty Paint Remover;
 - 3. Prosoco: Enviro Klean Saf Strip 8;
 - 4. Or approved equal.

2.3 ATMOSPHERIC SOILING REMOVERS

- A. Water: Potable.
- B. Mild-Acid Cleaner: Manufacturer's standard mild-acid cleaner containing no muriatic (hydrochloric), hydrofluoric, or sulfuric acid; or ammonium bifluoride or chlorine bleaches for the removal of atmospheric soiling.
 - 1. Products: Subject to compliance with requirements, available products to be tested per the Manufacturer's instructions and with varying dwell times and dilutions, but are not limited to the following:
 - a. Dumond Chemicals: Safe 'n Easy All Purpose Cleaner;
 - b. Cathedral Stone Products: Light Duty Restoration Cleaner;
 - c. Prosoco: Sure Klean Light Duty Restoration Cleaner;
 - d. Or approved equal.

2.4 BIOLOGICAL SOILING REMOVERS

- A. Water: Potable.



- B. Products: Subject to compliance with requirements, available products to be tested per the Manufacturer's instructions and with varying dwell times and dilutions, but are not limited to the following:

1. D/2 Biological Solution;
2. Prosoco: ReKlaim Activator and Cleaner;
3. Prosoco: ReVive;
4. Or approved equal.

2.5 EFFLORESCENCE REMOVER

- A. Products: Subject to compliance with requirements, available products to be tested per the Manufacturer's instructions and with varying dwell times and dilutions, but are not limited to the following:

1. Cathedral Stone Products: MasonRe Efflorescence Remover;
2. Prosoco: Sure Klean Marble Poultice;
3. Dumond Chemicals: Safe 'n Easy Non-Toxic Efflorescence Remover;
4. Or approved equal.

2.6 ACCESSORY MATERIALS

- A. Liquid Strippable Masking Agent: Manufacturer's standard liquid, film-forming, strippable masking material for protecting glass, metal, glazed masonry, and polished stone surfaces from damaging effects of acidic and alkaline masonry cleaners.

1. Products: Subject to compliance with requirements, available products to be tested per the Manufacturer's instructions and with varying dwell times and dilutions, but are not limited to the following:
 - a. Prosoco; Sure Klean Strippable Masking;
 - b. Or approved equal.

- B. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:

1. Previous effectiveness in performing the work involved.
2. Minimal possibility of damaging exposed surfaces.
3. Consistency of each application.
4. Uniformity of the resulting overall appearance.
5. Do not use products or tools that could do the following:
 - a. Remove, alter, or harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in contract.
 - b. Leave residue on surfaces.



PART 3 - EXECUTION

3.1 EXECUTION REQUIREMENTS

- A. Refer to DDC General Conditions for execution requirements.

3.2 PROTECTION

- A. Comply with each manufacturer's written instructions for protecting building and other surfaces against damage from exposure to its products. Prevent paint removers and chemical cleaning solutions from coming into contact with people, motor vehicles, landscaping, buildings, and other surfaces that could be harmed by such contact.
 - 1. Cover adjacent surfaces with materials that are proven to resist paint removers and chemical cleaners used unless products being used will not damage adjacent surfaces. Use protective materials that are waterproof and UV resistant. Apply masking agents according to manufacturer's written instructions. Do not apply liquid strippable masking agent to painted or porous surfaces. When no longer needed, promptly remove masking to prevent adhesive staining.
 - 2. Do not apply chemical solutions during winds of enough force to spread them to unprotected surfaces.
 - 3. Neutralize alkaline and acid wastes before disposal.
 - 4. Dispose of runoff from operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.
- B. Remove gutters and downspouts and associated hardware adjacent to immediate work area and store during masonry cleaning. Reinstall when masonry cleaning is complete.
 - 1. Provide temporary rain drainage during work to direct water away from building.

3.3 CLEANING MASONRY, GENERAL

- A. Have cleaning work performed only by qualified historic treatment specialist.
- B. Cleaning Appearance Standard: Cleaned surfaces are to have a uniform appearance as viewed from 20 feet (6 m) away by Commissioner.
- C. Proceed with cleaning in an orderly manner; work from top to bottom of each scaffold width and from one end of each elevation to the other. Ensure that dirty residues and rinse water do not wash over dry, cleaned surfaces.
- D. Use only those cleaning methods indicated for each masonry material and location.
 - 1. Brushes: Do not use wire brushes or brushes that are not resistant to chemical cleaner being used.



2. Spray Equipment: Use spray equipment that provides controlled application at volume and pressure indicated, measured at nozzle. Adjust pressure and volume to ensure that cleaning methods do not damage masonry.
 - a. Equip units with pressure gauges.
 - b. For chemical-cleaner spray application, use low-pressure tank or chemical pump suitable for chemical cleaner indicated, equipped with nozzle having a cone-shaped spray.
 - c. For water-spray application, use fan-shaped spray that disperses water at an angle of 25 to 50 degrees.
 - d. For high-pressure water-spray application, use fan-shaped spray that disperses water at an angle of at least 40 degrees.
 - E. Perform each cleaning method in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging masonry surfaces.
 1. Keep wall wet below area being cleaned to prevent streaking from runoff.
 - F. Perform additional general cleaning, paint and stain removal, and spot cleaning of small areas that are noticeably different when viewed according to "Cleaning Appearance Standard" Paragraph, so that cleaned surfaces blend smoothly into surrounding areas.
 - G. Chemical-Cleaner Application Methods: Apply chemical cleaners to masonry surfaces according to chemical-cleaner manufacturer's written instructions; use brush. Do not allow chemicals to remain on surface for periods longer than those indicated or recommended in writing by manufacturer.
 - H. Rinse off chemical residue and soil by working upward from bottom to top of each treated area at each stage or scaffold setting. Periodically during each rinse, test pH of rinse water running off of cleaned area to determine that chemical cleaner is completely removed.
 1. Apply neutralizing agent and repeat rinse if necessary to produce tested pH of between 6.7 and 7.5.
 - I. After cleaning is complete, remove protection no longer required. Remove tape and adhesive marks.
- 3.4 PRELIMINARY CLEANING
- A. Removing Plant Growth: Completely remove visible plant, moss, and shrub growth from masonry surfaces. Carefully remove plants, creepers, and vegetation by cutting at roots and allowing remaining growth to dry as long as possible before removal. Remove loose soil and plant debris from open masonry joints to whatever depth they occur.
 - B. Preliminary Cleaning: Before beginning general cleaning, remove extraneous substances that are resistant to planned cleaning methods. Extraneous substances include paint, caulking, asphalt, and tar.



1. Carefully remove heavy accumulations of rigid materials from masonry surface with sharp chisel. Do not scratch or chip masonry surface.
2. Remove paint and caulking with alkaline paint remover.
 - a. Comply with requirements in "Paint Removal" Article.
 - b. Repeat application up to two times if needed.
3. Remove asphalt and tar with solvent-type paste paint remover.
 - a. Comply with requirements in "Paint Removal" Article.
 - b. Apply paint remover only to asphalt and tar by brush without prewetting.
 - c. Allow paint remover to remain on surface for 10 to 30 minutes.
 - d. Repeat application if needed.

3.5 PAINT REMOVAL

- A. Paint-Remover Application, General: Apply paint removers according to paint-remover manufacturer's written instructions. Do not allow paint removers to remain on surface for periods longer than those indicated or recommended in writing by manufacturer.
- B. Paint Removal with Alkaline Paste Paint Remover:
 1. Remove loose and peeling paint using medium-pressure water spray, scrapers, stiff brushes, or a combination of these. Let surface dry thoroughly.
 2. Apply paint remover to dry, painted surface with brushes.
 3. Allow paint remover to remain on surface for period recommended in writing by manufacturer or as determined by preconstruction testing.
 4. Rinse with cold water applied by medium-pressure spray to remove chemicals and paint residue.
 5. Repeat process if necessary to remove all paint.
 6. Apply acidic cleaner or manufacturer's recommended afterwash to surface, while surface is still wet, using low-pressure spray equipment or soft-fiber brush. Let cleaner or afterwash remain on surface as a neutralizing agent for period recommended in writing by chemical-cleaner or afterwash manufacturer.
 7. Rinse with cold water applied by medium-pressure spray to remove chemicals and soil.

3.6 CLEANING BRICKWORK AND CAST STONE

- A. Cold-Water Soak:
 1. Apply cold water by intermittent spraying to keep surface moist.
 2. Use perforated hoses or other means that apply a fine water mist to entire surface being cleaned.
 3. Apply water in cycles of 5 minutes on and 20 minutes off.
 4. Continue spraying until surface encrustation has softened enough to permit its removal by water wash, as indicated by cleaning tests.
 5. Remove soil and softened surface encrustation from surface with cold water applied by low-pressure spray.



B. Detergent Cleaning:

1. Apply as per manufacturer's recommendations.

C. Mold, Mildew, and Algae Removal:

1. Wet surface with cold water applied by low-pressure spray.
2. Apply mold, mildew, and algae remover by brush or low-pressure spray.
3. Scrub surface with medium-soft brushes until mold, mildew, and algae are thoroughly dislodged and can be removed by rinsing. Use small brushes for mortar joints and crevices. Dip brush in mold, mildew, and algae remover often to ensure that adequate fresh cleaner is used and that surface remains wet.
4. Rinse with cold water applied by medium-pressure spray to remove mold, mildew, and algae remover and soil.
5. Repeat cleaning procedure, where needed to produce cleaning effect established by mockup.

D. Mild-Acid Chemical Cleaning:

1. Wet surface with cold water applied by low-pressure spray.
2. Apply cleaner to surface in two applications by brush or low-pressure spray.
3. Let cleaner remain on surface for period recommended in writing by chemical-cleaner manufacturer and established by mockup.
4. Rinse with cold water applied by medium-pressure spray to remove chemicals and soil.
5. Repeat cleaning procedure, where needed to produce cleaning effect established by mockup. Do not repeat more than once. If additional cleaning is required, use steam cleaning.

3.7 FINAL CLEANING

- A. Clean adjacent nonmasonry surfaces of spillage and debris. Use detergent and soft brushes or cloths.
- B. Remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.
- C. Remove masking materials, leaving no residues that could trap dirt.

3.8 FIELD QUALITY CONTROL

- A. Commissioner's Project Representatives: Commissioner will assign Project representatives to help carry out Commissioner's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Commissioner's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.
- B. Notify Commissioner's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Commissioner's



Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

- C. Manufacturer's Field Service: Engage paint-remover manufacturer's and chemical-cleaner manufacturer's factory-authorized service representatives for consultation and Project-site inspection, to perform preconstruction product testing, and provide on-site assistance when requested by Commissioner. Have paint-remover manufacturer's and chemical-cleaner manufacturer's factory-authorized service representatives visit Project site not less than twice to observe progress and quality of the Work.

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SECTION 04 03 22 - HISTORIC BRICK UNIT MASONRY REPAIR

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section includes historic treatment work consisting of repairing historic clay brick masonry as follows:
 - 1. Repairing unit masonry.
 - 2. Removing abandoned anchors.
 - 3. Painting steel uncovered during the work.
 - 4. Reanchoring veneers.
- B. Related Requirements:
 - 1. Section 02 42 96 "Historic Removal and Dismantling";
 - 2. Section 04 03 23 "Historic Brick Unit Masonry Repointing";
 - 3. Section 04 03 42 "Historic Cast-Stone Masonry Repair";
 - 4. Section 04 03 43 "Historic Cast-Stone Masonry Repointing";
 - 5. Section 04 72 00 "Cast Stone Masonry Rebuilding";
 - 6. Section 04 20 00 "Unit Masonry Rebuilding";
 - 7. Section 07 62 00 "Sheet Metal Flashing and Trim";
 - 8. Section 07 92 00 "Joint Sealants".

1.3 DEFINITIONS

- A. Low-Pressure Spray:
 - 1. Pressure: 100 to 400 (690 to 2750) psi (kPa).
 - 2. Flow Rate: 4 to 6 (0.25 to 0.4) gpm (L/s).
- B. Rebuilding (Setting) Mortar: Mortar used to set and anchor masonry in a structure, distinct from pointing mortar installed after masonry is set in place.
- C. Saturation Coefficient: Ratio of the weight of water absorbed during immersion in cold water to weight absorbed during immersion in boiling water; used as an indication of resistance of bricks to freezing and thawing.



1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review minutes of Preliminary Historic Treatment Conference that pertain to masonry historic treatment and repair.
 - 2. Review methods and procedures related to repairing historic brick masonry, including, but not limited to, the following:
 - a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Materials, material application, sequencing, tolerances, and required clearances.
 - c. Quality-control program.
 - d. Fire-protection plan.
 - e. Unit masonry historic treatment program.
 - f. Coordination with building occupants.

1.5 SEQUENCING AND SCHEDULING

- A. Order sand and gray portland cement for colored mortar immediately after approval of Samples and mockups. Take delivery of and store at Project site a sufficient quantity to complete Project.
- B. Work Sequence: Perform masonry historic treatment work in the following sequence, which includes work specified in this and other Sections:
 - 1. Remove plant growth.
 - 2. Inspect masonry for open mortar joints and permanently or temporarily point them before cleaning to prevent intrusion of water and other cleaning materials into the wall.
 - 3. Clean masonry.
 - 4. Rake out mortar from joints surrounding masonry to be replaced and from joints adjacent to masonry repairs along joints.
 - 5. Repair masonry, including replacing existing masonry with new masonry materials.
 - 6. Rake out mortar from joints to be repointed.
 - 7. Point mortar and sealant joints.
 - 8. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.

1.6 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 "Submittal Procedures".

1.7 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.



2. Include recommendations for product application and use.
3. Include test data substantiating that products comply with requirements.

B. Shop Drawings:

1. Include plans, elevations, sections, and locations of masonry repair work on the structure.
2. Show full-size patterns with complete dimensions for new bricks and their jointing, showing relationship of existing units to new units.
3. Show provisions for expansion joints or other sealant joints.
4. Show provisions for flashing, lighting fixtures, conduits, and weep holes as required.
5. Show replacement and repair anchors. Include details of anchors within individual bricks, with locations of anchors and dimensions of holes and recesses in units required for anchors.
6. Show locations of scaffolding and points of scaffolding in contact with masonry. Include details of each point of contact or anchorage.

C. Samples for Initial Selection: For the following:

1. Colored Mortar: Submit sets of mortar that will be left exposed in the form of sample mortar strips, 6 inches (150 mm) long by 1/2 inch (13 mm) wide, set in aluminum or plastic channels.
 - a. Have each set contain a close color range of at least six Samples of different mixes of colored sands and cements that produce a mortar matching existing, cleaned mortar when cured and dry.
 - b. Submit with precise measurements on ingredients, proportions, gradations, and sources of colored sands from which each Sample was made.
2. Sand Types Used for Mortar: Minimum 8 oz. (240 mL) of each in plastic screw-top jars.
 - a. For blended sands, provide Samples of each component and blend. Identify blend ratio.
 - b. Identify sources, both supplier and quarry, of each type of sand.
3. Include similar Samples of accessories involving color selection.

D. Samples for Verification: For the following:

1. Each type of brick to be used for replacing existing units. Include sets of Samples to show the full range of shape, color, and texture to be expected.
 - a. For each brick type, provide straps or panels containing at least four bricks. Include multiple straps for brick with a wide range.
2. Accessories: Each type of anchor, accessory, and miscellaneous support.



1.8 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For historic treatment specialist including field supervisors and workers and testing service.
- B. Preconstruction Test Reports: For existing bricks and mortar and replacement bricks.
- C. Quality-control program.
- D. Unit masonry historic treatment program.

1.9 QUALITY ASSURANCE

- A. Refer to DDC General Conditions Section 01 40 00 "Quality Requirements".
- B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising worker performance and preventing damage.
- C. Unit Masonry Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of historic treatment work, including protection of surrounding materials and Project site.
 - 1. Include methods for keeping exposed mortar damp during curing period.
 - 2. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add to the quality-control program a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.
- D. Mockups: Prepare mockups of historic treatment to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation.
 - 1. Masonry Repair: Prepare sample areas for each type of masonry material indicated to have repair work performed. If not otherwise indicated, size each mockup not smaller than two adjacent whole units or approximately 48 inches (1200 mm) in least dimension. Construct sample areas in locations in existing walls where directed by Commissioner unless otherwise indicated. Demonstrate quality of materials, workmanship, and blending with existing work. Include the following as a minimum:
 - a. Replacement: Four brick units replaced.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Commissioner specifically approves such deviations in writing.
 - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.



1.10 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on brick masonry as follows:
1. Provide test specimens as indicated and representative of proposed materials and existing construction.
 2. Replacement Brick: Test each proposed type of replacement brick, according to sampling and testing methods in ASTM C67 for compressive strength, 24-hour cold-water absorption, five-hour boil absorption, saturation coefficient, and initial rate of absorption (suction).
 3. Existing Brick: Test each type of existing brick indicated for replacement, according to testing methods in ASTM C67 for compressive strength, 24-hour cold-water absorption, five-hour boil absorption, saturation coefficient, and initial rate of absorption (suction). Carefully remove five existing units for testing from locations designated by Commissioner. Take testing samples from these units.
 4. Existing Mortar: Test according to ASTM C1324, modified as agreed by testing service and Commissioner for Project requirements, to determine proportional composition of original ingredients, sizes and colors of aggregates, and approximate strength. Use X-ray diffraction, infrared spectroscopy, and differential thermal analysis to supplement microscopical methods. Carefully remove existing mortar for testing from within joints at five locations designated by Commissioner.
 5. Temporary Patch: As directed by Commissioner, provide temporary materials followed by permanent repairs at locations from which existing samples were taken.

1.11 DELIVERY, STORAGE, AND HANDLING

- A. Deliver bricks to Project site strapped together in suitable packs or pallets or in heavy-duty cartons and protected against impact and chipping.
- B. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.
- C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- D. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.
- E. Store sand where grading and other required characteristics can be maintained and contamination avoided.
- F. Handle bricks to prevent overstressing, chipping, defacement, and other damage.



1.12 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit repair work to be performed according to product manufacturers' written instructions and specified requirements.
- B. Temperature Limits: Repair brick masonry only when air temperature is between 40 and 90 deg F (4 and 32 deg C) and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.
- C. Cold-Weather Requirements: Comply with the following procedures for masonry repair unless otherwise indicated:
 - 1. When air temperature is below 40 deg F (4 deg C), heat mortar ingredients, masonry repair materials, and existing masonry walls to produce temperatures between 40 and 120 deg F (4 and 49 deg C).
 - 2. When mean daily air temperature is below 40 deg F (4 deg C), provide enclosure and heat to maintain temperatures above 32 deg F (0 deg C) within the enclosure for seven days after repair.
- D. Hot-Weather Requirements: Protect masonry repairs when temperature and humidity conditions produce excessive evaporation of water from mortar and repair materials. Provide artificial shade and wind breaks, and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F (32 deg C) and above unless otherwise indicated.
- E. For manufactured repair materials, perform work within the environmental limits set by each manufacturer.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Source Limitations: Obtain each type of material for repairing historic masonry (face brick, cement, sand, etc.) from single source with resources to provide materials of consistent quality in appearance and physical properties.

2.2 FURNISHED MATERIAL

- A. Salvaged brick.

2.3 MASONRY MATERIALS

- A. Face Brick: Units, including molded, ground, cut, or sawed shapes as required to complete masonry repair work.



1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Glen-Gery Brick;
 - b. Belden Brick Company;
 - c. Consolidated Brick;
 - d. Or approved equal.
 2. Brick Matching Existing: Units with colors, color variation within units, surface texture, size, and shape that match existing brickwork and with physical properties as listed below:
 - a. Physical Properties: According to ASTM C67 and as follows:
 - 1) Grade: SW
 - 2) Type: FBX or HBX.
 - 3) Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 3350 psi (23.10 MPa).
 - 4) Initial Rate of Absorption: Less than 30 g/30 sq. in. (30 g/194 sq. cm) per minute when tested per ASTM C 67.
 - 5) Efflorescence: Provide brick that has been tested according to ASTM C 67 and is rated "not effloresced."
 - 6) Surface Coating: Brick with colors or textures produced by application of coatings shall withstand 50 cycles of freezing and thawing per ASTM C 67 with no observable difference in the applied finish when viewed from 10 feet (3 m) or shall have a history of successful use in Project's area.
 - 7) Application: Use where brick is exposed unless otherwise indicated.
 - 8) Provide face brick matching color range, texture and size of existing adjacent brickwork.
 - b. For existing brickwork that exhibits a range of colors or color variation within units, provide brick that proportionally matches that range and variation rather than brick that matches an individual color within that range.
 3. Special Shapes:
 - a. Provide molded, 100 percent solid shapes for applications where core holes or "frogs" could be exposed to view or weather when in final position, and where shapes produced by sawing would result in sawed surfaces being exposed to view.
 - b. Provide specially ground units, shaped to match patterns, for arches and where indicated.
 - c. Mechanically chopping or breaking brick, or bonding pieces of brick together by adhesive, are unacceptable procedures for fabricating special shapes.
 4. Tolerances as Fabricated: According to tolerance requirements in ASTM C216, Type FBX.
- B. Building Brick: ASTM C62, of same vertical dimension as face brick, for masonry work concealed from view.



1. Grade SW where in contact with earth.
2. Grade SW for concealed backup.
3. Dimension: To match existing.
4. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 3350 psi (23.10 MPa)
5. Application: Use where brick is indicated for concealed locations. Face brick complying with requirements for grade, compressive strength, and size indicated for building brick may be substituted for building brick.

2.4 MORTAR MATERIALS

- A. Regional Materials: Aggregate for mortar and grout, cement, and lime shall be extracted, harvested, or recovered, as well as manufactured, within 500 miles (800 km) of Project site.
- B. Portland Cement: ASTM C 150/C 150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
 1. Alkali content shall not be more than 0.6 percent when tested according to ASTM C 114.
- C. Hydrated Lime: ASTM C 207, Type S.
- D. Mortar Sand: ASTM C144 unless otherwise indicated.
 1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
 2. Color: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
 3. Provide sand with rounded edges.
 4. Refer to "Jablonski Building Conservation" materials testing report.
- E. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C 979/C 979M. Use only pigments with a record of satisfactory performance in masonry mortar.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Davis Colors.
 - b. LANXESS Corporation.
 - c. Solomon Colors, Inc.
 - d. Or approved equal.
- F. Water: ASTM C 270, potable.



2.5 ACCESSORY MATERIALS

- A. Weep/Vent Products: Use one of the following unless otherwise indicated:
1. Cellular Plastic Weep/Vent: One-piece, flexible extrusion made from UV-resistant polypropylene copolymer, full height and width of head joint and depth 1/8 inch (3 mm) less than depth of outer wythe, in color selected from manufacturer's standard.
 - a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) Advanced Building Products Inc.; Mortar Maze Cell Vent;
 - 2) Hohmann & Barnard, Inc.; QV Quadro-Vent;
 - 3) Wire-Bond; Cell Vent (#3601);
 - 4) Or approved equal.
- B. Masonry Repair Anchors, Tie and Anchor Type: Stainless steel type 304 tie, complete with other devices required for installation.
1. Products: Subject to compliance with requirements, provide the following or approved equal:
 - a. Hohmann & Barnard, Inc.; Type 304, BL-407 adjustable S.S. masonry anchor.
 - b. Or approved equal.
- C. Masonry Repair Anchors, Tie and Anchor Type: Stainless steel type 304 tie, complete with other devices required for installation.
1. Products: Subject to compliance with requirements, provide the following or approved equal:
 - a. Hohmann & Barnard, Inc.; Type 304, DW-10 S.S. anchor and Vee Byna-Tie S.S. tie.
 - b. Or approved equal.
- D. Masonry Anchor Bolt: Type 304, 1/4" brass expansion anchor, complete with other devices required for installation.
1. Products: Subject to compliance with requirements, provide the following or approved equal:
 - a. Hohmann & Barnard, Inc. - BL-523 Brass Expansion Bolt.
 - b. Or approved equal.
- E. Antirust Coating: Use paint as specified in Section 099600 "High performance coatings".
1. Surface Preparation: Use coating requiring no better SSPC-SP 3, "Power Tool Cleaning" or SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning".
 2. VOC Limit: Use coating with a VOC content of 400 g/L (3.3 lb/gal.) or less.



- F. Setting Buttons and Shims: Resilient plastic, nonstaining to masonry, sized to suit joint thicknesses and bed depths of bricks, less the required depth of pointing materials unless removed before pointing.
- G. Masking Tape: Nonstaining, nonabsorbent material; compatible with mortar, joint primers, sealants, and surfaces adjacent to joints; and that easily comes off entirely, including adhesive.
- H. Antirust Coating: Use paint as specified in Section 099600 "High performance coatings".
 - 1. Surface Preparation: Use coating requiring no better than SSPC-SP 3, "Power Tool Cleaning," or SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning," surface preparation according to manufacturer's literature or certified statement.
 - 2. VOC Limit: Use coating with a VOC content of 400 (3.3) g/L (lb/gal.) or less.
- I. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:
 - 1. Previous effectiveness in performing the work involved.
 - 2. Minimal possibility of damaging exposed surfaces.
 - 3. Consistency of each application.
 - 4. Uniformity of the resulting overall appearance.
 - 5. Do not use products or tools that could do the following:
 - a. Remove, alter, or harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in Contract.
 - b. Leave residue on surfaces.

2.6 EMBEDDED FLASHING MATERIALS

- A. Flexible Flashing: Use one of the following unless otherwise indicated:
 - 1. Shelf Adhering Rubberized-Asphalt Flashing: Composite flashing product consisting of a pliable, adhesive rubberized-asphalt compound, bonded to a high-density, cross-laminated polyethylene film to produce an overall thickness of not less than 0.040 inch (1.02 mm).
 - a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) GCP Applied Technologies Inc. (formerly Grace Construction Products): Perm-A-Barrier Wall Flashing;
 - 2) Or approved equal.
 - b. Accessories: Provide preformed corners, end dams, other special shapes, and seaming materials produced by flashing manufacturer.
- B. Flexible Flashing Reinforcement Patch: Use one of the following unless otherwise indicated:



- a. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) GCP Applied Technologies Inc. (formerly Grace Construction Products): Perm-A-Barrier Wall Membrane.
 - 2) Or approved equal.
- C. Application: Unless otherwise indicated, use the following:
 - 1. Where flashing is partly exposed and is indicated to terminate at the wall face, use stainless steel metal flashing with a drip edge.
- D. Adhesives, Primers, and Seam Tapes for Flashings: Flashing manufacturer's standard products or products recommended by flashing manufacturer for bonding flashing sheets to each other and to substrates.
- E. Termination Bars for Flexible Flashing: Type 304 Stainless steel bars 1/8 inch by 1 inch (3 mm by 25 mm).

2.7 MORTAR MIXES

- A. General: Do not use admixtures, including, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.
 - 1. Do not use calcium chloride in mortar.
 - 2. Use portland cement-lime mortar unless otherwise indicated.
- B. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated.
 - 1. For exterior, above-grade, load-bearing and nonload-bearing walls and parapet walls; and for other applications where another type is not indicated, use Type N, pending review of mortar analysis.
- C. Colored-Aggregate Mortar: Produce required mortar color by using colored aggregates and natural color or white cement as necessary to produce required mortar color.
 - 1. Mix to match results of mortar analysis.
 - 2. Application: Use colored-aggregate mortar for exposed mortar joints with the following units:
 - a. Face brick.
 - 3. Mortar color to match existing and be approved by the City of New York.
- D. Colored Mortar: If desired mortar color is not achieved by using colored aggregates and cement, use mortar pigments. Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Commissioner's approval.



1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black which is limited to 2 percent, unless otherwise demonstrated by a satisfactory history of performance.
- E. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
- F. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Commissioner's approval.
 1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black which is limited to 2 percent, unless otherwise demonstrated by a satisfactory history of performance.
- G. Do not use admixtures in mortar unless otherwise indicated.
- H. Mixes: Mix mortar materials in the following proportions:
 1. Rebuilding (Setting) Mortar by Type: ASTM C270, Proportion Specification, Type N unless otherwise indicated; with cementitious material limited to portland cement and lime.
- I. Refer to "Jablonski Building Conservation" materials testing report.

PART 3 - EXECUTION

3.1 EXECUTION REQUIREMENTS

- A. Refer to DDC General Conditions for execution requirements.

3.2 PROTECTION

- A. Prevent mortar from staining face of surrounding masonry and other surfaces.
 1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.
 2. Keep wall area wet below rebuilding and repair work to discourage mortar from adhering.
 3. Immediately remove mortar splatters in contact with exposed masonry and other surfaces.
- B. Remove gutters and downspouts and associated hardware adjacent to immediate work area, and store during masonry repair work. Reinstall when repairs are complete.
 1. Provide temporary rain drainage during work to direct water away from building.



3.3 MASONRY REPAIR, GENERAL

- A. Have repair work performed only by qualified historic treatment specialist.
- B. Repair Appearance Standard: Repaired surfaces are to have a uniform appearance as viewed from 20 (6) 50 (15) feet (m) away by Commissioner.

3.4 ABANDONED ANCHOR REMOVAL

- A. Remove abandoned anchors, brackets, wood nailers, and other extraneous items no longer in use unless indicated to remain.
 - 1. Remove items carefully to avoid spalling or cracking masonry.
 - 2. Notify Commissioner before proceeding if an item cannot be removed without damaging surrounding masonry. Do the following where directed:
 - a. Cut or grind off item approximately 3/4 (20) inch(es) (mm) beneath surface, and core drill a recess of same depth in surrounding masonry as close around item as practicable.
 - b. Immediately paint exposed end of item with two coats of antirust coating, following coating manufacturer's written instructions and without exceeding manufacturer's recommended dry film thickness per coat. Keep paint off sides of recess.
 - 3. Patch the hole where each item was removed unless directed to remove and replace brick.

3.5 BRICK REMOVAL AND REPLACEMENT

- A. At locations indicated, remove bricks that are damaged, spalled, or deteriorated. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.
 - 1. When removing single bricks, remove material from center of brick and work toward outside edges.
- B. Support and protect remaining masonry that surrounds removal area.
- C. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition. Coordinate with new flashing, reinforcement, and lintels, which are specified in other Sections.
- D. Notify Commissioner of unforeseen detrimental conditions, including voids, cracks, bulges, loose masonry units in existing backup, rotted wood, rusted metal, and other deteriorated items.
- E. Remove in an undamaged condition as many whole bricks as possible.
 - 1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.



2. Remove sealants by cutting close to brick with utility knife and cleaning with solvents.
 3. Store brick for reuse. Store off ground, on skids, and protected from weather.
 4. Deliver cleaned brick not required for reuse to City of New York unless otherwise indicated.
- F. Clean masonry surrounding removal areas by removing mortar, dust, and loose particles in preparation for brick replacement.
- G. Replace removed damaged brick with new brick matching existing brick. Do not use broken units unless they can be cut to usable size.
- H. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.
1. Maintain joint width for replacement units to match existing joints.
 2. Use setting buttons or shims to set units accurately spaced with uniform joints.
- I. Lay replacement brick with rebuilding (setting) mortar and with completely filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. (30 g/194 sq. cm per min.). Use wetting methods that ensure that units are nearly saturated but surface is dry when laid.
1. Tool exposed mortar joints in repaired areas to match joints of surrounding existing brickwork.
 2. Rake out mortar used for laying brick before mortar sets according to Section 040323 "Historic Brick Unit Masonry Repointing." Point at same time as repointing of surrounding area.
 3. When mortar is hard enough to support units, remove shims and other devices interfering with pointing of joints.
- J. Curing: Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
1. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

3.6 BACKUP MASONRY REMOVAL AND REPLACEMENT

- A. Where backup masonry is fractured or unstable and at locations indicated, remove mortar and masonry units that are broken or deteriorated and rebuild with whole, new brick or whole salvaged backup masonry units. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.
- B. Support and protect remaining masonry that surrounds removal area.
- C. Maintain flashing, reinforcement, anchors, lintels, and adjoining construction in an undamaged condition. Coordinate with new flashing, reinforcement, and lintels, which are specified in other Sections.



- D. Notify Commissioner of unforeseen detrimental conditions, including voids, cracks, bulges, loose masonry units beyond the removal area, rotted wood, rusted metal, and other deteriorated items.
- E. Remove in an undamaged condition as many whole bricks as possible.
 - 1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
 - 2. Remove sealants by cutting close to brick with utility knife and cleaning with solvents.
 - 3. Store brick for reuse. Store off ground, on skids, and protected from weather.
 - 4. Deliver cleaned brick not required for reuse to the City of New York unless otherwise indicated.
- F. Clean masonry surrounding removal areas by removing mortar, dust, and loose particles in preparation for brick replacement.
- G. Replace removed damaged brick with salvaged backup brick in good condition, where possible, or with new building brick matching existing backup brick. Do not use broken units unless they can be cut to usable size.
- H. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.
- I. Lay replacement brick with rebuilding (setting) mortar and with completely filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. (30 g/194 sq. cm per min.). Use wetting methods that ensure that units are nearly saturated but surface is dry when laid.
- J. Curing: Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
 - 1. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

3.7 REANCHORING VENEERS

- A. Install masonry repair anchors in horizontal mortar joints and according to manufacturer's written instructions. Space anchors not more than 16 inches (400 mm) o.c. vertically and 24 inches (610 mm) o.c. horizontally apart unless otherwise indicated. Install at locations to avoid penetrating flashing.
- B. Recess anchors 5/8 inch (16 mm) or more from surface of mortar joint, and fill recess with pointing mortar according to Section 040323 "Historic Brick Unit Masonry Repointing."



3.8 WEEP HOLES, AND VENTS

- A. General: Install weep holes in masonry at shelf angles, lintels, ledges, other obstructions to downward flow of water in wall, and where indicated.
- B. Install weep holes in veneers in head joints of first course of masonry immediately above embedded flashing.
 - 1. Use specified weep/vent products to form weep holes.
 - 2. Space weep holes 16 inches (400 mm) o.c. unless otherwise indicated.

3.9 PAINTING STEEL UNCOVERED DURING THE WORK

- A. Notify Commissioner if steel is exposed during masonry removal. Where Commissioner determines that steel is structural, or for other reasons cannot be totally removed, prepare and paint in accordance with Section 099600 "High Performance Coatings" specifications.
- B. If on inspection and rust removal, the thickness of a steel member is found to be reduced from rust by more than 1/16 (1.6) inch(es) (mm), notify Commissioner before proceeding.

3.10 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low-pressure spray.
 - 1. Do not use metal scrapers or brushes.
 - 2. Do not use acidic or alkaline cleaners.
- B. Clean adjacent nonmasonry surfaces. Use detergent and soft brushes or cloths.
- C. Clean mortar and debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.
- D. Remove masking materials, leaving no residues that could trap dirt.

3.11 FIELD QUALITY CONTROL

- A. Testing Agency: The City of New York will engage qualified testing agencies to perform tests and inspections. Allow inspectors use of lift devices and scaffolding, as needed, to perform inspections.
- B. Commissioner's Project Representatives: Commissioner will assign Project representatives to help carry out Commissioner's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Commissioner's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.



- C. Notify Commissioner's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Commissioner's Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

3.12 MASONRY-WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property.
- B. Masonry Waste: Remove masonry waste and legally dispose of off the City of New York's property.

END OF SECTION 04 03 22



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SECTION 04 03 23 - HISTORIC BRICK UNIT MASONRY REPOINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section includes historic treatment work consisting of repointing brick masonry as follows:

- 1. Repointing joints with mortar.

- B. Related Requirements:

- 1. Section 02 42 96 "Historic Removal and Dismantling" for historic removal and dismantling work;
 - 2. Section 04 03 22 "Historic Brick Unit Masonry Repair";
 - 3. Section 04 03 42 "Historic Cast-Stone Masonry Repair";
 - 4. Section 04 03 43 "Historic Cast-Stone Masonry Repointing";
 - 5. Section 04 20 00 "Unit Masonry Rebuilding";
 - 6. Section 04 72 00 "Cast Stone Masonry Rebuilding";
 - 7. Section 07 62 00 "Sheet Metal Flashing and Trim";
 - 8. Section 07 92 00 "Joint Sealants".

1.3 DEFINITIONS

- A. Low-Pressure Spray:

- 1. Pressure: 100 to 400 (690 to 2750) psi (kPa).
 - 2. Flow Rate: 4 to 6 (0.25 to 0.4) gpm (L/s).

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

- 1. Review minutes of Preliminary Historic Treatment Conference that pertain to masonry historic treatment and repointing.
 - 2. Review methods and procedures related to repointing historic brick masonry, including, but not limited to, the following:



- a. Historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
- b. Materials, material application, sequencing, tolerances, and required clearances.
- c. Quality-control program.
- d. Fire-protection plan.
- e. Unit masonry historic treatment program.
- f. Coordination with building occupants.

1.5 SEQUENCING AND SCHEDULING

- A. Order sand and gray portland cement for pointing mortar immediately after approval of mockups. Take delivery of and store at Project site a sufficient quantity to complete Project.
- B. Work Sequence: Perform masonry historic treatment work in the following sequence, which includes work specified in this and other Sections:
 1. Inspect masonry for open mortar joints and permanently or temporarily point them before cleaning to prevent intrusion of water and other cleaning materials into the wall.
 2. Clean masonry.
 3. Rake out mortar from joints surrounding masonry to be replaced and from joints adjacent to masonry repairs along joints.
 4. Repair masonry, including replacing existing masonry with new masonry materials.
 5. Rake out mortar from joints to be repointed.
 6. Point mortar joints.
 7. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.
- C. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in bricks according to Section 040322 "Historic Brick Unit Masonry Repair." Patch holes in mortar joints according to "Repointing" Article.

1.6 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 "Submittal Procedures".

1.7 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
 2. Include recommendations for product application and use.
 3. Include test data substantiating that products comply with requirements.
- B. Shop Drawings:
 1. Include plans, elevations, sections, and locations of repointing work on the structure.



2. Show provisions for expansion joints or other sealant joints.
3. Show locations of scaffolding and points of scaffolding in contact with masonry. Include details of contact or anchorage.

C. Samples for Initial Selection: For the following:

1. Pointing Mortar: Submit sets of mortar for pointing in the form of sample mortar strips, 6 inches (150 mm) long by 1/2 inch (13 mm) wide, set in aluminum or plastic channels.
 - a. Have each set contain a close color range of at least six Samples of different mixes of colored sands and cements that produce a mortar matching existing, cleaned mortar when cured and dry.
 - b. Submit with precise measurements on ingredients, proportions, gradations, and sources of colored sands from which each Sample was made.
2. Sand Type Used for Pointing Mortar: Minimum 8 oz. (240 mL) of each in plastic screw-top jars.
 - a. For blended sands, provide Samples of each component and blend. Identify blend ratio.
 - b. Identify sources, both supplier and quarry, of each type of sand.
3. Include similar Samples of accessories involving color selection.

D. Samples for Verification: For the following:

1. Each type, color, and texture of pointing mortar in the form of sample mortar strips, 6 inches (150 mm) long by 1/2 inch (13 mm) wide, set in aluminum or plastic channels.
 - a. Include with each Sample a list of ingredients with proportions of each. Identify sources, both supplier and quarry, of each type of sand and brand names of cementitious materials and pigments if any.
2. Sealant materials.
3. Accessories: Each type of anchor, accessory, and miscellaneous support.

1.8 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For historic treatment specialist including field supervisors and workers and testing service.
- B. Preconstruction Test Reports: For existing bricks and mortar.
- C. Quality-control program.
- D. Unit masonry historic treatment program.



1.9 QUALITY ASSURANCE

- A. Refer to DDC General Conditions Section 01 40 00 “Quality Requirements”.
- B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising worker performance and preventing damage.
- C. Unit Masonry Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of historic treatment work, including protection of surrounding materials and Project site.
 - 1. Include methods for keeping pointing mortar damp during curing period.
 - 2. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add to the quality-control program a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.
- D. Mockups: Prepare mockups of historic treatment on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution.
 - 1. Repointing: Rake out joints in two separate areas, each approximately 36 inches (900 mm) high by 48 inches (1200 mm) wide for each type of repointing required, and repoint one of the areas.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.10 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on brick masonry as follows:
 - 1. Provide test specimens as indicated and representative of proposed materials and existing construction.
 - 2. Existing Mortar: Test according to ASTM C1324, modified as agreed by testing service and Architect for Project requirements, to determine proportional composition of original ingredients, sizes and colors of aggregates, and approximate strength. Use X-ray diffraction, infrared spectroscopy, and differential thermal analysis to supplement microscopical methods. Carefully remove existing mortar for testing from within joints at five locations designated by Architect or testing service.
 - 3. Temporary Patch: As directed by Architect, provide temporary materials at locations from which existing samples were taken.



1.11 DELIVERY, STORAGE, AND HANDLING

- A. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.
- D. Store sand where grading and other required characteristics can be maintained and contamination avoided.

1.12 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit repointing work to be performed according to product manufacturers' written instructions and specified requirements.
- B. Temperature Limits: Repoint mortar joints only when air temperature is between 40 and 90 deg F (4 and 32 deg C) and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.
- C. Cold-Weather Requirements: Comply with the following procedures for mortar-joint pointing unless otherwise indicated:
 - 1. When air temperature is below 40 deg F (4 deg C), heat mortar ingredients and existing masonry walls to produce temperatures between 40 and 120 deg F (4 and 49 deg C).
 - 2. When mean daily air temperature is below 40 deg F (4 deg C), provide enclosure and heat to maintain temperatures above 32 deg F (0 deg C) within the enclosure for seven days after pointing.
- D. Hot-Weather Requirements: Protect mortar-joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar materials. Provide artificial shade and wind breaks, and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F (32 deg C) and above unless otherwise indicated.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Source Limitations: Obtain each type of material for repointing historic masonry (cement, sand, etc.) from single source with resources to provide materials of consistent quality in appearance and physical properties.



2.2 MORTAR MATERIALS

- A. Portland Cement: ASTM C 150/C 150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.
 - 1. Alkali content shall not be more than 0.6 percent when tested according to ASTM C 114.
- B. Hydrated Lime: ASTM C 207, Type S.
- C. Mortar Sand: ASTM C144 unless otherwise indicated.
 - 1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
 - 2. Color: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
 - 3. Provide sand with rounded edges.
 - 4. Refer to "Jablonski Building Conservation" materials testing report.
- D. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C 979/C 979M. Use only pigments with a record of satisfactory performance in masonry mortar.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Davis Colors.
 - b. LANXESS Corporation.
 - c. Solomon Colors, Inc.
 - d. Or approved equal.
- E. Water: ASTM C270, potable.

2.3 ACCESSORY MATERIALS

- A. Masking Tape: Nonstaining, nonabsorbent material; compatible with mortar, joint primers, sealants, and surfaces adjacent to joints; and that easily comes off entirely, including adhesive.
- B. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:
 - 1. Previous effectiveness in performing the work involved.
 - 2. Minimal possibility of damaging exposed surfaces.
 - 3. Consistency of each application.
 - 4. Uniformity of the resulting overall appearance.
 - 5. Do not use products or tools that could do the following:



- a. Remove, alter, or harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in Contract.
- b. Leave residue on surfaces.

2.4 MORTAR MIXES

- A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
 1. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened material.
- B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.
 1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black, which is limited to 2 percent, unless otherwise demonstrated by a satisfactory history of performance.
- C. Do not use admixtures in mortar unless otherwise indicated.
- D. Mixes: Mix mortar materials in the following proportions:
 1. Pointing Mortar by Type: ASTM C270, Proportion Specification, Type N unless otherwise indicated; with cementitious material limited to portland cement and lime.
- E. Refer to "Jablonski Building Conservation" materials testing report.

PART 3 - EXECUTION

3.1 EXECUTION REQUIREMENTS

- A. Refer to DDC General Conditions for execution requirements.

3.2 PROTECTION

- A. Prevent mortar from staining face of surrounding masonry and other surfaces.
 1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.



2. Keep wall area wet below rebuilding and pointing work to discourage mortar from adhering.
 3. Immediately remove mortar splatters in contact with exposed masonry and other surfaces.
- B. Remove gutters and downspouts and associated hardware adjacent to immediate work area and store during masonry repointing work. Reinstall when repointing is complete.
1. Provide temporary rain drainage during work to direct water away from building.

3.3 MASONRY REPOINTING, GENERAL

- A. Have repointing work performed only by qualified historic treatment specialist.
- B. Appearance Standard: Repointed surfaces are to have a uniform appearance as viewed from 20 (6) feet (m) away by Architect.

3.4 WIDENING JOINTS

- A. Do not widen a joint, except where indicated or approved by Architect.

3.5 REPOINTING

- A. Rake out and repoint joints to the following extent:
 1. All joints in areas indicated.
- B. Do not rake out and repoint joints where not required.
- C. Rake out joints as follows, according to procedures demonstrated in approved mockup:
 1. Remove mortar from joints to depth of 2-1/2 times joint width, but not less than 3/4 inch (20 mm) or not less than that required to expose sound, unweathered mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
 2. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
 3. Do not spall edges of bricks or widen joints. Replace or patch damaged bricks as directed by Architect.
 - a. Cut out mortar by hand with chisel and resilient mallet. Do not use power-operated grinders without Architect's written approval based on approved quality-control program.
 - b. Cut out center of mortar bed joints using angle grinders with diamond-impregnated metal blades. Remove remaining mortar in bed joints and mortar in head joints by hand with chisel and resilient mallet. Strictly adhere to approved quality-control program.



- D. Notify Architect of unforeseen detrimental conditions, including voids in mortar joints, cracks, loose masonry units, rotted wood, rusted metal, and other deteriorated items.
- E. Pointing with Mortar:
 - 1. Rinse joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen joint surfaces before pointing.
 - 2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 (9) inch(es) (mm) until a uniform depth is formed. Fully compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
 - 3. After deep areas have been filled to same depth as remaining joints, point joints by placing mortar in layers not greater than 3/8 (9) inch(es) (mm). Fully compact each layer and allow it to become thumbprint hard before applying next layer. Where existing brick have worn or rounded edges, slightly recess finished mortar surface below face of masonry to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed masonry surfaces or to featheredge the mortar.
 - 4. When mortar is thumbprint hard, tool joints to match original appearance of joints as demonstrated in approved mockup. Remove excess mortar from edge of joint by brushing.
 - 5. Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
 - a. Acceptable curing methods include covering with wet burlap and plastic sheeting, periodic hand misting, and periodic mist spraying using system of pipes, mist heads, and timers.
 - b. Adjust curing methods to ensure that pointing mortar is damp throughout its depth without eroding surface mortar.
 - 6. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Remove mortar and repoint.
- F. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

3.6 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water, applied by low-pressure spray.
 - 1. Do not use metal scrapers or brushes.
 - 2. Do not use acidic or alkaline cleaners.
- B. Clean adjacent nonmasonry surfaces. Use detergent and soft brushes or cloths.
- C. Clean mortar and debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.



- D. Remove masking materials, leaving no residues that could trap dirt.

3.7 FIELD QUALITY CONTROL

- A. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.
- B. Notify Architect's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Architect's Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

END OF SECTION 04 03 23

SECTION 04 03 42 - HISTORIC CAST-STONE MASONRY REPAIR**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section includes historic treatment work consisting of repairing historic cast-stone assemblies as follows:
1. Repairing cast-stone masonry.
 2. Removing abandoned anchors.
 3. Painting steel uncovered during the Work.
- B. Related Requirements:
1. Section 02 42 96 "Historic Removal and Dismantling" for historic removal and dismantling work.
 2. Section 04 03 22 "Historic Brick Unit Masonry Repair";
 3. Section 04 03 23 "Historic Brick Unit Masonry Repointing";
 4. Section 04 03 43 "Historic Cast-Stone Masonry Repointing";
 5. Section 07 92 00 "Joint Sealants".

1.3 DEFINITIONS

- A. Low-Pressure Spray:
1. Pressure: 100 to 400 (690 to 2750) psi (kPa).
 2. Flow Rate: 4 to 6 (0.25 to 0.4) gpm (L/s).
- B. Rebuilding (Setting) Mortar: Mortar used to set and anchor masonry in a structure, distinct from pointing mortar installed after masonry is set in place.



1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference on historic masonry repair and repointing at Project site.
 - 1. Review minutes of Preliminary Historic Treatment Conference that pertain to cast-stone historic treatment and repair.
 - 2. Review methods and procedures related to repairing historic cast-stone masonry, including, but not limited to, the following:
 - a. Verify historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Materials, material application, sequencing, tolerances, and required clearances.
 - c. Quality-control program.
 - d. Fire-protection plan.
 - e. Cast-Stone historic treatment program.
 - f. Coordination with building occupants.

1.5 SEQUENCING AND SCHEDULING

- A. Order sand and gray portland cement for colored mortar immediately after approval of Samples and mockups. Take delivery of and store at Project site a sufficient quantity to complete Project.
- B. Work Sequence: Perform cast-stone historic treatment work in the following sequence, which includes work specified in this and other Sections:
 - 1. Inspect stonework for open mortar joints and permanently or temporarily point them before cleaning to prevent the intrusion of water and other cleaning materials into the wall.
 - 2. Remove paint.
 - 3. Clean cast-stone.
 - 4. Rake out mortar from joints surrounding cast-stone to be replaced and from joints adjacent to cast-stone repairs along joints.
 - 5. Repair stonework, including replacing existing cast-stone with new cast-stone. If required, repair backup masonry.
 - 6. Rake out mortar from joints to be repointed.
 - 7. Point mortar and sealant joints.
 - 8. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.
 - 9. Where water repellents are to be used on or near stonework, delay application of these chemicals until after pointing and cleaning.
- C. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in cast-stone according to Part 3 "Cast-Stone Patching" Article. Patch holes in mortar joints according to Section 040343 "Historic Stone Masonry Repointing."



1.6 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 “Submittal Procedures”.

1.7 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
- 2. Include recommendations for product application and use.
- 3. Include test data substantiating that products comply with requirements.

- B. Shop Drawings:

- 1. Include plans, elevations, sections, and locations of cast-stone repair work on the structure.
- 2. Indicate complete dimensions for new cast-stone units and their jointing, showing relation of existing to new units.
- 3. Indicate setting number of each new cast-stone unit and its location on the structure in annotated plans and elevations.
- 4. Show provisions for expansion joints or other sealant joints.
- 5. Show provisions for flashing, lighting fixtures, conduits, and weep holes as required.
- 6. Show replacement and repair anchors, including drilled-in pins. Include details of anchors within individual cast-stone units, with locations of anchors and dimensions of holes and recesses in cast-stone required for anchors, including direction and angle of holes for pins.
- 7. Show locations of scaffolding and points of scaffolding in contact with masonry. Include details of each point of contact or anchorage.

- C. Samples for Initial Selection: For the following:

- 1. Colored Mortar: Submit sets of mortar that will be left exposed in the form of sample mortar strips, 6 inches (150 mm) long by 1/2 inch (13 mm) wide, set in aluminum or plastic channels.
 - a. Have each set contain a close color range of at least six Samples of different mixes of colored sands and cements that produce a mortar matching existing, cleaned mortar when cured and dry.
 - b. Submit with precise measurements on ingredients, proportions, gradations, and sources of colored sands from which each Sample was made.
- 2. Each type of sand used for mortar; minimum 8 oz. (240 mL) of each in plastic screw-top jars.



- a. For blended sands, provide Samples of each component and blend. Identify blend ratio.
 - b. Identify sources, both supplier and quarry, of each type of sand.
 3. Patching Compound: Submit sets of patching compound Samples in the form of plugs (patches in drilled holes) in sample units of cast-stone representative of the range of cast-stone colors on the building.
 - a. Have each set contain a close color range of at least six Samples of different mixes of patching compound that matches the variations in existing cast-stone when cured and dry.
 4. Include similar Samples of accessories involving color selection.
- D. Samples for Verification: For the following:
1. For each color and texture of cast-stone required, 10 inches (250 mm) square in size.
 2. For each trim shape required, 10 inches (250 mm) in length.
 3. Each type of patching compound in form of briquettes, at least 3 inches (75 mm) long by 1-1/2 inches (38 mm) wide. Document each Sample with manufacturer and stock number or other information necessary to order additional material.
 4. Each type of adhesive.
 5. Accessories: Each type of anchor, accessory, and miscellaneous support.
- E. Full-Size Samples: For each color, texture and shape of cast-stone unit required.
1. Make available for Architect's review at Project site.
 2. Make Samples from materials to be used for units used on Project immediately before beginning production of units for Project.
 3. Approved Samples may be installed in the Work.

1.8 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For historic treatment specialist including field supervisors and workers and testing service.
- B. Material Test Reports: For each mix required to produce cast-stone, based on testing according to ASTM C1364, including test for resistance to freezing and thawing.
 1. Provide test reports based on testing within previous two years.
- C. Preconstruction Test Reports: For existing cast-stone types and mortar and replacement cast-stone types.
- D. Quality-control program.



- E. Cast-Stone historic treatment program.

1.9 QUALITY ASSURANCE

- A. Refer to DDC General Conditions Section 01 40 00 “Quality Requirements”.
- B. **Manufacturer Qualifications:** A qualified manufacturer of cast-stone units similar to those indicated for this Project, that has sufficient production capacity to manufacture required units, and is a plant certified by the Cast Stone Institute, the Architectural Precast Association and/or the Precast/Prestressed Concrete Institute for Group A, Category AT.
- C. **Quality-Control Program:** Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising worker performance and preventing damage.
- D. **Cast-Stone Historic Treatment Program:** Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of the historic treatment work, including protection of surrounding materials and Project site.
 - 1. Include methods for keeping exposed mortar damp during curing period.
 - 2. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add to the quality-control program a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.
- E. **Testing Agency Qualifications:** Qualified according to ASTM E329 for testing indicated.
- F. **Mockups:** Prepare mockups of historic treatment to demonstrate aesthetic effects and to set quality standards for materials and execution and for fabrication and installation.
 - 1. **Cast-Stone Repair:** Prepare sample areas for each type of cast-stone indicated to have repair work performed. If not otherwise indicated, size each mockup not smaller than two adjacent whole units or approximately 48 inches (1200 mm) in least dimension. Construct sample areas in locations in existing walls where directed by Architect unless otherwise indicated. Demonstrate quality of materials, workmanship, and blending with existing work. Include the following as a minimum:
 - a. **Replacement:** Two cast-stone sills replaced.
 - b. **Crack Injection:** Apply crack injection in two separate areas, each approximately 6 inches long.
 - c. **Patching:** Three small holes at least 2 inch (50 mm) in diameter for each type of cast-stone indicated to be patched, so as to leave no evidence of repair.



2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Deliver cast-stone to Project site strapped together in suitable packs or pallets or in heavy-duty crates and protected against impact and chipping.
- B. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.
- C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- D. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.
- E. Store sand where grading and other required characteristics can be maintained and contamination avoided.
- F. Handle cast-stone to prevent overstressing, chipping, defacement, and other damage.

1.11 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit repair work to be performed according to product manufacturers' written instructions and specified requirements.
- B. Temperature Limits: Repair stonework only when air temperature is between 40 and 90 deg F (4 and 32 deg C) and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.
- C. Cold-Weather Requirements: Comply with the following procedures for cast-stone repair unless otherwise indicated:
 1. When air temperature is below 40 deg F (4 deg C), heat mortar ingredients, repair materials, and existing cast-stone to produce temperatures between 40 and 120 deg F (4 and 49 deg C).
 2. When mean daily air temperature is below 40 deg F (4 deg C), provide enclosure and heat to maintain temperatures above 32 deg F (zero deg C) within the enclosure for seven days after repair.
 3. Comply with cold-weather construction requirements in TMS 602/ACI 530.1/ASCE 6.



- D. Hot-Weather Requirements: Protect stonework repairs when temperature and humidity conditions produce excessive evaporation of water from mortar and patching materials. Provide artificial shade and wind breaks, and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F (32 deg C) and above unless otherwise indicated. Comply with hot-weather construction requirements in TMS 602/ACI 530.1/ASCE 6.
- E. For manufactured repair materials, perform work within the environmental limits set by each manufacturer.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Source Limitations: Obtain each type of material for repairing historic masonry (cast-stone, cement, sand, etc.) from single source with resources to provide materials of consistent quality in appearance and physical properties.

2.2 CAST-STONE MATERIALS

- A. General: Comply with ASTM C1364.
- B. Portland Cement: ASTM C150/C150M, Type I or Type III, containing not more than 0.60 percent total alkali when tested according to ASTM C114. Provide natural color or white cement as required to produce cast-stone color indicated.
- C. Coarse Aggregates: Granite, quartz, or limestone complying with ASTM C33/C33M; gradation and colors as needed to produce required cast-stone textures and colors.
- D. Fine Aggregates: Natural sand or crushed stone complying with ASTM C33/C33M, gradation and colors as needed to produce required cast-stone textures and colors.
- E. Color Pigment: ASTM C979/C979M, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.
- F. Admixtures: Use only admixtures specified or approved in writing by Architect.
 - 1. Do not use admixtures that contain more than 0.1 percent water-soluble chloride ions by mass of cementitious materials. Do not use admixtures containing calcium chloride.
 - 2. Use only admixtures that are certified by manufacturer to be compatible with cement and other admixtures used.



3. Air-Entraining Admixture: ASTM C260/C260M. Add to mixes for units exposed to the exterior at manufacturer's prescribed rate to result in an air content of 4 to 6 percent, except do not add to zero-slump concrete mixes.
 4. Water-Reducing Admixture: ASTM C494/C494M, Type A.
 5. Water-Reducing, Retarding Admixture: ASTM C494/C494M, Type D.
 6. Water-Reducing, Accelerating Admixture: ASTM C494/C494M, Type E.
- G. Reinforcement: Deformed steel bars complying with ASTM A615/A615M, Grade 60 (Grade 420). Use epoxy-coated reinforcement when covered with less than 1-1/2 inches (38 mm) of cast-stone material.
1. Epoxy Coating: ASTM A775/A775M.
- H. Embedded Anchors and Other Inserts: Fabricated from stainless steel complying with ASTM A240/A240M, ASTM A276, or ASTM A666, Type 304.

2.3 MASONRY MATERIALS

- A. Building Brick: Brick having same vertical dimension as existing backup brick, according to ASTM C62, Grade SW and Section 040322 "Historic Brick Unit Masonry Repair."

2.4 MORTAR MATERIALS

- A. Provide mortar materials that comply with Section 040343 "Historic Cast-Stone Masonry Repointing."

2.5 MANUFACTURED REPAIR MATERIALS

- A. Cast-Stone Patching Compound: Factory-mixed cementitious product that is custom manufactured for patching cast-stone.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Cathedral Stone Products, Inc.
 - b. Edison Coatings, Inc.
 - c. Or approved equal.
 2. Use formulation that is vapor and water permeable (equal to or more than the cast-stone), exhibits low shrinkage, has lower modulus of elasticity than the cast-stone units being repaired, and develops high bond strength to all cast-stone types.



3. Use formulation having working qualities and retardation control to permit forming and sculpturing where necessary.
 4. Formulate patching compound in colors, textures, and grain to match cast-stone being patched. Provide no fewer than six colors to enable matching each piece of cast-stone.
- B. Cementitious Crack Filler: Ultrafine superplasticized grout that can be injected into cracks, is suitable for application to wet or dry cracks, exhibits low shrinkage, and develops high bond strength to all cast-stone types.
1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Cathedral Stone Products, Inc.
 - b. Edison Coatings, Inc.
 - c. Or approved equal.
- C. Stone-to-Stone Adhesive: Two-part epoxy-resin stone adhesive with a 15- to 45-minute cure at 70 deg F (21 deg C), recommended in writing by adhesive manufacturer for type of stone repair indicated.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Akemi North America;
 - b. Bonstone Materials Corporation;
 - c. Edison Coatings, Inc.;
 - d. Or approved equal.

2.6 ACCESSORY MATERIALS

- A. Cast-Stone Anchors and Pins: Type and size indicated or, if not indicated, to match existing anchors in size and type. Fabricate from Type 304 stainless steel.
- B. Dowels: 1/2-inch- (12-mm-) diameter round bars, fabricated from Type 304 stainless steel complying with ASTM A240/A240M, ASTM A276, or ASTM A666.
- C. Threaded rods:
1. Heckman Building Products, #177 S.S. Type 304 Continuous Threaded Rod (1/4");
 2. Or approved equal.
- D. Masking Tape: Nonstaining, nonabsorbent material; compatible with mortar, joint primers, sealants, and surfaces adjacent to joints; and that easily comes off entirely, including adhesive.
- E. Antirust Coating: Use paint as specified in Section 099600 "High performance coatings."



1. Surface Preparation: Use coating requiring no better than SSPC-SP 2, "Hand Tool Cleaning," SSPC-SP 3, "Power Tool Cleaning," or SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning," surface preparation according to manufacturer's literature or certified statement.
 2. VOC Limit: Use coating with a VOC content of 400 (3.3) g/L (lb/gal.) or less.
- F. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:
1. Previous effectiveness in performing work involved.
 2. Minimal possibility of damaging exposed surfaces.
 3. Consistency of each application.
 4. Uniformity of the resulting overall appearance.
 5. Do not use products or tools that could do the following:
 - a. Remove, alter, or harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in contract.
 - b. Leave residue on surfaces.

2.7 MORTAR MIXES

- A. As indicated in section 04 03 43 "Historic Cast-Stone Masonry Repointing."

PART 3 - EXECUTION

3.1 EXECUTION REQUIREMENTS

- A. Refer to DDC General Conditions for execution requirements.

3.2 PROTECTION

- A. Prevent mortar from staining face of surrounding cast-stone and other surfaces.
1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.
 2. Keep wall area wet below rebuilding and repair work to discourage mortar from adhering.
 3. Immediately remove mortar splatters in contact with exposed masonry and other surfaces.
- B. Remove gutters and downspouts and associated hardware adjacent to immediate work area and store during cast-stone repair work. Reinstall when repairs are complete.
1. Provide temporary rain drainage during work to direct water away from building.



3.3 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.4 CAST-STONE REPAIR, GENERAL

- A. Have repair work performed only by qualified historic treatment specialist.
- B. Repair Appearance Standard: Repaired surfaces are to have a uniform appearance as viewed from 20 (6) feet (m) away by Architect.

3.5 ABANDONED ANCHOR REMOVAL

- A. Remove abandoned anchors, brackets, wood nailers, and other extraneous items no longer in use unless indicated to remain.
 - 1. Remove items carefully to avoid spalling or cracking cast-stone.
 - 2. Notify Architect before proceeding if an item cannot be removed without damaging surrounding cast-stone; do the following where directed:
 - a. Cut or grind off item approximately 3/4 (20) inch (mm) beneath surface, and core drill a recess of same depth in surrounding cast-stone as close around item as practical.
 - b. Immediately paint exposed end of item with two coats of antirust coating, following coating manufacturer's written instructions and without exceeding manufacturer's recommended dry film thickness per coat. Keep paint off sides of recess.
 - 3. Patch the hole where each item was removed unless directed to remove and replace the cast-stone unit.

3.6 BACKUP MASONRY REMOVAL AND REPLACEMENT

- A. Where backup masonry is fractured or unstable and at locations indicated, remove mortar and masonry units that are broken or deteriorated, and rebuild with whole, new brick or whole, salvaged backup masonry units. Carefully remove entire units from joint to joint, without damaging surrounding masonry, in a manner that permits replacement with full-size units.
- B. Perform backup masonry removal and replacement according to requirements in Section 040322 "Historic Brick Unit Masonry Repair."



- C. Support and protect remaining masonry that surrounds removal area.
- D. Maintain flashing, reinforcement, anchors, lintels, and adjoining construction in an undamaged condition. Coordinate with new flashing, reinforcement, and lintels, which are specified in other Sections.
- E. Notify Architect of unforeseen detrimental conditions, including voids, cracks, bulges, loose masonry units beyond the removal area, rotted wood, rusted metal, and other deteriorated items.
- F. Remove in an undamaged condition as many whole bricks as possible.
 - 1. Remove mortar, loose particles, and soil from brick by cleaning with hand chisels, brushes, and water.
 - 2. Remove sealants by cutting close to brick with utility knife and cleaning with solvents.
 - 3. Store brick for reuse. Store off ground, on skids, and protected from weather.
 - 4. Deliver cleaned brick not required for reuse to Owner unless otherwise indicated.
- G. Clean masonry surrounding removal areas by removing mortar, dust, and loose particles in preparation for brick replacement.
- H. Replace removed damaged brick with salvaged backup brick in good condition, where possible, or with new building brick matching existing backup brick. Do not use broken units unless they can be cut to usable size.
- I. Install replacement brick into bonding and coursing pattern of existing brick. If cutting is required, use a motor-driven saw designed to cut masonry with clean, sharp, unchipped edges.
- J. Lay replacement brick with rebuilding (setting) mortar and with completely filled bed, head, and collar joints. Butter ends with sufficient mortar to fill head joints and shove into place. Wet both replacement and surrounding bricks that have ASTM C67 initial rates of absorption (suction) of more than 30 g/30 sq. in. per min. (30 g/194 sq. cm per min.). Use wetting methods that ensure that units are nearly saturated but surface is dry when laid.
- K. Curing: Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
 - 1. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Completely remove such mortar and repoint.

3.7 PAINTING STEEL UNCOVERED DURING THE WORK

- A. Notify Architect if steel is exposed during cast-stone removal. Where Architect determines that it is structural, or for other reasons cannot be totally removed, prepare and paint steel as follows:
 - 1. Surface Preparation: Remove paint, rust, and other contaminants according to SSPC-SP 2, "Hand Tool Cleaning," SSPC-SP 3, "Power Tool Cleaning," or SSPC-



SP 6/NACE No. 3, "Commercial Blast Cleaning," as applicable to comply with paint manufacturer's recommended preparation.

2. Antirust Coating: Immediately paint exposed steel with two coats of antirust coating, following coating manufacturer's written instructions and without exceeding manufacturer's recommended rate of application (dry film thickness per coat).

- B. If on inspection and rust removal, the thickness of a steel member is found to be reduced from rust by more than 1/16 (1.6) inch (mm), notify Architect before proceeding.

3.8 CAST-STONE CRACK INJECTION

- A. General: Comply with cementitious crack-filler manufacturer's written instructions.
- B. Drill 1/4-inch- (6-mm-) diameter injection holes as follows:
 1. Transverse Cracks Less Than 3/8 inch (9 mm) Wide: Drill holes through center of crack at 12 to 18 inches (300 to 500 mm) o.c.
 2. Transverse Cracks More Than 3/8 inch (9 mm) Wide: Drill holes through center of crack at 18 to 36 inches (500 to 900 mm) o.c.
 3. Delaminations: Drill holes at approximately 18 inches (500 mm) o.c., both vertically and horizontally.
 4. Drill holes 2 inches (50 mm) deep.
- C. Clean out drill holes and cracks with compressed air and water. Remove dirt and organic matter, loose material, sealants, and failed crack repair materials.
- D. Place plastic injection ports in drilled holes, and seal face of cracks between injection ports with clay or other nonstaining, removable plugging material. Leave openings at upper ends of cracks for air release.
- E. Inject cementitious crack filler through ports sequentially, beginning at one end of area and working to opposite end; where possible, begin at lower end of injection area and work upward. Inject filler until it extrudes from adjacent ports. After port has been injected, plug with clay or other suitable material, and begin injecting filler at adjacent port, repeating process until all ports have been injected.
- F. Clean cementitious crack filler from face of cast-stone before it sets, by scrubbing with water.
- G. After cementitious crack filler has set, remove injection ports, plugging material, and excess filler. Patch injection holes and surface of cracks as specified in "Cast-Stone Patching" Article.

3.9 CAST-STONE PATCHING

- A. Patch the following cast-stone units unless another type of repair or replacement is indicated:



1. Units indicated to be patched.
 2. Units with holes.
- B. Remove and replace existing patches where indicated.
- C. Remove deteriorated material, and remove adjacent material that has begun to deteriorate. Carefully remove additional material so patch does not have feathered edges but has square or slightly undercut edges on area to be patched and is at least 1/4 (6) inch (mm) thick, but not less than as recommended in writing by patching compound manufacturer.
- D. Mask adjacent mortar joint or rake out for repointing if patch extends to edge of cast-stone unit.
- E. Mix patching compound in individual batches to match each cast-stone unit being patched. Combine one or more colors of patching compound, as needed, to produce exact match.
- F. Brush-coat cast-stone surfaces with slurry coat of patching compound according to manufacturer's written instructions.
- G. Place patching compound in layers as recommended in writing by patching compound manufacturer, but not less than 1/4 inch (6 mm) or more than 2 inches (50 mm) thick. Roughen surface of each layer to provide a key for next layer.
1. Simple Details: Trowel, scrape, or carve surface of patch to match texture and surrounding surface plane or contour of the cast-stone. Shape and finish surface before or after curing, as determined by testing, to best match existing cast-stone.
 2. Carved Details: Build patch up 1/4 inch (6 mm) above surrounding cast-stone, and carve surface to match adjoining cast-stone after patching compound has hardened.
- H. Keep each layer damp for 72 hours or until patching compound has set.
- I. Remove and replace patches with hairline cracks or that show separation from cast-stone at edges, and those that do not match adjoining cast-stone in color or texture.

3.10 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed cast-stone surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water applied by low-pressure spray.
1. Do not use metal scrapers or brushes.
 2. Do not use acidic or alkaline cleaners.
- B. Clean adjacent nonstone surfaces. Use detergent and soft brushes or cloths.
- C. Clean mortar and debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.



- D. Remove masking materials, leaving no residues that could trap dirt.
- E. Sweep and rake adjacent pavement and grounds to remove mortar and debris. Where necessary, pressure-wash pavement surfaces to remove mortar, dust, dirt, and stains.

3.11 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage qualified testing agencies to perform tests and inspections. Allow inspectors use of lift devices and scaffolding, as needed, to perform inspections.
- B. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.
- C. Notify Architect's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Architect's Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

3.12 STONE-WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess cast-stone materials are Contractor's property.
- B. Cast-Stone Waste: Remove stone waste and legally dispose of off Owner's property.

END OF SECTION 04 03 42



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SECTION 040343 - HISTORIC STONE MASONRY REPOINTING**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section includes historic treatment work consisting of repointing cast-stone masonry joints with mortar.
- B. Related Requirements:
 - 1. Section 02 42 96 "Historic Removal and Dismantling" for historic removal and dismantling work;
 - 2. Section 04 03 22 "Historic Brick Unit Masonry Repair";
 - 3. Section 04 03 23 "Historic Brick Unit Masonry Repointing";
 - 4. Section 04 03 42 "Historic Cast-Stone Masonry Repair";
 - 5. Section 04 20 00 "Unit Masonry Rebuilding";
 - 6. Section 04 72 00 "Cast Stone Masonry Rebuilding";
 - 7. Section 07 92 00 "Joint Sealants".

1.3 DEFINITIONS

- A. Low-Pressure Spray:
 - 1. Pressure: 100 to 400 (690 to 2750) psi (kPa).
 - 2. Flow Rate: 4 to 6 (0.25 to 0.4) gpm (L/s).
- B. Rift: The most pronounced direction of splitting or cleavage of a stone. Rift may be obscure in igneous rocks such as granite. Often it is obvious, as with bedding planes in many sedimentary stones.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference on historic masonry repair and repointing at Project site.
 - 1. Review minutes of Preliminary Historic Treatment Conference that pertain to masonry historic treatment and repointing.



2. Review methods and procedures related to repointing historic stone masonry including, but not limited to, the following:
 - a. Verify historic treatment specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
 - b. Materials, material application, sequencing, tolerances, and required clearances.
 - c. Quality-control program.
 - d. Fire-protection plan.
 - e. Stone historic treatment program.
 - f. Coordination with building occupants.

1.5 SEQUENCING AND SCHEDULING

- A. Order sand and gray portland cement for pointing mortar immediately after approval of samples and mockups. Take delivery of and store at Project site a sufficient quantity to complete Project.
- B. Work Sequence: Perform stone historic treatment work in the following sequence, which includes work specified in this and other Sections:
 1. Inspect for open mortar joints and permanently or temporarily point them before cleaning to prevent the intrusion of water and other cleaning materials into the wall.
 2. Clean stone.
 3. Rake out mortar from joints surrounding stone to be replaced and from joints adjacent to stone repairs along joints.
 4. Repair stonework, including replacing existing stone with new stone.
 5. Rake out mortar from joints to be repointed.
 6. Point mortar joints.
 7. After repairs and repointing have been completed and cured, perform a final cleaning to remove residues from this work.
 8. Where water repellents are to be used on or near stonework, delay application of these chemicals until after pointing and cleaning.
- C. As scaffolding is removed, patch anchor holes used to attach scaffolding. Patch holes in stone according to Section 040342 "Historic Stone Masonry Repair." Patch holes in mortar joints according to Part 3 "Repointing" Article.

1.6 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 "Submittal Procedures".

1.7 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
 2. Include recommendations for product application and use.



3. Include test data substantiating that products comply with requirements.

B. Shop Drawings:

1. Include plans, elevations, sections, and locations of repointing work on the structure.
2. Show provisions for expansion joints or other sealant joints.
3. Show locations of scaffolding and points of scaffolding in contact with masonry. Include details of each point of contact or anchorage.

C. Samples for Initial Selection: For the following:

1. Pointing Mortar: Submit sets of mortar for pointing in the form of sample mortar strips, 6 inches (150 mm) long by 1/2 inch (13 mm) wide, set in aluminum or plastic channels.
 - a. Have each set contain a close color range of at least six Samples of different mixes of colored sands and cements that produce a mortar matching existing, cleaned mortar when cured and dry.
 - b. Submit with precise measurements on ingredients, proportions, gradations, and sources of colored sands from which each Sample was made.
2. Each type of sand used for pointing mortar; minimum 8 oz. (240 mL) of each in plastic screw-top jars.
 - a. For blended sands, provide Samples of each component and blend. Identify blend ratio.
 - b. Identify sources, both supplier and quarry, of each type of sand.
3. Sealant materials.
4. Include similar Samples of accessories involving color selection.

D. Samples for Verification: For the following:

1. Each type, color, and texture of pointing mortar in the form of sample mortar strips, 6 inches (150 mm) long by 1/2 inch (13 mm) wide, set in aluminum or plastic channels.
 - a. Include with each Sample a list of ingredients with proportions of each. Identify sources, both supplier and quarry, of each type of sand and brand names of cementitious materials and pigments if any.
2. Sealant materials.
3. Accessories: Each type of anchor, accessory, and miscellaneous support.

1.8 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For historic treatment specialist including field supervisors and workers and testing service.
- B. Preconstruction Test Reports: For existing stone types and mortar.



- C. Quality-control program.
- D. Cast Stone historic treatment program.

1.9 QUALITY ASSURANCE

- A. Refer to DDC General Conditions Section 01 40 00 "Quality Requirements".
- B. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising worker performance and preventing damage.
- C. Cast Stone Historic Treatment Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of the historic treatment work, including protection of surrounding materials and Project site.
 - 1. Include methods for keeping pointing mortar damp during curing period.
 - 2. If materials and methods other than those indicated are proposed for any phase of historic treatment work, add to the quality-control program a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project.
- D. Mockups: Prepare mockups of historic treatment on existing surfaces to demonstrate aesthetic effects and to set quality standards for materials and execution.
 - 1. Repointing: Rake out joints in two separate areas, each approximately 36 inches (900 mm) high by 48 inches (1200 mm) wide for each type of repointing required, and repoint one of the areas.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.10 PRECONSTRUCTION TESTING

- A. Preconstruction Testing Service: Engage a qualified testing agency to perform preconstruction testing on stone units as follows:
 - 1. Provide test specimens as indicated and representative of proposed materials and existing construction.
 - 2. Existing Mortar: Test according to ASTM C1324, modified as agreed by testing service and Architect for Project requirements, to determine proportional composition of original ingredients, sizes and colors of aggregates, and approximate strength. Use x-ray diffraction, infrared spectroscopy, and differential thermal analysis to supplement microscopical methods. Carefully remove existing mortar for testing from within joints at five locations designated by testing service.



3. Temporary Patch: As directed by Architect, provide temporary materials at locations from which existing samples were taken.

1.11 DELIVERY, STORAGE, AND HANDLING

- A. Deliver packaged materials to Project site in manufacturer's original and unopened containers, labeled with manufacturer's name and type of products.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store hydrated lime in manufacturer's original and unopened containers. Discard lime if containers have been damaged or have been opened for more than two days.
- D. Store sand where grading and other required characteristics can be maintained and contamination avoided.

1.12 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit repointing work to be performed according to product manufacturers' written instructions and specified requirements.
- B. Temperature Limits: Repoint mortar joints only when air temperature is between 40 and 90 deg F (4 and 32 deg C) and is predicted to remain so for at least seven days after completion of the Work unless otherwise indicated.
- C. Cold-Weather Requirements: Comply with the following procedures for mortar-joint pointing unless otherwise indicated:
 1. When air temperature is below 40 deg F (4 deg C), heat mortar ingredients and existing stone to produce temperatures between 40 and 120 deg F (4 and 49 deg C).
 2. When mean daily air temperature is below 40 deg F (4 deg C), provide enclosure and heat to maintain temperatures above 32 deg F (0 deg C) within the enclosure for seven days after pointing.
- D. Hot-Weather Requirements: Protect mortar-joint pointing when temperature and humidity conditions produce excessive evaporation of water from mortar materials. Provide artificial shade and wind breaks, and use cooled materials as required to minimize evaporation. Do not apply mortar to substrates with temperatures of 90 deg F (32 deg C) and above unless otherwise indicated.
- E. For manufactured repair materials, perform work within the environmental limits set by each manufacturer.



PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Source Limitations: Obtain each type of material for repointing historic masonry (cement, sand, etc.) from single source with resources to provide materials of consistent quality in appearance and physical properties.

2.2 MORTAR MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I or Type II; white or gray or both, where required for color matching of mortar.
 - 1. Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C114.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Mortar Sand: ASTM C144 unless otherwise indicated.
 - 1. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands if necessary to achieve suitable match.
 - 2. Color: Natural sand or ground marble, granite, or other sound stone of color necessary to produce required mortar color.
 - 3. Provide sand with rounded edges.
 - 4. Refer to "Jablonski Building Conservation" materials testing report.
- D. Mortar Pigments: ASTM C979/C979M, compounded for use in mortar mixes, and having a record of satisfactory performance in masonry mortars.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Davis Colors;
 - b. Lanxess Corporation;
 - c. Solomon Colors, Inc;
 - d. Or approved equal.
- E. Water: ASTM C270, potable.

2.3 ACCESSORY MATERIALS

- A. Masking Tape: Nonstaining, nonabsorbent material; compatible with mortar, joint primers, sealants, and surfaces adjacent to joints; and that easily comes off entirely, including adhesive.



- B. Other Products: Select materials and methods of use based on the following, subject to approval of a mockup:
1. Previous effectiveness in performing work involved.
 2. Minimal possibility of damaging exposed surfaces.
 3. Consistency of each application.
 4. Uniformity of the resulting overall appearance.
 5. Do not use products or tools that could do the following:
 - a. Remove, alter, or harm the present condition or future preservation of existing surfaces, including surrounding surfaces not in contract.
 - b. Leave residue on surfaces.

2.4 MORTAR MIXES

- A. Measurement and Mixing: Measure cementitious materials and sand in a dry condition by volume or equivalent weight. Do not measure by shovel; use known measure. Mix materials in a clean, mechanical batch mixer.
1. Mixing Pointing Mortar: Thoroughly mix cementitious materials and sand together before adding any water. Then mix again, adding only enough water to produce a damp, unworkable mix that will retain its form when pressed into a ball. Maintain mortar in this dampened condition for 15 to 30 minutes. Add remaining water in small portions until mortar reaches desired consistency. Use mortar within one hour of final mixing; do not retemper or use partially hardened material.
- B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without Architect's approval.
1. Mortar Pigments: Where mortar pigments are indicated, do not add pigment exceeding 10 percent by weight of the cementitious or binder materials, except for carbon black, which is limited to 2 percent, unless otherwise demonstrated by a satisfactory history of performance. Where mortar pigments are indicated, do not exceed a pigment-to-cement ratio of 1:10 by weight.
- C. Do not use admixtures in mortar unless otherwise indicated.
- D. Mixes: Mix mortar materials in the following proportions:
1. Pointing Mortar by Type: ASTM C270, Proportion Specification, Type N unless otherwise indicated; with cementitious material limited to portland cement and lime. Add mortar pigments to produce mortar colors required.
- E. Refer to "Jablonski Building Conservation" materials testing report.



PART 3 - EXECUTION

3.1 EXECUTION REQUIREMENTS

- A. Refer to DDC General Conditions for execution requirements.

3.2 PROTECTION

- A. Prevent mortar from staining face of surrounding stone and other surfaces.
 - 1. Cover sills, ledges, and other projecting items to protect them from mortar droppings.
 - 2. Keep wall area wet below rebuilding and pointing work to discourage mortar from adhering.
 - 3. Immediately remove mortar splatters in contact with exposed stone and other surfaces.
- B. Remove gutters and downspouts and associated hardware adjacent to immediate work area and store during stone repointing work. Reinstall when repointing is complete.
 - 1. Provide temporary rain drainage during work to direct water away from building.

3.3 CAST STONE REPOINTING, GENERAL

- A. Have repointing work performed only by qualified historic treatment specialist.
- B. Appearance Standard: Repointed surfaces are to have a uniform appearance as viewed from 20 (6) feet (m) away by Architect.

3.4 REPOINTING

- A. Rake out and repoint joints to the following extent:
 - 1. All joints in areas indicated.
- B. Do not rake out and repoint joints where not required.
- C. Rake out joints as follows, according to procedures demonstrated in approved mockup:
 - 1. Remove mortar from joints to depth of 2-1/2 times the joint width, but not less than 1/2 inch (13 mm) and not less than that required to expose sound, unweathered mortar. Do not remove unsound mortar more than 2 (50) inches (mm) deep; consult Architect for direction.
 - 2. Remove mortar from stone surfaces within raked-out joints to provide reveals with square backs and to expose stone for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
 - 3. Do not spall edges of stone units or widen joints. Replace or patch damaged stone units as directed by Architect.



- a. Cut out mortar by hand with chisel and resilient mallet. Do not use power-operated grinders without Architect's written approval based on approved quality-control program.
 - b. Cut out center of mortar bed joints using angle grinders with diamond-impregnated metal blades. Remove remaining mortar in bed joints and mortar in head joints by hand with chisel and resilient mallet. Strictly adhere to approved quality-control program.
- D. Notify Architect of unforeseen detrimental conditions, including voids in mortar joints, cracks, loose stone, rotted wood, rusted metal, and other deteriorated items.
- E. Pointing with Mortar:
 1. Rinse joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at time of pointing, joint surfaces are damp but free of standing water. If rinse water dries, dampen joint surfaces before pointing.
 2. Apply pointing mortar first to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 (9) inch (mm) until a uniform depth is formed. Fully compact each layer thoroughly, and allow it to become thumbprint hard before applying next layer.
 3. After deep areas have been filled to same depth as remaining joints, point joints by placing mortar in layers not greater than 3/8 (9) inch (mm). Fully compact each layer, and allow it to become thumbprint hard before applying next layer. Where existing stone has worn or rounded edges, slightly recess finished mortar surface below face of stone to avoid widened joint faces. Take care not to spread mortar beyond joint edges onto exposed stone surfaces or to featheredge the mortar.
 4. When mortar is thumbprint hard, tool joints to match original appearance of joints as demonstrated in approved mockup. Remove excess mortar from edge of joint by brushing.
 5. Cure mortar by maintaining in thoroughly damp condition for at least 72 consecutive hours, including weekends and holidays.
 - a. Acceptable curing methods include covering with wet burlap and plastic sheeting, periodic hand misting, and periodic mist spraying using system of pipes, mist heads, and timers.
 - b. Adjust curing methods to ensure that pointing mortar is damp throughout its depth without eroding surface mortar.
 6. Hairline cracking within the mortar or mortar separation at edge of a joint is unacceptable. Remove mortar and repoint.
- F. Where repointing work precedes cleaning of existing stone, allow mortar to harden at least 30 days before beginning cleaning work.

3.5 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed stone surfaces of excess mortar and foreign matter; use wood scrapers, stiff-nylon or -fiber brushes, and clean water applied by low-pressure spray.



1. Do not use metal scrapers or brushes.
 2. Do not use acidic or alkaline cleaners.
- B. Clean adjacent nonstone surfaces. Use detergent and soft brushes or cloths.
- C. Clean mortar and debris from roof; remove debris from gutters and downspouts. Rinse off roof and flush gutters and downspouts.
- D. Remove masking materials, leaving no residues that could trap dirt.

3.6 FIELD QUALITY CONTROL

- A. Architect's Project Representatives: Architect will assign Project representatives to help carry out Architect's responsibilities at the site, including observing progress and quality of portion of the Work completed. Allow Architect's Project representatives use of lift devices and scaffolding, as needed, to observe progress and quality of portion of the Work completed.
- B. Notify Architect's Project representatives in advance of times when lift devices and scaffolding will be relocated. Do not relocate lift devices and scaffolding until Architect's Project representatives have had reasonable opportunity to make inspections and observations of work areas at lift device or scaffold location.

END OF SECTION 04 03 43



SECTION 04 20 00 - UNIT MASONRY REBUILDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section Includes:

- 1. Building (common) brick.
 - 2. Face brick.
 - 3. Mortar.
 - 4. Steel reinforcing bars.
 - 5. Masonry-joint reinforcement.
 - 6. Embedded flashing.
 - 7. Miscellaneous masonry accessories.

- B. Products Installed but not Furnished under This Section:

- 1. Cast-stone trim in unit masonry.

- C. Related Requirements:

- 1. Section 04 03 22 "Historic Brick Unit Masonry Repair";
 - 2. Section 04 03 23 "Historic Brick Unit Masonry Repointing";
 - 3. Section 04 03 42 "Historic Cast Stone Masonry Repair";
 - 4. Section 04 03 43 "Historic Cast Stone Masonry Repointing";
 - 5. Section 04 72 00 "Cast Stone Masonry Rebuilding";
 - 6. Section 07 62 00 "Sheet Metal Flashing and Trim";
 - 7. Section 07 91 00 "Preformed Joint Seals";
 - 8. Section 07 92 00 "Joint Sealants".

1.3 ALLOWANCES

- A. Face brick is part of the Face Brick Allowance.

1.4 DEFINITIONS

- A. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.



1.5 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.6 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 "Submittal Procedures".

1.7 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For the following:
 - 1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
 - 2. Cast Stone Trim Units: Show sizes, profiles, and locations of each stone trim unit required.
 - 3. Reinforcing Steel: Detail bending, lap lengths, and placement of unit masonry reinforcing bars. Comply with ACI 315.
 - 4. Fabricated Flashing: Detail corner units, end-dam units, and other special applications.
- C. Design Submittal: Contractor to provide design, shop drawings and structural calculations for new parapet construction, signed and sealed by a Professional Engineer, licensed in the State of New York, certifying that the design meets applicable codes for Commissioner's review and approval.
- D. Samples for Initial Selection:
 - 1. Face brick, in the form of straps of five or more bricks.
 - 2. Colored mortar.
- E. Samples for Verification: For each type and color of the following:
 - 1. Face brick, in the form of straps of five or more bricks.
 - 2. Special brick shapes.
 - 3. Pigmented and colored-aggregate mortar. Make Samples using same sand and mortar ingredients to be used on Project.
 - 4. Accessories embedded in masonry.

1.8 INFORMATIONAL SUBMITTALS

- A. List of Materials Used in Constructing Mockups: List generic product names together with manufacturers, manufacturers' product names, model numbers, lot numbers, batch numbers, source of supply, and other information as required to identify materials used. Include mix proportions for mortar and grout and source of aggregates.



1. Submittal is for information only. Receipt of list does not constitute approval of deviations from the Contract Documents unless such deviations are specifically brought to the attention of Commissioner and approved in writing.
 - B. Qualification Data: For testing agency.
 - C. Material Certificates: For each type and size of the following:
 1. Masonry units.
 - a. Include data on material properties.
 - b. For brick, include size-variation data verifying that actual range of sizes falls within specified tolerances.
 - c. For exposed brick, include test report for efflorescence according to ASTM C67.
 - d. For masonry units used in structural masonry, include data and calculations establishing average net-area compressive strength of units.
 2. Cementitious materials. Include name of manufacturer, brand name, and type.
 3. Mortar admixtures.
 4. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
 5. Grout mixes. Include description of type and proportions of ingredients.
 6. Reinforcing bars.
 7. Joint reinforcement.
 8. Anchors, ties, and metal accessories.
 - D. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.
 1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C109/C109M for compressive strength, ASTM C1506 for water retention, and ASTM C91/C91M for air content.
 2. Include test reports, according to ASTM C1019, for grout mixes required to comply with compressive strength requirement.
 - E. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to TMS 602/ACI 530.1/ASCE 6.
 - F. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.
 - G. Steel reinforcement and accessories.
- 1.9 QUALITY ASSURANCE
- A. Refer to DDC General Conditions Section 01 40 00 "Quality Requirements".
 - B. Testing Agency Qualifications: Qualified according to ASTM C1093 for testing indicated.



- C. Sample Panels: Build sample panels to verify selections made under Sample submittals and to demonstrate aesthetic effects. Comply with requirements in Section 014000 "Quality Requirements" for mockups.
1. Build sample panels for each type of exposed unit masonry construction in sizes approximately 48 inches (1200 mm) long by 36 inches (900 mm) high by full thickness.
 2. Build sample panels facing south.
 3. Where masonry is to match existing, build panels adjacent and parallel to existing surface.
 4. Clean exposed faces of panels with masonry cleaner indicated.
 5. Protect approved sample panels from the elements with weather-resistant membrane.
 6. Approval of sample panels is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; aesthetic qualities of workmanship; and other material and construction qualities specifically approved by Commissioner in writing.
 - a. Approval of sample panels does not constitute approval of deviations from the Contract Documents contained in sample panels unless Commissioner specifically approves such deviations in writing.
- D. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
1. Build mockup of typical wall area as shown on Drawings.
 2. Build mockups for each type of exposed unit masonry construction in sizes approximately 48 inches (1200 mm) long by 36 inches (900 mm) high by full thickness, including face and backup wythes and accessories.
 - a. Include through-wall flashing installed for a 24-inch (600-mm) length in corner of exterior wall mockup approximately 16 inches (400 mm) down from top of mockup, with a 12-inch (300-mm) length of flashing left exposed to view (omit masonry above half of flashing).
 - b. Include metal flashing in exterior masonry wall mockup.
 3. Where masonry is to match existing, erect mockups adjacent and parallel to existing surface.
 4. Clean exposed faces of mockups with masonry cleaner as indicated.
 5. Protect accepted mockups from the elements with weather-resistant membrane.
 6. Approval of mockups is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; and aesthetic qualities of workmanship.
 - a. Approval of mockups is also for other material and construction qualities specifically approved by Commissioner in writing.
 - b. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Commissioner specifically approves such deviations in writing.



7. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.10 DELIVERY, STORAGE, AND HANDLING

- A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- D. Deliver preblended, dry mortar mix in moisture-resistant containers. Store preblended, dry mortar mix in delivery containers on elevated platforms in a dry location or in covered weatherproof dispensing silos.
- E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.11 FIELD CONDITIONS

- A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 1. Extend cover a minimum of 24 inches (600 mm) down both sides of walls, and hold cover securely in place.
 2. Where one wythe of multiwythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches (600 mm) down face next to unconstructed wythe, and hold cover in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.
 1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
 2. Protect sills, ledges, and projections from mortar droppings.
 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
 4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.



- D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.
 - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.
- E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.
- B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.

2.2 PERFORMANCE REQUIREMENTS

- A. Provide structural unit masonry that develops indicated net-area compressive strengths at 28 days.
 - 1. Determine net-area compressive strength of masonry from average net-area compressive strengths of masonry units and mortar types (unit-strength method) according to TMS 602/ACI 530.1/ASCE 6.
 - 2. Determine net-area compressive strength of masonry by testing masonry prisms according to ASTM C1314.

2.3 UNIT MASONRY, GENERAL

- A. Masonry Standard: Comply with TMS 602/ACI 530.1/ASCE 6, except as modified by requirements in the Contract Documents.
- B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work.
- C. Fire-Resistance Ratings: Comply with requirements for fire-resistance-rated assembly designs indicated.



1. Where fire-resistance-rated construction is indicated, units shall be listed and labeled by a qualified testing agency acceptable to authorities having jurisdiction.

2.4 BRICK

- A. General: Provide shapes indicated and as follows, with exposed surfaces matching finish and color of exposed faces of adjacent units:

1. For ends of sills and caps and for similar applications that would otherwise expose unfinished brick surfaces, provide units without cores or frogs and with exposed surfaces finished.
2. Provide special shapes for applications where stretcher units cannot accommodate special conditions, including those at corners, movement joints, bond beams, sashes, and lintels.
3. Provide special shapes for applications requiring brick of size, form, color, and texture on exposed surfaces that cannot be produced by sawing.
4. Provide special shapes for applications where shapes produced by sawing would result in sawed surfaces being exposed to view.

- B. Face Brick: Units, including molded, ground, cut, or sawed shapes as required to complete masonry repair work.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Glen-Gery Brick;
 - b. Belden Brick Company;
 - c. Consolidated Brick;
 - d. Or approved equal.
2. Brick Matching Existing: Units with colors, color variation within units, surface texture, size, and shape that match existing brickwork and with physical properties as listed below:
 - a. Physical Properties: According to ASTM C67 and as follows:
 - 1) Grade: SW
 - 2) Type: FBX or HBX.
 - 3) Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 3350 psi (23.10 MPa).
 - 4) Initial Rate of Absorption: Less than 30 g/30 sq. in. (30 g/194 sq. cm) per minute when tested per ASTM C 67.
 - 5) Efflorescence: Provide brick that has been tested according to ASTM C 67 and is rated "not effloresced."
 - 6) Surface Coating: Brick with colors or textures produced by application of coatings shall withstand 50 cycles of freezing and thawing per ASTM C 67 with no observable difference in the applied finish when viewed from 10 feet (3 m) or shall have a history of successful use in Project's area.
 - 7) Application: Use where brick is exposed unless otherwise indicated.



- 8) Provide face brick matching color range, texture and size of existing adjacent brickwork.
- b. Color and Texture: Provide face brick matching color range, texture, and size of existing adjacent brickwork.
 - c. For existing brickwork that exhibits a range of colors or color variation within units, provide brick that proportionally matches that range and variation rather than brick that matches an individual color within that range.
3. Special Shapes:
 - a. Provide molded, 100 percent solid shapes for applications where core holes or "frogs" could be exposed to view or weather when in final position, and where shapes produced by sawing would result in sawed surfaces being exposed to view.
 - b. Provide specially ground units, shaped to match patterns, for arches and where indicated.
 - c. Mechanically chopping or breaking brick, or bonding pieces of brick together by adhesive, are unacceptable procedures for fabricating special shapes.
4. Tolerances as Fabricated: According to tolerance requirements in ASTM C216, Type FBX.
- C. Building Brick: ASTM C62, of same vertical dimension as face brick, for masonry work concealed from view.
 1. Grade SW where in contact with earth.
 2. Grade SW for concealed backup.
 3. Dimension: To match existing.
 4. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 3350 psi (23.10 MPa)
 5. Application: Use where brick is indicated for concealed locations. Face brick complying with requirements for grade, compressive strength, and size indicated for building brick may be substituted for building brick.

2.5 MORTAR MATERIALS

- A. Portland Cement: ASTM C150/C150M, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color matching existing mortar.
 1. Alkali content shall not be more than 0.1 percent when tested according to ASTM C114.
- B. Hydrated Lime: ASTM C207, Type S.
- C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.



- D. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C979/C979M. Use only pigments with a record of satisfactory performance in masonry mortar.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - a. Davis Colors;
 - b. Lanxess Corporation;
 - c. Solomon Colors, Inc.;
 - d. Or approved equal.
- E. Aggregate for Mortar: ASTM C 144.
 - 1. For mortar that is exposed to view, use aggregate consisting of opaque and translucent quartz with rose and orange quartz with mica and dark lithic particles.
 - 2. Use grains rounded shape with range in size from very fine (1/16mm) to coarse (4mm).
 - 3. The color of the aggregates to be light greyish yellow (between Munsell 2.5Y7/2 and 8/2).
 - 4. Refer to "Jablonski Building Conservation" materials testing report.
- F. Water: ASTM C 270, potable.

2.6 REINFORCEMENT

- A. Deformed Epoxy Coated Steel Reinforcing Bars: ASTM A 706, Grade 60 (Grade 420).
- B. Epoxy Coated Steel Threaded Couplers, Size #4:
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to the following:
 - a. Dayton Superior Corporation: D310 Taper-Lock Standard Coupler;
 - b. Or approved equal.
- C. Masonry-Joint Reinforcement, General: ASTM A951/A951M.
 - 1. Exterior Walls: Stainless steel, Type 304.
 - 2. Wire Size for Side Rods: 9 Gauge.
 - 3. Wire Size for Cross Rods: 9 Gauge.
 - 4. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches (407 mm) o.c.
 - 5. Provide in lengths of not less than 10 feet (3 m).
- D. Masonry-Joint Reinforcement for Multiwythe Masonry:
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to the following:
 - a. Hohmann & Barnard, Inc.; 12 Truss-Mesh;



- b. Or approved equal.
 - 2. Truss type, with one side rod at each face shell of backing wythe sized to extend at least halfway through facing wythe, but with at least 5/8-inch (16-mm) cover on outside face.
- 2.7 EMBEDDED FLASHING MATERIALS
 - A. Metal Flashing: As indicated in section 076200 "Sheet Metal Flashing and Trim."
- 2.8 MISCELLANEOUS MASONRY ACCESSORIES
 - A. Stainless Steel, Type 304 joint stabilizing anchors.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to the following:
 - a. Hohmann & Barnard, Inc.; Slip-Set Stabilizer.
 - b. Or approved equal.
 - B. Preformed, foam joint seals for expansion joints: As specified in section 079100 "Preformed Joint Seals."
 - C. Compressible Filler: Premolded filler strips complying with ASTM D1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene.
 - D. Liquid applied PMMA flashing: As indicated in section 071416 "Cold Fluid Applied Waterproofing."
- 2.9 MORTAR MIXES
 - A. Mortar: As indicated in section 04 03 23 "Historic Brick Unit Masonry Repointing."

PART 3 - EXECUTION

- 3.1 EXECUTION REQUIREMENTS
 - A. Refer to DDC General Conditions for execution requirements.
- 3.2 EXAMINATION
 - A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.



1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
 2. Verify that foundations are within tolerances specified.
 3. Verify that reinforcing dowels are properly placed.
 4. Verify that substrates are free of substances that impair mortar bond.
- B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 INSTALLATION, GENERAL

- A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.
- B. Build chases and recesses to accommodate items specified in this and other Sections.
- C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match construction immediately adjacent to opening.
- D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.
- E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.
- F. Matching Existing Masonry: Match coursing, bonding, color, and texture of existing masonry.
- G. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. (30 g/194 sq. cm) per minute when tested according to ASTM C67. Allow units to absorb water so they are damp but not wet at time of laying.

3.4 TOLERANCES

- A. Dimensions and Locations of Elements:
1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch (12 mm) or minus 1/4 inch (6 mm).
 2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch (12 mm).
 3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch (6 mm) in a story height or 1/2 inch (12 mm) total.



B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 feet (6 mm in 3 m), or 1/2-inch (12-mm) maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2-inch (12-mm) maximum.
3. For vertical lines and surfaces, do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2-inch (12-mm) maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2-inch (12-mm) maximum.
5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet (6 mm in 3 m), 3/8 inch in 20 feet (9 mm in 6 m), or 1/2-inch (12-mm) maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet (6 mm in 3 m), or 1/2-inch (12-mm) maximum.
7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch (1.5 mm) except due to warpage of masonry units within tolerances specified for warpage of units.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm), with a maximum thickness limited to 1/2 inch (12 mm).
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch (3 mm).
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch (9 mm) or minus 1/4 inch (6 mm).
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch (3 mm). Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch (3 mm).
5. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch (1.5 mm) from one masonry unit to the next.

3.5 LAYING MASONRY WALLS

- A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.
- B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in bond pattern indicated on Drawings; do not use units with less-than-nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.
- C. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches (50 mm). Bond and interlock each course of each wythe at corners. Do not use units with less-than-nominal 4-inch (100-mm) horizontal face dimensions at corners or jambs.



- D. Stopping and Resuming Work: Stop work by stepping back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.
- E. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.
- F. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.

3.6 MORTAR BEDDING AND JOINTING

- A. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.
- B. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

3.7 COMPOSITE MASONRY

- A. Bond wythes of composite masonry together using bonding system indicated on Drawings.
- B. Collar Joints: Solidly fill collar joints by parging face of first wythe that is laid and shoving units of other wythe into place.
- C. Corners: Provide interlocking masonry unit bond in each wythe and course at corners unless otherwise indicated.
 - 1. Provide continuity with masonry-joint reinforcement at corners by using prefabricated L-shaped units as well as masonry bonding.
- D. Intersecting and Abutting Walls: Install vertical expansion joints as indicated on drawings.

3.8 MASONRY-JOINT REINFORCEMENT

- A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch (16 mm) on exterior side of walls, 1/2 inch (13 mm) elsewhere. Lap reinforcement a minimum of 6 inches (150 mm).
 - 1. Space reinforcement not more than 16 inches (406 mm) o.c.
 - 2. Space reinforcement not more than 8 inches (203 mm) o.c. in foundation walls and parapet walls.
- B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.
- C. Provide continuity at wall intersections by using prefabricated T-shaped units.



- D. Provide continuity at corners by using prefabricated L-shaped units.
- E. Cut and bend reinforcing units as directed by manufacturer for continuity at corners, returns and other special conditions.
- F. Install threaded couplers as recommended by manufacturer.

3.9 ANCHORING MASONRY TO STRUCTURAL STEEL AND CONCRETE

- A. Anchor masonry to structural steel and concrete, where masonry abuts or faces structural steel or concrete, to comply with the following:
 - 1. Anchor masonry with deformed epoxy coated rebars welded to existing spandrel beam.
 - 2. Space rebars as indicated, but not more than 12 inches o.c. horizontally.

3.10 CONTROL AND EXPANSION JOINTS

- A. General: Install control- and expansion-joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.
- B. Form expansion joints in brick as follows:
 - 1. Build flanges of metal expansion strips into masonry.
 - 2. Build in compressible joint fillers where indicated.
 - 3. Form open joint full depth of brick wythe and of width indicated, but not less than 3/4 inch for installation of sealant and backer rod specified in Section 079200 "Joint Sealants" and

3.11 FLASHING

- A. General: Install embedded flashing to downward flow of water in wall, and where indicated.
- B. Install flashing as follows unless otherwise indicated:
 - 1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
 - 2. At multiwythe masonry walls, extend flashing through outer wythe, turned up a minimum of 4 inches (100 mm), and through inner wythe to within 1/2 inch (13 mm) of the interior face of wall in exposed masonry. Where interior face of wall is to receive furring or framing, carry flashing completely through inner wythe and turn flashing up approximately 2 inches (50 mm) on interior face.



3.12 REINFORCED UNIT MASONRY

- A. Temporary Formwork and Shores: Construct formwork and shores as needed to support reinforced masonry elements during construction.
 - 1. Construct formwork to provide shape, line, and dimensions of completed masonry as indicated. Make forms sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
 - 2. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and that of other loads that may be placed on them during construction.
- B. Placing Reinforcement: Comply with requirements in TMS 602/ACI 530.1/ASCE 6.

3.13 FIELD QUALITY CONTROL

- A. Testing and Inspecting: The City of New York will engage special inspectors to perform tests and inspections and prepare reports. Allow inspectors access to scaffolding and work areas as needed to perform tests and inspections. Retesting of materials that fail to comply with specified requirements shall be done at Contractor's expense.

3.14 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.
- B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.
- C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.
- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
 - 1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 - 2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Commissioner's approval of sample cleaning before proceeding with cleaning of masonry.
 - 3. Protect adjacent stone and nonmasonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 - 4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.



5. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
6. Clean cast-stone copings to comply with stone supplier's written instructions.

3.15 MASONRY WASTE DISPOSAL

- A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.
- B. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above or recycled, and other masonry waste, and legally dispose of off the City of New York's property.

END OF SECTION 04 20 00



SECTION 04 72 00 - CAST STONE MASONRY REBUILDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section Includes:

- 1. Cast-stone trim including the following:

- a. Window sill units.
 - b. Coping units.
 - c. 6th floor cornice units.

- B. Related Sections:

- 1. Section 04 20 00 "Unit Masonry Rebuilding";
 - 2. Section 04 03 22 "Historic Brick Unit Masonry Repair";
 - 3. Section 04 03 23 "Historic Brick Unit Masonry Repointing";
 - 4. Section 04 03 42 "Historic Cast-Stone Masonry Repair";
 - 5. Section 04 03 43 "Historic Cast-Stone Masonry Repointing";
 - 6. Section 04 20 00 "Unit Masonry Rebuilding";
 - 7. Section 07 62 00 "Sheet Metal Flashing and Trim";
 - 8. Section 07 92 00 "Joint Sealants".

1.3 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 "Submittal Procedures".

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.

- 1. For cast-stone units, include construction details, material descriptions, dimensions of individual components and profiles, and finishes.



- B. Shop Drawings: Show existing conditions, fabrication and installation details for cast-stone units. Include dimensions, details of reinforcement and anchorages, and indication of finished faces.
 - 1. Include building elevations showing layout of units and locations of joints and anchors.
- C. Design Submittal: Contractor to provide design, shop drawings and structural calculations for cast-stone fabrication and installation, signed and sealed by a Professional Engineer, licensed in the State of New York, certifying that the design meets applicable codes for Commissioner's review and approval.
- D. Samples for Initial Selection: For colored mortar.
- E. Samples for Verification:
 - 1. For each color and texture of cast stone required, 10 inches (250 mm) square in size.
 - 2. For each trim shape required, 10 inches (250 mm) in length.
 - 3. For colored mortar, make Samples using same sand and mortar ingredients to be used on Project. Label Samples to indicate types and amounts of pigments used.
- F. Full-Size Samples: For each color, texture and shape of cast-stone unit required.
 - 1. Make available for Commissioner's review at Project site.
 - 2. Make Samples from materials to be used for units used on Project.
 - 3. Approved Samples may be installed in the Work.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer and testing agency.
 - 1. Include copies of material test reports for completed projects, indicating compliance of cast stone with ASTM C1364.
- B. Material Test Reports: For each mix required to produce cast stone, based on testing according to ASTM C1364, including test for resistance to freezing and thawing.
 - 1. Provide test reports based on testing within previous two years.

1.6 QUALITY ASSURANCE

- A. Refer to DDC General Conditions Section 01 40 00 "Quality Requirements".
- B. Manufacturer Qualifications: A qualified manufacturer of cast-stone units similar to those indicated for this Project, that has sufficient production capacity to manufacture required units, and is a plant certified by the Cast Stone Institute and /or the Architectural Precast Association.
- C. Testing Agency Qualifications: Qualified according to ASTM E329 for testing indicated.



- D. Mockups: Furnish cast stone for installation in mockups specified in Section 042000 "Unit Masonry."
- E. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Build mockup of typical wall area as shown on Drawings.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Coordinate delivery of cast stone with unit masonry work to avoid delaying the Work and to minimize the need for on-site storage.
- B. Pack, handle, and ship cast-stone units in suitable packs or pallets.
 - 1. Lift with wide-belt slings; do not use wire rope or ropes that might cause staining. Move cast-stone units if required, using dollies with wood supports.
 - 2. Store cast-stone units on wood skids or pallets with nonstaining, waterproof covers, securely tied. Arrange to distribute weight evenly and to prevent damage to units. Ventilate under covers to prevent condensation.
- C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- D. Store mortar aggregates where grading and other required characteristics can be maintained and contamination can be avoided.

1.8 PROJECT CONDITIONS

- A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Comply with cold-weather construction requirements in TMS 602/ACI 530.1/ASCE 6.
 - 1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F (4 deg C) and above and will remain so until cast stone has dried, but no fewer than seven days after completing cleaning.
- B. Hot-Weather Requirements: Comply with hot-weather construction requirements in TMS 602/ACI 530.1/ASCE 6.

1.9 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace cast stone units that shows evidence of deterioration within specified warranty period.
 - 1. Warranty Period: 10 years from date of Substantial Completion.



PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations for Cast Stone: Obtain cast-stone units from single source from single manufacturer.
- B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color, from one manufacturer for each cementitious component and from one source or producer for each aggregate.

2.2 CAST-STONE MATERIALS

- A. General: Comply with ASTM C1364.
- B. Portland Cement: ASTM C150/C150M, Type I or Type III, containing not more than 0.60 percent total alkali when tested according to ASTM C114. Provide natural color or white cement as required to produce cast-stone color indicated.
- C. Coarse Aggregates: Granite, quartz, or limestone complying with ASTM C33/C33M; gradation and colors as needed to produce required cast-stone textures and colors.
- D. Fine Aggregates: Natural sand or crushed stone complying with ASTM C33/C33M, gradation and colors as needed to produce required cast-stone textures and colors.
- E. Color Pigment: ASTM C979/C979M, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.
- F. Admixtures: Use only admixtures specified or approved in writing by Commissioner.
 - 1. Do not use admixtures that contain more than 0.1 percent water-soluble chloride ions by mass of cementitious materials. Do not use admixtures containing calcium chloride.
 - 2. Use only admixtures that are certified by manufacturer to be compatible with cement and other admixtures used.
 - 3. Air-Entraining Admixture: ASTM C260/C260M. Add to mixes for units exposed to the exterior at manufacturer's prescribed rate to result in an air content of 4 to 6 percent, except do not add to zero-slump concrete mixes.
 - 4. Water-Reducing Admixture: ASTM C494/C494M, Type A.
 - 5. Water-Reducing, Retarding Admixture: ASTM C494/C494M, Type D.
 - 6. Water-Reducing, Accelerating Admixture: ASTM C494/C494M, Type E.
- G. Reinforcement: Deformed steel bars complying with ASTM A615/A615M, Grade 60 (Grade 420). Use epoxy-coated reinforcement when covered with less than 1-1/2 inches (38 mm) of cast-stone material.
 - 1. Epoxy Coating: ASTM A775/A775M.



- H. Embedded Anchors and Other Inserts: Fabricated from stainless steel complying with ASTM A240/A240M, ASTM A276, or ASTM A666, Type 304.

2.3 CAST-STONE UNITS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
1. Architectural Molded Composites, Inc.;
 2. MJM Studios, Inc.;
 3. Towne House Restorations, Inc.;
 4. Or approved equal.
- B. Cast-Stone Units: Comply with ASTM C1364.
1. Units shall be manufactured using the wet-cast method.
 2. Units shall be resistant to freezing and thawing as determined by laboratory testing according to ASTM C666/C666M, Procedure A, as modified by ASTM C1364.
- C. Fabricate units with sharp arris and accurately reproduced details, with indicated texture on all exposed surfaces unless otherwise indicated.
1. Slope exposed horizontal surfaces 1:12 to drain unless otherwise indicated.
 2. Provide raised fillets at backs of sills and at ends indicated to be built into jambs.
 3. Provide drips on projecting elements unless otherwise indicated.
- D. Fabrication Tolerances:
1. Variation in Cross Section: Do not vary from indicated dimensions by more than 1/8 inch (3 mm).
 2. Variation in Length: Do not vary from indicated dimensions by more than 1/360 of the length of unit or 1/8 inch (3 mm), whichever is greater, but in no case by more than 1/4 inch (6 mm).
 3. Warp, Bow, and Twist: Not to exceed 1/360 of the length of unit or 1/8 inch (3 mm), whichever is greater.
 4. Location of Grooves, False Joints, Holes, Anchorages, and Similar Features: Do not vary from indicated position by more than 1/8 inch (3 mm) on formed surfaces of units and 3/8 inch (10 mm) on unformed surfaces.
- E. Cure Units as Follows:
1. Cure units in enclosed, moist curing room at 95 to 100 percent relative humidity and temperature of 100 deg F (38 deg C) for 12 hours or 70 deg F (21 deg C) for 16 hours.
 2. Keep units damp and continue curing to comply with one of the following:
 - a. No fewer than five days at mean daily temperature of 70 deg F (21 deg C) or above.
 - b. No fewer than six days at mean daily temperature of 60 deg F (16 deg C) or above.



- c. No fewer than seven days at mean daily temperature of 50 deg F (10 deg C) or above.
- d. No fewer than eight days at mean daily temperature of 45 deg F (7 deg C) or above.

F. Acid etch units after curing to remove cement film from surfaces to be exposed to view.

G. Colors and Textures: As selected by the City of New York and Commissioner from manufacturer's full range.

2.4 MORTAR MATERIALS

A. Provide mortar materials that comply with Section 040343 "Historic Cast-Stone Masonry Repointing."

2.5 ACCESSORIES

A. Anchors: Type and size indicated, fabricated from Type 304 stainless steel complying with ASTM A240/A240M, ASTM A276, or ASTM A666. Refer to drawings for installation spacing and minimum lengths of anchors.

- 1. Dowels: 1/2-inch diameter.
- 2. Eye Rod Dowel for coping stones: 3/8-inch diameter with threads.
- 3. Threaded Rod: 1/2-inch diameter.
- 4. Eye Bolts: 3/8-inch diameter eye bolt to be welded to existing spandrel beams as indicated on drawings.
- 5. Stone Anchors: 1/4-inch thick to be welded to steel structure as indicated on drawings.
- 6. Spring-loaded Dowels:

- a. Heckman Building Products, #355 S.S. Type 304 Threaded Spring Loaded Dowel (3/8");
- b. Or approved equal.

B. Supporting steel elements: Type and size indicated. Refer to drawings for installation spacing and minimum lengths of anchors.

- 1. Contractor to provide design, shop drawing and structural calculations for supporting steel elements, signed and sealed by a Professional Engineer, licensed in the State of New York, certifying that the design meets applicable codes for Commissioner's review and approval.

C. Anchor-Setting Mortar: One-part cementitious non-shrinking mortar designed for securing anchors in masonry, recommended by adhesive manufacturer for type of stone/anchor repair indicated.

- 1. Products:
 - a. Cathedral Stone Products, Inc.; Jahn M80 Anchor Setting Mortar;



- b. Edison Coatings, Inc.; Flexi-Weld 520T;
 - c. Or approved equal.
- D. Stone-to-Stone Adhesive: Two-part epoxy-resin stone adhesive with a 15- to 45-minute cure at 70 deg F (21 deg C), recommended in writing by adhesive manufacturer for type of stone repair indicated.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Akemi North America;
 - b. Bonstone Materials Corporation;
 - c. Edison Coatings, Inc.;
 - d. Or approved equal.

2.6 MORTAR MIXES

- A. Provide mortar materials that comply with Section 040343 "Historic Cast-Stone Masonry Repointing."

2.7 SOURCE QUALITY CONTROL

- A. Engage a qualified independent testing agency to sample and test cast-stone units according to ASTM C1364.
 - 1. Include one test for resistance to freezing and thawing.

PART 3 - EXECUTION

3.1 EXECUTION REQUIREMENTS

- A. Refer to DDC General Conditions for execution requirements.

3.2 EXAMINATION

- A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 SETTING CAST STONE IN MORTAR

- A. Install cast-stone units to comply with requirements in Section 042000 "Unit Masonry."



- B. Set cast stone as indicated on Drawings. Set units accurately in locations indicated, with edges and faces aligned according to established relationships and indicated tolerances.
 - 1. Install anchors, supports, fasteners, and other attachments indicated or necessary to secure units in place.
 - 2. Coordinate installation of cast stone with installation of flashing specified in other Sections.
- C. Wet joint surfaces thoroughly before applying mortar or setting in mortar.
- D. Set units in full bed of mortar with full head joints unless otherwise indicated.
 - 1. Set units with joints 3/8 to 1/2 inch (10 to 13 mm) wide unless otherwise indicated.
 - 2. Build anchors and ties into mortar joints as units are set.
 - 3. Fill dowel holes and anchor slots with mortar.
 - 4. Fill collar joints solid as units are set.
 - 5. Build concealed flashing into mortar joints as units are set.
 - 6. Keep head joints in copings and between other units with exposed horizontal surfaces open to receive sealant.
- E. Rake out joints for pointing with mortar to depths of not less than 3/4 inch (19 mm). Rake joints to uniform depths with square bottoms and clean sides. Scrub faces of units to remove excess mortar as joints are raked.
- F. Point mortar joints by placing and compacting mortar in layers not greater than 3/8 inch (10 mm). Compact each layer thoroughly and allow it to become thumbprint hard before applying next layer.
- G. Tool exposed joints slightly concave when thumbprint hard. Use a smooth plastic jointer larger than joint thickness.
- H. Rake out joints for pointing with sealant to depths of not less than 3/4 inch (19 mm). Scrub faces of units to remove excess mortar as joints are raked.
- I. Point joints with sealant to comply with applicable requirements in Section 079200 "Joint Sealants."
 - 1. Prime cast-stone surfaces to receive sealant and install compressible backer rod in joints before applying sealant unless otherwise indicated.
- J. Provide sealant joints at head joints of copings and other horizontal surfaces; at expansion, control, and pressure-relieving joints; and at locations indicated.
 - 1. Keep joints free of mortar and other rigid materials.
 - 2. Build in compressible foam-plastic joint fillers where indicated.
 - 3. Form joint of width indicated, but not less than 1/2 inch (13 mm).
 - 4. Prime cast-stone surfaces to receive sealant and install compressible backer rod in joints before applying sealant unless otherwise indicated.



5. Prepare and apply sealant of type and at locations indicated to comply with applicable requirements in Section 079200 "Joint Sealants."

3.4 ANCHOR INSTALLATION

- A. Minimum spacing of stone anchors into back-up to comply with NYCDOB applicable requirements and as indicated in drawings.
- B. Welding of steel supporting elements to steel framing to comply with NYCDOB applicable welding requirements and as indicated in drawings.
- C. Embed dowels 3" minimum into stone on each side of joint.
- D. Drill holes only slightly larger than rod diameter for a tight fit.
- E. Fill dowel holes and anchor slots with anchor setting adhesive.
- F. Set anchors in kerfs or holes in bed joints with anchor setting adhesive.

3.5 INSTALLATION TOLERANCES

- A. Variation from Plumb: Do not exceed 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2 inch (12 mm) maximum.
- B. Variation from Level: Do not exceed 1/8 inch in 10 feet (3 mm in 3 m), 1/4 inch in 20 feet (6 mm in 6 m), or 1/2 inch (12 mm) maximum.
- C. Variation in Joint Width: Do not vary joint thickness more than 1/8 inch in 36 inches (3 mm in 900 mm) or one-fourth of nominal joint width, whichever is less.
- D. Variation in Plane between Adjacent Surfaces (Lipping): Do not vary from flush alignment with adjacent units or adjacent surfaces indicated to be flush with units by more than 1/16 inch (1.5 mm), except where variation is due to warpage of units within tolerances specified.

3.6 ADJUSTING AND CLEANING

- A. Remove and replace stained and otherwise damaged units and units not matching approved Samples. Cast stone may be repaired if methods and results are approved by Commissioner.
- B. Replace units in a manner that results in cast stone matching approved Samples, complying with other requirements, and showing no evidence of replacement.
- C. In-Progress Cleaning: Clean cast stone as work progresses.
 1. Remove mortar fins and smears before tooling joints.
 2. Remove excess sealant immediately, including spills, smears, and spatter.



- D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed cast stone as follows:
1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
 2. Test cleaning methods on sample; leave one sample uncleaned for comparison purposes. Obtain Commissioner's approval of sample cleaning before proceeding with cleaning of cast stone.
 3. Protect adjacent surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
 4. Wet surfaces with water before applying cleaners; remove cleaners promptly by rinsing thoroughly with clear water.
 5. Clean cast stone by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
 6. Clean cast stone with proprietary acidic cleaner applied according to manufacturer's written instructions.

END OF SECTION 04 72 00



SECTION 07 14 16 - COLD FLUID-APPLIED WATERPROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section Includes:

- 1. Polymethylmethacrylate (PMMA) waterproofing resin.

- B. Related Requirements:

- 1. Section 04 20 00 "Unit Masonry Rebuilding";
 - 2. Section 04 72 00 "Cast Stone Masonry Rebuilding";
 - 3. Section 07 62 00 "Sheet Metal Flashing and Trim";
 - 4. Section 07 91 00 "Preformed Joint Seals";
 - 5. Section 07 92 00 "Joint Sealants".

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

- 1. Review waterproofing requirements including, but not limited to, the following:
 - a. Surface preparation specified in other Sections.
 - b. Minimum curing period.
 - c. Forecasted weather conditions.
 - d. Special details and sheet flashings.
 - e. Repairs.
 - f. Field quality control.

1.4 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 "Submittal Procedures".



1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, and tested physical and performance properties of waterproofing.
 - 2. Include manufacturer's written instructions for evaluating, preparing, and treating substrate.
- B. Shop Drawings:
 - 1. Show locations and extent of waterproofing.
 - 2. Include details for substrate joints, sheet flashings, inside and outside corners, tie-ins with adjoining waterproofing, and other termination conditions.
- C. Samples: For each exposed product and for each color and texture specified, including the following products:
 - 1. Flashing membrane, 8 by 8 inches (200 by 200 mm).

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Field quality-control reports.
- C. Sample Warranties: For special warranties.

1.7 QUALITY ASSURANCE

- A. Refer to DDC General Conditions Section 01 40 00 "Quality Requirements".
- B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by waterproofing manufacturer.
- C. Mockups: Build mockups to verify selections made under Sample submittals and to set quality standards for installation.
 - 1. Build mockup for each typical waterproofing installation including accessories to demonstrate surface preparation, joint treatments, inside and outside corner treatments, and protection.
 - a. Size: 100 sq. ft. (9.3 sq. m) in area.
 - b. Description: Installation above main cornice.



2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 FIELD CONDITIONS

- A. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended in writing by waterproofing manufacturer.
 1. Do not apply waterproofing to a damp or wet substrate, when relative humidity exceeds 85 percent, or when temperatures are less than 5 deg F (3 deg C) above dew point.
 2. Do not apply waterproofing in snow, rain, fog or mist, or when such weather conditions are imminent during application and curing period.
- B. Maintain adequate ventilation during application and curing of waterproofing materials.

1.9 WARRANTY

- A. Manufacturer's Special Warranty: Manufacturer agrees to repair or replace waterproofing that fails in materials or workmanship within specified warranty period.
 1. Warranty Period: 20 years from date of Substantial Completion.
- B. Installer's Special Warranty: Specified form, signed by Installer, covering Work of this Section, for warranty period of Five years.
 1. Warranty includes removing and reinstalling protection board, drainage panels, insulation, pedestals, and pavers on plaza decks.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations for Waterproofing System: Obtain waterproofing materials from single source from single manufacturer.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Siplast;
 - b. Kemper System;
 - c. Soprema;
 - d. Or approved equal.



2.2 SINGLE-COMPONENT POLYURETHANE WATERPROOFING

- A. Fluid applied reinforced flashing membrane assembly for flashing applications; A multi-component, flexible, polymethylmethacrylate (PMMA) based resin combined with a thixotropic agent for use in combination with fleece fabric to form a monolithic, reinforced flashing membrane.

- **Siplast Parapro 123 Fluid Applied reinforced flashing system**, or approved equal.

1. Catalyst: A reactive agent used to induce curing of polymethylmethacrylate (PMMA) resins.
 - a. Pro Catalyst by Siplast; Irving, TX
2. Fleece for Membrane and Flashing Reinforcement: A non-woven, 110 g/m², needle-punched polyester fabric reinforcement as supplied by the membrane system manufacturer.
 - a. Pro Fleece by Siplast; Irving, TX
3. Resin for Flashing Applications: A multi-component, flexible, polymethylmethacrylate (PMMA) based resin combined with a thixotropic agent for use in combination with fleece fabric to form a monolithic, reinforced flashing membrane.
 - a. Parapro Flashing Resin by Siplast; Irving, TX

2.3 AUXILIARY MATERIALS

- A. General: Provide auxiliary materials recommended in writing by waterproofing manufacturer for intended use and compatible with one another and with waterproofing.
1. Furnish liquid-type auxiliary materials that comply with VOC limits of authorities having jurisdiction.
- B. Primer: Manufacturer's standard primer, sealer, or surface conditioner; factory-formulated.
- C. Joint Reinforcing Strip: Manufacturer's recommended fiberglass mesh or polyester fabric.
- D. Joint Sealant: As indicated in the section 079200 "Joint Sealants".

PART 3 - EXECUTION

3.1 EXECUTION REQUIREMENTS

- A. Refer to DDC General Conditions for execution requirements.



3.2 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
 - 1. Verify that concrete has cured and aged for minimum time period recommended in writing by waterproofing manufacturer.
 - 2. Verify that substrate is visibly dry and within the moisture limits recommended in writing by manufacturer. Test for capillary moisture by plastic sheet method according to ASTM D4263.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 PREPARATION

- A. Clean, prepare, and treat substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrates for waterproofing application.
- B. Mask off adjoining surfaces not receiving waterproofing to prevent spillage and overspray affecting other construction.
- C. Remove grease, oil, bitumen, form-release agents, paints, curing compounds, acid residues, and other penetrating contaminants or film-forming coatings from concrete.
 - 1. Abrasive blast clean concrete surfaces uniformly to expose top surface of fine aggregate according to ASTM D4259 with a self-contained, recirculating, blast-cleaning apparatus. Remove material to provide a sound surface free of laitance, glaze, efflorescence, curing compounds, concrete hardeners, or form-release agents. Remove remaining loose material and clean surfaces according to ASTM D4258.
- D. Remove fins, ridges, and other projections, and fill honeycomb, aggregate pockets, holes, and other voids.

3.4 JOINT TREATMENT

- A. Prepare, treat, rout, and fill joints in substrate according to waterproofing manufacturer's written instructions and to recommendations in ASTM C898/C898M and ASTM C1471/C1471M. Before coating surfaces, remove dust and dirt from joints and cracks according to ASTM D4258.
 - 1. Comply with ASTM C1193 for joint-sealant installation.
 - 2. Apply bond breaker on sealant surface, beneath preparation strip.
 - 3. Prime substrate along each side of joint and apply a single thickness of preparation strip at least 6 inches (150 mm) wide along each side of joint. Apply waterproofing in two separate applications and embed a joint reinforcing strip in the first preparation coat.



3.5 WATERPROOFING APPLICATION

- A. Using masking tape, mask the perimeter of the area to receive the flashing system. Apply resin primer to substrates requiring additional preparation and allow primer to set.
- B. Preparation/Mixing/Catalyzing Resin Products: Pour the desired quantity of resin into a clean container and using a spiral mixer or mixing paddle, stir the liquid for the time period specified by the resin manufacturer. Calculate the amount of catalyst powder needed using the manufacturers guidelines and add the pre-measured catalyst to the primer. Mix again for the time period specified by the resin manufacturer, ensuring that the product is free from swirls and bubbles. It is imperative that air is not entrained into the product during the mixing process. To avoid aeration, do not use a spiral mixer unless the spiral section of the mixer can be fully contained in the liquid during the mixing process. Mix only enough product to ensure that it can be applied before expiration of resin pot life.
- C. Pre-cut fleece to ensure a proper fit at transitions and corners prior to membrane application.
- D. Apply an even, generous base coat of flashing resin using a roller at the rate of 19 kg/sq (2.0 kg/m²) to prepared surfaces requiring flashing coverage. Work the fleece into the wet, catalyzed resin using a brush or roller to fully embed the fleece in the resin and remove trapped air. Lap fleece layers a minimum of 2 inch (5 cm) and apply an additional coat of catalyzed resin between layers of overlapping fleece. Again using a roller, apply an even top coat of catalyzed resin at the rate of 12 kg/sq (1.3 kg/m²) immediately following embedment of the fleece, ensuring full saturation of the fleece. Ensure that the flashing resin is applied to extend a 0.25 inch (6 mm) beyond the fleece. Remove the tape before the catalyzed resin sets. Make allowances for saturation of roller covers and application equipment.
- E. Should work be interrupted for more than 12 hours or the surface of the catalyzed resin becomes dirty or contaminated by the elements, wipe the surface to be lapped with new flashing resin using the specified cleaner/solvent. Allow the surface to dry for a minimum 20 minutes and a maximum 60 minutes before continuing work.

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections:
 - 1. Testing agency shall verify thickness of waterproofing during application for each 600 sq. ft. (56 sq. m) of installed waterproofing or part thereof.
- B. Manufacturer's Field Service: Engage a site representative qualified by waterproofing membrane manufacturer to inspect substrate conditions, surface preparation, membrane application, flashings, protection, and drainage components and to furnish daily reports to Architect.
- C. Waterproofing will be considered defective if it does not pass tests and inspections.
- D. Contractor to provide manufacturer's technical reports during the progress work and at substantial completion.



3.7 PROTECTION

- A. Do not permit foot or vehicular traffic on unprotected membrane.
- B. Protect waterproofing from damage and wear during remainder of construction period.
- C. Correct deficiencies in or remove waterproofing that does not comply with requirements; repair substrates, reapply waterproofing, and repair sheet flashings.

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SECTION 07 62 00 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section Includes:

- 1. Manufactured through-wall flashing with snaplock receiver and with counterflashing.
 - 2. Formed and custom fabricated wall sheet metal fabrications.

- B. Related Requirements:

- 1. Section 04 03 22 "Historic Brick Unit Masonry Repair";
 - 2. Section 04 03 23 "Historic Brick Unit Masonry Repointing";
 - 3. Section 04 03 42 "Historic Cast-Stone Masonry Repair";
 - 4. Section 04 03 43 "Historic Cast-Stone Masonry Repointing";
 - 5. Section 04 20 00 "Unit Masonry Rebuilding";
 - 6. Section 04 72 00 "Cast Stone Masonry Rebuilding";
 - 7. Section 07 91 00 "Preformed Joint Seals";
 - 8. Section 07 92 00 "Joint Sealants".

1.3 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review construction schedule. Verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Review special roof details, roof drainage, roof-penetration flashing, equipment curbs, and condition of other construction that affect sheet metal flashing and trim.



3. Review requirements for insurance and certificates if applicable.
4. Review sheet metal flashing observation and repair procedures after flashing installation.

1.5 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 "Submittal Procedures".

1.6 ACTION SUBMITTALS

- A. Product Data: For each of the following
 1. Underlayment materials.
 2. Elastomeric sealant.
- B. Shop Drawings: For sheet metal flashing and trim.
 1. Include plans, elevations, sections, and attachment details.
 2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
 3. Include identification of material, thickness, weight, and finish for each item and location in Project.
 4. Include details for forming, including profiles, shapes, seams, and dimensions.
 5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
 6. Include details of termination points and assemblies.
 7. Include details of expansion joints and expansion-joint covers, including showing direction of expansion and contraction from fixed points.
 8. Include details of roof-penetration flashing.
 9. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, flashings, and counterflashings.
 10. Include details of special conditions.
 11. Include details of connections to adjoining work.
- C. Samples: For each exposed product and for each color and texture specified, 12 inches (300 mm) long by actual width.
- D. Samples for Initial Selection: For each type of sheet metal and accessory indicated with factory-applied finishes.
- E. Samples for Verification: For each type of exposed finish.
 1. Sheet Metal Flashing: 12 inches (300 mm) long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
 2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches (300 mm) long and in required profile. Include fasteners and other exposed accessories.



3. Unit-Type Accessories and Miscellaneous Materials: Full-size Sample.
4. Anodized Aluminum Samples: Samples to show full range to be expected for each color required.

1.7 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For fabricator.
- B. Product Certificates: For each type of coping and roof edge flashing that is ANSI/SPRI/FM 4435/ES-1 tested and FM Approvals approved.
- C. Product Test Reports: For each product, for tests performed by a qualified testing agency.
- D. Sample Warranty: For special warranty.

1.8 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.

1.9 QUALITY ASSURANCE

- A. Refer to DDC General Conditions Section 01 40 00 "Quality Requirements".
- B. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
 1. For copings and roof edge flashings that are ANSI/SPRI/FM 4435/ES-1 tested and FM Approvals approved, shop shall be listed as able to fabricate required details as tested and approved.
- C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for fabrication and installation.
 1. Build mockup of typical roof edge, including fascia, approximately 10 feet (3.0 m) long, including supporting construction cleats, seams, attachments, underlayment, and accessories.
 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Owner specifically approves such deviations in writing.
 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.



1.10 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.
 - 1. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
 - 2. Protect stored sheet metal flashing and trim from contact with water.
- B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

1.11 WARRANTY

- A. Special Warranty on Finishes: Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Delta units when tested in accordance with ASTM D2244.
 - b. Chalking in excess of a No. 8 rating when tested in accordance with ASTM D4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Finish Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and Reroofing" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.
- C. Sheet Metal Standard for Copper: Comply with CDA's "Copper in Architecture Handbook." Conform to dimensions and profiles shown unless more stringent requirements are indicated.



- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

2.2 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Zinc-Tin Alloy-Coated Copper Sheet (Base Flashing for parapet, flashing for cast-stone window sills and parapet's coping stones): ASTM B370, cold-rolled copper sheet, H00 temper; coated on both sides with zinc-tin alloy (50 percent zinc, 50 percent tin).
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Revere Copper Products, Inc.;
 - b. Or approved equal.
 - 2. Source Limitations: Obtain sheet from single source from single manufacturer.

2.3 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal.
 - 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
 - b. Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.
 - c. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.



2. Fasteners for Zinc-Tin Alloy-Coated Copper Sheet: Copper, hardware bronze or passivated Series 300 stainless steel.

C. Solder:

1. For Zinc-Tin Alloy-Coated Copper: ASTM B32, 100 percent tin, with maximum lead content of 0.2 percent, as recommended by sheet metal manufacturer.

D. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.

E. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated with factory-mitered and -welded corners and junctions and with interlocking counterflashing on exterior face, of same metal as reglet.

1. Source Limitations: Obtain reglets from single source from single manufacturer.
2. Material: Zinc-Tin Alloy-Coated Copper, 16 oz./sq. ft. (0.55 mm thick).
3. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
4. Masonry Type: Provide with offset top flange for embedment in masonry mortar joint.
5. Accessories:
 - a. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
 - b. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge.
6. Finish: With manufacturer's standard color coating.

2.4 FABRICATION, GENERAL

A. Custom fabricate sheet metal flashing and trim to comply with details indicated and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required.

1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
4. Form sheet metal flashing and trim to fit substrates without excessive oil-canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
5. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.



B. Fabrication Tolerances:

1. Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.
2. Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified.

C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.

1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
2. Use lapped expansion joints only where indicated on Drawings.

D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal in accordance with cited sheet metal standard to provide for proper installation of elastomeric sealant.

E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

F. Fabricate cleats and attachment devices of sizes as recommended by cited sheet metal standard for application, but not less than thickness of metal being secured.

G. Seams:

1. Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
2. Fabricate nonmoving seams with flat-lock seams. Form seams and seal with elastomeric sealant unless otherwise recommended by sealant manufacturer for intended use. Rivet joints where necessary for strength.

H. Do not use graphite pencils to mark metal surfaces.

2.5 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

A. Base Flashing: Fabricate from the following materials:

1. Zinc-Tin Alloy-Coated Copper: 16 oz./sq. ft. (0.55 mm thick).

B. Counterflashing: Fabricate from the following materials:

1. Zinc-Tin Alloy-Coated Copper: 16 oz./sq. ft. (0.55 mm thick).

C. Flashing Receivers: Fabricate from the following materials:

1. Zinc-Tin Alloy-Coated Copper: 16 oz./sq. ft. (0.55 mm thick).



D. Flashing below parapet's coping stones: Fabricate from the following materials:

1. Zinc-Tin Alloy-Coated Copper: 20 oz./sq. ft. (0.69 mm thick).

2.6 WALL SHEET METAL FABRICATIONS

A. Opening Flashings in Frame Construction: Fabricate sill flashing to extend 4 inches (100 mm) beyond wall openings. Form sill flashing with 2-inch- (50-mm-) high, end dams. Fabricate from the following materials:

1. Zinc-Tin Alloy-Coated Copper: 16 oz./sq. ft. (0.55 mm thick).

PART 3 - EXECUTION

3.1 EXECUTION REQUIREMENTS

A. Refer to DDC General Conditions for execution requirements.

3.2 EXAMINATION

A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.

1. Verify compliance with requirements for installation tolerances of substrates.
2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 INSTALLATION, GENERAL

A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.

1. Install fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
2. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds and sealant.
3. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.



4. Install sheet metal flashing and trim to fit substrates and to result in watertight performance.
 5. Install continuous cleats with fasteners spaced not more than 12 inches (300 mm) o.c.
 6. Space individual cleats not more than 12 inches (300 mm) apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
 7. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
 8. Do not field cut sheet metal flashing and trim by torch.
 9. Do not use graphite pencils to mark metal surfaces.
- B. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
1. Space movement joints at maximum of 10 feet (3 m) with no joints within 24 inches (600 mm) of corner or intersection.
 2. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
 3. Use lapped expansion joints only where indicated on Drawings.
- C. Fasteners: Use fastener sizes that penetrate substrate not less than recommended by fastener manufacturer to achieve maximum pull-out resistance.
- D. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- E. Seal joints as required for watertight construction.
1. Use sealant-filled joints unless otherwise indicated.
 - a. Embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant.
 - b. Form joints to completely conceal sealant.
 - c. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way.
 - d. Adjust setting proportionately for installation at higher ambient temperatures.
 - 1) Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."
- F. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter.
1. Pre-tin edges of sheets with solder to width of 1-1/2 inches (38 mm); however, reduce pre-tinning where pre-tinned surface would show in completed Work.
 2. Do not pre-tin zinc-tin alloy-coated copper.
 3. Do not use torches for soldering.
 4. Heat surfaces to receive solder, and flow solder into joint.
 - a. Fill joint completely.



- b. Completely remove flux and spatter from exposed surfaces.
- 5. Copper Soldering: Tin edges of uncoated sheets, using solder for copper.
- G. Rivets: Rivet joints in zinc where necessary for strength.

3.4 INSTALLATION OF ROOF FLASHINGS

- A. Install sheet metal flashing and trim to comply with performance requirements, sheet metal manufacturer's written installation instructions, and cited sheet metal standard.
 - 1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.
 - 2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Counterflashing: Coordinate installation of counterflashing with installation of base flashing.
 - 1. Insert counterflashing in reglets or receivers and fit tightly to base flashing.
 - 2. Extend counterflashing 4 inches (100 mm) over base flashing.
 - 3. Lap counterflashing joints minimum of 4 inches (100 mm).
 - 4. Secure in waterproof manner by means of interlocking folded seam or blind rivets and sealant unless otherwise indicated.

3.5 INSTALLATION OF WALL FLASHINGS

- A. Install sheet metal wall flashing to intercept and exclude penetrating moisture in accordance with cited sheet metal standard unless otherwise indicated. Coordinate installation of wall flashing with installation of wall-opening components such as windows, doors, and louvers.
- B. Opening Flashings in Frame Construction: Install continuous head, sill, jamb, and similar flashings to extend 4 inches (100 mm) beyond wall openings.
- C. Reglets: Installation of reglets is specified in Section 042000 "Unit Masonry."

3.6 INSTALLATION OF MISCELLANEOUS FLASHING

- A. Equipment Support Flashing:
 - 1. Coordinate installation of equipment support flashing with installation of roofing and equipment.
 - 2. Weld or seal flashing with elastomeric sealant to equipment support member.
- B. Overhead-Piping Safety Pans:
 - 1. Suspend pans from structure above, independent of other overhead items such as equipment, piping, and conduit, unless otherwise indicated on Drawings.
 - 2. Pipe and install drain line to plumbing waste or drainage system.



3.7 INSTALLATION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.8 CLEANING

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.

3.9 PROTECTION

- A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.
- B. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended in writing by sheet metal flashing and trim manufacturer.
- C. Maintain sheet metal flashing and trim in clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

END OF SECTION 07 62 00



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SECTION 07 91 00 - PREFORMED JOINT SEALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section Includes:

- 1. Preformed, foam joint seals.

- B. Related Requirements:

- 1. Section 042000 "Unit Masonry Rebuilding";
 - 2. Section 079200 "Joint Sealants" for liquid sealants applied over preformed seals in dual seal systems.

1.3 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 "Submittal Procedures".

1.4 ACTION SUBMITTALS

- A. Product Data: For each preformed joint seal product.
- B. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for each product exposed to view.
- C. Samples for Verification: For each type and color of preformed joint seal required, provide Samples with joint seals in 1/2-inch- (13-mm-) wide joints formed between two 6-inch- (150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint seals.
- D. Preformed Joint Seal Schedule: Include the following information:
 - 1. Joint seal location and designation.
 - 2. Joint width and movement capability.
 - 3. Joint seal manufacturer and product name.
 - 4. Joint seal color.



1.5 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each preformed joint seal for tests performed by manufacturer and witnessed by a qualified testing agency.
- B. Warranties: For special warranties.

1.6 QUALITY ASSURANCE

- A. Refer to DDC General Conditions Section 01 40 00 "Quality Requirements".
- B. Mockups: Install mockups of assemblies specified in other Sections that are indicated to receive preformed joint seals specified in this Section. Use materials and installation methods specified in this Section.

1.7 WARRANTY

- A. Special Warranty: Installer agrees to repair or replace preformed joint seals that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: One (1) year from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer agrees to furnish preformed joint seals to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
 - 1. Warranty Period: Five (5) years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PREFORMED, FOAM JOINT SEALS

- A. Preformed, Foam Joint Seals: Manufacturer's standard joint seal manufactured from urethane or EVA (ethylene vinyl acetate) foam with minimum density of 10 lb/cu. ft. (160 kg/cu. m) and impregnated with a nondrying, water-repellent agent. Factory produce in precompressed sizes in roll or stick form to fit joint widths based on design criteria indicated, with factory- or field-applied adhesive for bonding to substrates.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to the following:
 - a. EMSEAL Joint Systems, Ltd: Backerseal (Greyflex);
 - b. Or approved equal.
 - 2. Joint Seal Color: As indicated by manufacturer's designations.



2.2 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by preformed-joint-seal manufacturer for joint substrates indicated.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to preformed joint seal manufacturer, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces, and formulated to promote best adhesion to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with preformed joint seals and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXECUTION REQUIREMENTS

- A. Refer to DDC General Conditions for execution requirements.

3.2 EXAMINATION

- A. Examine joints indicated to receive preformed joint seals, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting preformed-joint seal performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing preformed joint seals to comply with preformed joint seal manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of preformed joint seal, including dust, paints (except for permanent protective coatings tested and approved for seal adhesion and compatibility by seal manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimal bond with preformed joint seals. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
 - a. Masonry.



3. Joint Priming: Prime joint substrates where recommended by preformed joint seal manufacturer or as indicated by tests or prior experience. Apply primer to comply with joint seal manufacturer's written instructions. Confine primers to areas of joint seal bond; do not allow spillage or migration onto adjoining surfaces.
- B. Masking Tape: Use masking tape where required to prevent contact of adhesive or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove smears. Remove tape immediately after tooling without disturbing joint seal.

3.4 INSTALLATION

- A. General: Comply with preformed joint seal manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.
- B. Installation of Preformed, Foam Joint Seals:
 1. Install each length of seal immediately after removing protective wrapping.
 2. Firmly secure compressed joint seals to joint gap side to obtain full bond using exposed pressure-sensitive adhesive or field-applied adhesive as recommended by manufacturer.
 3. Do not pull or stretch material. Produce seal continuity at splices, ends, turns, and intersections of joints.
 4. For applications at low ambient temperatures, heat foam joint seal material in compliance with manufacturer's written instructions.

3.5 PROTECTION

- A. Protect preformed joint seals from damage resulting from construction operations or other causes so seals are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated seals immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 07 91 00



SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section Includes:

- 1. Nonstaining silicone joint sealants.

- B. Related Requirements:

- 1. Section 04 03 22 "Historic Brick Unit Masonry Repair";
 - 2. Section 04 03 23 "Historic Brick Unit Masonry Repointing";
 - 3. Section 04 03 42 "Historic Cast-Stone Masonry Repair";
 - 4. Section 04 03 43 "Historic Cast-Stone Masonry Repointing";
 - 5. Section 04 20 00 "Unit Masonry Rebuilding";
 - 6. Section 04 72 00 "Cast Stone Masonry Rebuilding";
 - 7. Section 07 62 00 "Sheet Metal Flashing and Trim";
 - 8. Section 07 91 00 "Preformed Joint Seals".

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 "Submittal Procedures".

1.5 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.



- C. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- (13-mm-) wide joints formed between two 6-inch- (150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

1.6 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: For each kind of joint sealant, for tests performed by manufacturer and witnessed by a qualified testing agency.
- B. Preconstruction Laboratory Test Schedule: Include the following information for each joint sealant and substrate material to be tested:
 - 1. Joint-sealant location and designation.
 - 2. Manufacturer and product name.
 - 3. Type of substrate material.
 - 4. Proposed test.
 - 5. Number of samples required.
- C. Preconstruction Laboratory Test Reports: From sealant manufacturer, indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation are needed for adhesion.
- D. Preconstruction Field-Adhesion-Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on testing specified in "Preconstruction Testing" Article.
- E. Field-Adhesion-Test Reports: For each sealant application tested.
- F. Sample Warranties: For special warranties.

1.7 QUALITY ASSURANCE

- A. Refer to DDC General Conditions Section 01 40 00 "Quality Requirements".
- B. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.
- C. Product Testing: Test joint sealants using a qualified testing agency.
 - 1. Testing Agency Qualifications: Qualified according to ASTM C1021 to conduct the testing indicated.



- D. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.8 PRECONSTRUCTION TESTING

- A. Preconstruction Laboratory Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
1. Adhesion Testing: Use ASTM C794 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
 2. Compatibility Testing: Use ASTM C1087 to determine sealant compatibility when in contact with glazing and gasket materials.
 3. Stain Testing: Use ASTM C1248 to determine stain potential of sealant when in contact with cast-stone and masonry substrates.
 4. Submit manufacturer's recommended number of pieces of each type of material, including joint substrates, joint-sealant backings, and miscellaneous materials.
 5. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
 6. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures, including use of specially formulated primers.
 7. Testing will not be required if joint-sealant manufacturers submit data that are based on previous testing, not older than 24 months, of sealant products for adhesion to, staining of, and compatibility with joint substrates and other materials matching those submitted.
- B. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:
1. Locate test joints where indicated on Project or, if not indicated, as directed by Commissioner.
 2. Conduct field tests for each kind of sealant and joint substrate.
 3. Notify Commissioner seven days in advance of dates and times when test joints will be erected.
 4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.
 - a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1.1 in ASTM C1193 or Method A, Tail Procedure, in ASTM C1521.
 - 1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 5. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.



6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

1.9 FIELD CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
 2. When joint substrates are wet.
 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.10 WARRANTY

- A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 1. Warranty Period: One (1) year from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
 1. Warranty Period: Five (5) years from date of Substantial Completion.
- C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
 1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
 2. Disintegration of joint substrates from causes exceeding design specifications.
 3. Mechanical damage caused by individuals, tools, or other outside agents.
 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.



PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Commissioner from manufacturer's full range and approved by the City of New York.

2.2 NONSTAINING SILICONE JOINT SEALANTS

- A. Nonstaining Joint Sealants: No staining of substrates when tested according to ASTM C1248.
- B. Silicone, Nonstaining, S, NS, 100/50, NT: Nonstaining, single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 100/50, Use NT.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Dow Corning Corporation; 790 Silicone Building Sealant;
 - b. Sika Corporation; Sikasil WS-290;
 - c. Tremco Incorporated; Spectrem 1;
 - d. Or approved equal.

2.3 JOINT-SEALANT BACKING

- A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to the following:
 - a. Nomaco, Inc.;
 - b. Hohmann & Barnard, Inc.;
 - c. Or approved equal.
- B. Cylindrical Sealant Backings: ASTM C1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.



- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.4 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXECUTION REQUIREMENTS

- A. Refer to DDC General Conditions for execution requirements.

3.2 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning



operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

- a. Cast-Stone;
 - b. Masonry.
3. Remove laitance and form-release agents from concrete.
 4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal;
 - b. Glass.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.4 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
1. Do not leave gaps between ends of sealant backings.
 2. Do not stretch, twist, puncture, or tear sealant backings.
 3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
1. Place sealants so they directly contact and fully wet joint substrates.



2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
1. Remove excess sealant from surfaces adjacent to joints.
 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 3. Provide concave joint profile per Figure 8A in ASTM C1193 unless otherwise indicated.
 - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

3.5 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
1. Extent of Testing: Test completed and cured sealant joints as follows:
 - a. Perform 1 test for each 20 feet of joint length for each kind of sealant and joint substrate.
 2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C1193 or Method A, Tail Procedure, in ASTM C1521.
 - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
 3. Inspect tested joints and report on the following:
 - a. Whether sealants filled joint cavities and are free of voids.
 - b. Whether sealant dimensions and configurations comply with specified requirements.
 - c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion complies with sealant manufacturer's field-adhesion hand-pull test criteria.
 4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant material, sealant configuration, and sealant dimensions.



5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

- B. Evaluation of Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.6 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.7 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION 07 92 00



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SECTION 08 51 13 - ALUMINUM WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section includes:

- 1. Aluminum windows for exterior locations.

- B. Related Requirements:

- 1. Section 07 92 00 "Joint Sealants" for joint sealants installed as part of the aluminum window system.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

- 1. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Review and discuss the finishing of aluminum windows that is required to be coordinated with the finishing of other aluminum work for color and finish matching.
 - 3. Review, discuss, and coordinate the interrelationship of aluminum windows with other exterior wall components. Include provisions for anchoring, flashing, weeping, sealing perimeters, and protecting finishes.
 - 4. Review and discuss the sequence of work required to construct a watertight and weathertight exterior building envelope.
 - 5. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.
 - 6. Installer to field measure all existing openings and provide a schedule in the shop drawings.
 - 7. Provide existing conditions report after the removals of existing operable parts of double-hung window units.



1.4 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 "Submittal Procedures".

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for aluminum windows.
- B. Shop Drawings: For aluminum windows.
 - 1. Include existing conditions, plans, elevations, sections, hardware, accessories, insect screens, operational clearances, and details of installation, including anchor, flashing, and sealant installation.
 - 2. Include documentation for existing wood panel part of the window type 5 showing the exact configuration to be replicated in aluminum.
- C. Delegated Design Submittal: Design window system, glass and related components, including comprehensive engineering analysis by a qualified Professional Engineer, licensed in the State of New York using performance requirements and design criteria indicated.
- D. Samples: For each exposed product and for each color specified, 2 by 4 inches (50 by 100 mm) in size.
- E. Samples for Initial Selection: For units with factory-applied finishes.
 - 1. Include Samples of hardware and accessories involving color selection.
- F. Samples for Verification: For aluminum windows and components required, showing full range of color variations for finishes, and prepared on Samples of size indicated below:
 - 1. Exposed Finishes: 2 by 4 inches (50 by 100 mm).
 - 2. Exposed Hardware: Full-size units.
- G. Product Schedule: For aluminum windows. Use same designations indicated on Drawings.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer and Installer.
- B. Product Test Reports: For each type of aluminum window, for tests performed by a qualified testing agency.



- C. Field quality-control reports.
- D. Sample Warranties: For manufacturer's warranties.

1.7 QUALITY ASSURANCE

- A. Refer to DDC General Conditions Section 01 40 00 "Quality Requirements".
- B. Manufacturer Qualifications: A manufacturer capable of fabricating aluminum windows that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations.
- C. Installer Qualifications: An installer acceptable to aluminum window manufacturer for installation of units required for this Project.
- D. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.
 - 1. Build mockup of typical wall area as shown on Drawings.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Commissioner specifically approves such deviations in writing.
 - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.8 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace aluminum windows that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Failure to meet performance requirements.
 - b. Structural failures including excessive deflection, water leakage, condensation, and air infiltration.
 - c. Faulty operation of movable sash and hardware.
 - d. Deterioration of materials and finishes beyond normal weathering.
 - e. Failure of insulating glass.
 - 2. Warranty Period:
 - a. Window unit and hardware parts: 10 years from date of Substantial Completion.
 - b. Glazing Units: 5 years from date of Substantial Completion.
 - c. Aluminum Finish: 10 years from date of Substantial Completion.



PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain aluminum windows from single source from single manufacturer.

2.2 WINDOW PERFORMANCE REQUIREMENTS

- A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.
 - 1. Window Certification: AAMA certified with label attached to each window.
- B. Performance Class and Grade: AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS) as follows:
 - 1. Minimum Performance Class: AW (Architectural Window).
 - 2. Minimum Performance Grade: Design pressure number in pounds force per square foot used to determine the structural test pressure and water test pressure.
- C. Structural Test Pressure: For uniform load structural test, is equivalent to 150 percent of the design pressure.
- D. Energy Efficiency:
 - 1. Thermal Transmittance Test (U-Factor): When tested to AAMA specification 1503, AAMA specification 507 or NFRC 100 the thermal transmittance (U-Factor) shall not be more than:
 - a. 1" (25.4mm) insulating glass with exterior 1/4" tempered clear glass, aluminum spacer, and interior 1/4" tempered clear glass.
 - 1) Provide aluminum windows simulated for thermal performance according to AAMA 507 and NFRC 100 with a thermal transmittance (U-Factor) of 0.28 to 0.53 BTU/hr/sf/°F. (Based on center of glass U-Factor range 0.10 to 0.48) with a 10 lb. Sill.
- E. Solar Heat-Gain Coefficient (SHGC): Provide aluminum windows with a whole-window SHGC as determined according to NFRC 200 and AAMA 507 procedures.
- F. Air Infiltration: Maximum rate not more than indicated when tested according to AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS), Air Infiltration Test.
 - 1. Maximum Rate: 0.3 cfm/sq. ft. (0.5 L/s•m²) of area at an inward test pressure of 6.24 lbf/sq. ft. (300 Pa) in accordance with ASTM E283.
- G. Water Resistance: No water leakage as defined in AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS) referenced test methods at a water test pressure equaling that indicated, when tested



according to ASTM E547 and ASTM E331.

1. Test Pressure: 20 percent of positive design pressure, but not more than 10 lbf/sq. ft. (478 Pa) with a 10 lb. sill.
- H. Condensation-Resistance Factor (CRF): Provide aluminum windows tested for thermal performance according to AAMA 1503, showing a CRF of not less than 71 (frame), 76 (glass).
- I. Temperature Index (I): Provide aluminum windows tested for thermal performance according to CSA-A440 with a Temperature Index not less than 40 (frame), 74 (glass).
- J. Thermal Movements: Provide aluminum windows, including anchorage, that allow for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 1. Temperature Change: 120 deg F (67 deg C) ambient; 180 deg F (100 deg C) material surfaces.

2.3 ALUMINUM WINDOWS

- A. Products: Subject to compliance with requirements, provide the following products:
 1. Kawneer Company Inc.:
 - a. Kawneer Series AA™5450 Ultra Thermal (Beveled Face);
 - b. Side load double hung (AW-PG50-H);
 - c. 4 5/8" (117.48 mm) frame depth.
- B. Additional Manufacturers: Subject to compliance with requirements, additional available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 1. Adler Windows, Inc.;
 2. Graham Architectural Products Corporation;
 3. Or approved equal.
- C. Types: Provide the following types in locations indicated on Drawings:
 1. Double hung.
- D. Performance Requirements: Provide aluminum windows of performance indicated that comply with AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS)
 1. Performance Class and Grade: AW-PG50-H



- E. Aluminum Extrusions: Alloy and temper recommended by aluminum window manufacturer for strength, corrosion resistance, and application of required finish and not less than 0.070" wall thickness at any location for the main frame and sash members.
- F. Fasteners: Aluminum, nonmagnetic stainless steel or other materials to be non-corrosive and compatible with aluminum window members, trim, hardware, anchors, and other components.
- G. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.
- H. Reinforcing Members: Aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.
- I. Sliding-Type Weather Stripping: Provide woven-pile weather stripping of wool, polypropylene, or nylon pile and resin-impregnated backing fabric. Comply with AAMA 701/702.
 - 1. Weather Seals: Provide weather stripping with integral barrier fin or fins of semi-rigid, polypropylene sheet or polypropylene-coated material. Comply with AAMA 701/702.
- J. Sealant: For sealants required within fabricated windows, provide window manufacturer's standard, permanently elastic, non-shrinking, and non-migrating type recommended by sealant manufacturer for joint size and movement.
- K. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, or other corrosion-resistant material compatible with aluminum; designed to smoothly operate, tightly close, and securely lock aluminum windows, and sized to accommodate sash weight and dimensions.
- L. Double Hung Windows: Provide the following operating hardware:
 - 1. Sash Balances: A Class 5 adjustable spiral balance with stainless steel or other corrosion-resistant components. Two per sash.
 - 2. Handle: Continuous, integral, bottom and top sash lift handle.
 - 3. Sash Lock: White bronze sweep lock and keeper on meeting rails. One or two per sash as required by size. Brushed nickel finish.
 - 4. Aluminum autolock at top sash lift handle.
 - 5. Optional Sash Lock: Spring-loaded, snap-type lock on bottom rail of lower sash.
 - 6. Upper Sash Lock: Spring-loaded, snap-type lock on top rail of upper sash.
 - 7. Limit Device: Sash stop limit device; for bottom and top sash located at jamb; two per sash.
- M. Insulating-Glass Units: ASTM E2190.
 - 1. Glass: ASTM C1036, Type 1, Class 1, q3.
 - a. Tint: Clear.
 - b. Kind: Fully tempered .
 - 2. Lites: Two:



- a. Exterior Lite: 1/4" Solarban 60 Clear Tempered.
 - b. Interior Lite: 1/4" AGC Clear Energy Select 73 Tempered.
- 3. Filling: Fill space between glass lites with argon.
- N. Pole Operators: Provide one (1) pole for each room or space containing windows requiring poles for proper operation, except student toilets, public toilets, public spaces, stairways, corridors and unsupervised student areas.
 - 1. Wood Poles: 1 1/4" diameter wood pole (clear hickory, maple, red oak or white oak with polyurethane satin finish. Each pole shall have a Bronzecraft No. 232-004 pole hook with Bronzecraft No. 103-003 adapter on one end and a rubber cap on the other end. Provide one Bronzecraft No. 231-002 pole hanger for each pole.
 - 2. Length of Pole: Distance from top of uppermost ventilator pole ring to 3'-0" above floor.
- O. Muntins: Provide and install tape applied exterior and interior muntins grid type H-329.

2.4 INSECT SCREENS

- A. General: Design windows and hardware to accommodate screens in a tight-fitting, removable arrangement, with a minimum of exposed fasteners and latches. Fabricate insect screens to fully integrate with window frame. Locate screens on outside of window and provide for each operable exterior sash.
 - 1. Comply with SMA 1004, "Specifications for Aluminum Tubular Frame Screens for Windows," for minimum standards of appearance, fabrication, attachment of screen fabric, hardware, and accessories unless more stringent requirements are indicated.
- B. Aluminum Insect Screen Frames: Manufacturer's standard aluminum alloy complying with SMA 1004. Fabricate frames with mitered or coped joints or corner extrusions, concealed fasteners and removable PVC spline.
 - 1. Extruded-Aluminum or Aluminum Tubular Framing Sections and Cross Braces: Not less than 0.050-inch (1.3-mm) wall thickness.
 - 2. Finish: Manufacturer's standard.
- C. Aluminum Wire Fabric: 18-by-16 mesh/inch (18-by-16 mesh/25.4mm) of 0.011-inch (0.28-mm) diameter, coated aluminum wire.
 - 1. Wire-Fabric Finish: Charcoal Grey or Natural Brite-Kote.

2.5 FABRICATION

- A. Framing Members, General: Fabricate components that, when assembled, have the following characteristics:



1. Profiles that are sharp, straight, and free of defects or deformations.
 2. Accurately fit joints; make joints flush, hairline and weatherproof.
 3. Means to drain water passing joints, condensation within framing members, and moisture migrating within the system to exterior.
 4. Physical and thermal isolation of glazing from framing members.
 5. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
 6. Provisions for field replacement of glazing.
 7. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
- B. Fabricate aluminum windows in sizes indicated. Include a complete system for assembling components and anchoring windows.
- C. Fabricate aluminum windows that are re-glazable without dismantling sash or framing.
- D. Thermally Improved Construction: Fabricate aluminum windows with an integral, concealed, low-conductance thermal barrier; located between exterior materials and window members exposed on interior side; in a manner that eliminates direct metal-to-metal contact. Thermal barriers shall be designed in accordance with AAMA TIR A8.
1. Frame thermal barrier shall be polyamide with a minimum of 1" (25.4 mm) separation, installed continuously and mechanically bonded to the aluminum.
 2. Sash thermal barrier shall be polyamide with a minimum of 1/2" (12 mm) separation, installed continuously and mechanically bonded to the aluminum.
- E. Weather Stripping: Provide full-perimeter weather stripping for each operable sash.
- F. Weep Holes: Provide weep holes and internal passages in window frames to conduct infiltrating water to exterior.
- G. Provide water-shed members as required above lines of natural water penetration.
- H. Mullions: Provide mullions and cover plates as shown, matching window units, complete with anchors for support to structure and installation of window units. Allow for erection tolerances and provide for movement of window units due to thermal expansion and building deflections, as indicated. Provide mullions and cover plates capable of withstanding design loads of window units.
- I. Sub frames: Provide sub frames with anchors for window units as shown, of profile and dimensions indicated but not less than 0.093-inch (2.4-mm) thick extruded aluminum. Miter or cope corners, and join with concealed mechanical joint fasteners. Finish to match window units. Provide sub frames capable of withstanding design loads of window units.
- J. Factory-Glazed Fabrication: Glaze aluminum windows in the factory where practical and possible for applications indicated. Comply with requirements in Division 08 Section "Glazing" and with AAMA/WDMA/CSA 101/I.S.2/A440 (NAFS).
- K. Glazing Stops: Provide snap-on glazing stops coordinated with Division 08 Section "Glazing" and glazing system indicated. Provide glazing stops to match sash.



2.6 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.7 ALUMINUM FINISHES

- A. Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.
- B. High-Performance Organic Finish (Three-Coat Fluoropolymer): AA-C12C40R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: conversion coatings; Organic Coating: manufacturer's standard three-coat, thermocured system consisting of specially formulated inhibitive primer, fluoropolymer color coat, and clear fluoropolymer topcoat, with both color coat and clear topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with AAMA 2605 and with coating and resin manufacturers' written instructions.
 - 1. Kawneer Permafluor™ (70% PVDF), AAMA 2605, Fluoropolymer Coating.
 - 2. Color and Gloss: Permafluor Colonial White UC#109909.

PART 3 - EXECUTION

3.1 EXECUTION REQUIREMENTS

- A. Refer to DDC General Conditions for execution requirements.

3.2 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.
- C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathertight window installation.



- D. Masonry Surfaces: Visibly dry and free of excess mortar, sand, and other construction debris.
- E. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches (76 mm) of opening.
- F. Metal Surfaces: Dry; clean; free of grease, oil, dirt, rust, corrosion, and welding slag; without sharp edges or offsets at joints.
- G. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 INSTALLATION

- A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E2112.
- B. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weathertight construction.
- C. Set sill members in bed of sealant or with gaskets, as indicated, for weather tight construction.
- D. Install windows and components to drain condensation, water penetrating joints, and moisture migrating within windows to the exterior.
- E. Separate aluminum and other corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
 - 1. Testing and inspecting agency will interpret tests and state in each report whether tested work complies with or deviates from requirements.
- B. Testing Services: Testing and inspecting of installed windows shall take place as follows:
 - 1. Testing Methodology: Testing of windows for air infiltration and water resistance shall be performed according to AAMA 502 including reference to ASTM E 783 for Air Infiltration Test and ASTM E 1105 for Water Penetration Test.
 - 2. Air-Infiltration Testing:
 - a. Test Pressure: That required to determine compliance with AAMA/WDMA/CSA 101/I.S.2/A440 performance class indicated.



- b. Allowable Air-Leakage Rate: 1.5 times the applicable AAMA/WDMA/CSA 101/I.S.2/A440 rate for product type and performance class rounded down to one decimal place.
- 3. Water-Resistance Testing:
 - a. Test Pressure: Two-thirds times test pressure required to determine compliance with AAMA/WDMA/CSA 101/I.S.2/A440 performance grade indicated.
 - b. Allowable Water Infiltration: No water penetration.
- 4. Testing Extent: Commissioner shall select window units to be tested as soon as a representative portion of the project has been installed, glazed, perimeter caulked and cured. Conduct tests for air infiltration and water penetration with manufacturer's representative present.
- 5. Test Reports: Prepared according to AAMA 502.
- C. Windows will be considered defective if they do not pass tests and inspections.
- D. Prepare test and inspection reports.

3.5 ADJUSTING, CLEANING, AND PROTECTION

- A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weather tight closure. Lubricate hardware and moving parts.
- B. Clean exposed surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
 - 1. Keep protective films and coverings in place until final cleaning.
- C. Clean glass immediately after installing windows. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels, and clean surfaces.
- D. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.
- E. Protect window surfaces from contact with contaminating substances resulting from construction operations. In addition, monitor window surfaces adjacent to and below exterior concrete and masonry surfaces during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION 08 51 13



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SECTION 08 91 19 - FIXED LOUVERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section Includes:
 - 1. Fixed extruded-aluminum louvers.
- B. Related Requirements:
 - 1. Section 07 92 00 "Joint Sealants" for joint sealants installed as part of the louver system.
 - 2. Section 08 51 13 "Aluminum Windows".

1.3 DEFINITIONS

- A. Louver Terminology: Definitions of terms for metal louvers contained in AMCA 501 apply to this Section unless otherwise defined in this Section or in referenced standards.
- B. Horizontal Louver: Louver with horizontal blades (i.e., the axis of the blades are horizontal).
- C. Vertical Louver: Louver with vertical blades (i.e., the axis of the blades are vertical).
- D. Drainable-Blade Louver: Louver with blades having gutters that collect water and drain it to channels in jambs and mullions, which carry it to bottom of unit and away from opening.
- E. Wind-Driven-Rain-Resistant Louver: Louver that provides specified wind-driven-rain performance, as determined by testing according to AMCA 500-L.
- F. Windborne-Debris-Impact-Resistant Louver: Louver that provides specified windborne-debris-impact resistance, as determined by testing according to AMCA 540.

1.4 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 "Submittal Procedures".



1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. For louvers specified to bear AMCA seal, include printed catalog pages showing specified models with appropriate AMCA Certified Ratings Seals.
- B. Shop Drawings: For louvers and accessories. Include plans, elevations, sections, details, and attachments to other work. Show frame profiles and blade profiles, angles, and spacing.
 - 1. Show weep paths, gaskets, flashings, sealants, and other means of preventing water intrusion.
 - 2. Show mullion profiles and locations.
- C. Samples: For each type of metal finish required.
- D. Design Submittal: For louvers indicated to comply with structural and seismic performance requirements and design criteria, including analysis data signed and sealed by a qualified Professional Engineer, licensed in the State of New York responsible for their preparation.

1.6 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: Based on evaluation of comprehensive tests performed according to AMCA 500-L by a qualified testing agency or by manufacturer and witnessed by a qualified testing agency, for each type of louver and showing compliance with performance requirements specified.
- B. Windborne-debris-impact-resistance test reports.
- C. Sample Warranties: For manufacturer's special warranties.

1.7 QUALITY ASSURANCE

- A. Refer to DDC General Conditions Section 01 40 00 "Quality Requirements".
- B. Welding Qualifications: Qualify procedures and personnel according to the following:
 - 1. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."
 - 2. AWS D1.3/D1.3M, "Structural Welding Code - Sheet Steel."
 - 3. AWS D1.6/D1.6M, "Structural Welding Code - Stainless Steel."

1.8 FIELD CONDITIONS

- A. Field Measurements: Verify actual dimensions of openings by field measurements before fabrication.



1.9 WARRANTY

- A. Manufacturer shall provide standard limited warranty for louver systems for a period of one year from date of installation, no more than 18 months after shipment from manufacturing plant. When notified in writing from the City of New York of a manufacturing defect, manufacturer shall promptly correct deficiencies without direct financial cost to the City of New York.
- B. Manufacturer shall provide 20 year limited warranty for fluoropolymer-based finish on extruded aluminum substrates.
 - 1. Finish coating shall not peel, blister, chip, crack or check.
 - 2. Chalking, fading or erosion of finish when measured by the following tests:
 - a. Finish coating shall not chalk in excess of 8 numerical ratings when measured in accordance with ASTM D4214.
 - b. Finish coating shall not change color or fade in excess of 5 NBS units as determined by ASTM D2244 and ASTM D822.
 - c. Finish coating shall not erode at a rate in excess of 10%/ 5 year as determined by Florida test sample.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Source Limitations: Obtain fixed louvers from single source from a single manufacturer where indicated to be of same type, design, or factory-applied color finish.
 - 1. Reliable Company; 1300 Enterprise Road, Geneva, Alabama 36340, Tel: 334-684-3914.
- B. Additional Manufacturers: Subject to compliance with requirements, additional available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Ruskin Company.;
 - 2. Cesco Products, a division of MESTEK, Inc.;
 - 3. Or approved equal.

2.2 PERFORMANCE REQUIREMENTS

- A. Design: Design louvers, including comprehensive engineering analysis by a qualified Professional Engineer, licensed in the State of New York using structural and seismic performance requirements and design criteria indicated.
- B. Structural Performance: Louvers shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated without permanent deformation of louver components, noise or metal fatigue caused by louver-blade rattle or flutter, or permanent damage to fasteners and anchors. Wind pressures shall be considered to act normal



to the face of the building.

1. Wind Loads: Determine loads based on a uniform pressure of 30 lbf/sq. ft. (1436 Pa), acting inward or outward.
- C. Windborne-Debris-Impact Resistance: Louvers located within 30 feet (9.1 m) of grade shall pass basic protection, when tested according to AMCA 540.
- D. Louver Performance Ratings: Provide louvers complying with requirements specified, as demonstrated by testing manufacturer's stock units identical to those provided, except for length and width according to AMCA 500-L.
- E. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- F. SMACNA Standard: Comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" for fabrication, construction details, and installation procedures.

2.3 FIXED EXTRUDED-ALUMINUM LOUVERS

- A. Model: AEL 42 as manufactured by Reliable Company.
- B. Fabrication:
 1. Design: Stationary louver type constructed with mechanical fasteners and pressure locked joints. Hidden vertical supports to allow unlimited continuous line appearance. Units can be frameless or constructed with a variety of frame styles.
 2. Frame:
 - a. Frame Depth: 1 1/8" (28mm);
 - b. Wall Thickness: 0.050 inch (1.3 mm), nominal.
 - c. Material: Extruded aluminum, Alloy 6063-T6.
 3. Blades:
 - a. Style: non-drainable "J"-style. 42 degrees at .775 inches (19 mm) on center.
 - b. Wall Thickness: 0.040" (1.016 mm), nominal.
 - c. Material: Extruded aluminum, Alloy 6063-T6.
 4. Minimum Assembly Size: 6 inches wide by 6 inches high (152 mm x 152 mm).
 5. Maximum Factory Assembly Size: Single sections shall not exceed 180 inches wide by 84 inches high (4512 mm x 2134 mm) or 84 inches wide by 120 inches high (2134 mm x 3048). Louvers larger than the maximum single size shall be require field assembly of smaller sections.
 6. Recycled Content: 18% post-consumer. 55% pre-consumer, post-industrial, total 73% by weight.



- C. Performance Data:
1. Based on testing 48 inch x 48 inch (1,219 mm x 1,219 mm) size unit in accordance with AMCA 500.
 2. Free Area: 52 percent, nominal.
 3. Free Area Size: 8.29 square feet (0.75 m²).
 4. Air performance and water penetration not tested.

2.4 ACCESSORIES

- A. Aluminum Filter Racks: Formed channel racks to accept standard thick filters. Unused bottom portion blanked off with 0.040 inch (1 mm) aluminum sheet.
1. Filter: 1 inch (25mm) thick.
- B. Security Bars:
1. Location: Rear.
 2. Construction: Aluminum, 3/4 inch x 1/2 inch (19 mm x 13 mm), welded to louver.
- C. Bird Screen:
1. Location: Interior face.
 2. Aluminum: Aluminum, 5/8 inches by 0.040 inch (16 mm by 1 mm), expanded and flattened.
 3. Frame: Removable. Re-wireable.
- D. Insect Screens:
1. Location: Interior face.
 2. Aluminum: 18-16 mesh, mill finish, .011 inch (0.3 mm) wire.
 3. Frame: Aluminum.
- E. Secure screen frames to louver frames with stainless-steel machine screws, spaced a maximum of 6 inches (150 mm) from each corner and at 12 inches (300 mm) o.c.

2.5 MATERIALS

- A. Aluminum Extrusions: ASTM B221 (ASTM B221M), Alloy 6063-T6.
- B. Aluminum Sheet: ASTM B209 (ASTM B209M), Alloy 3003 or 5005, with temper as required for forming, or as otherwise recommended by metal producer for required finish.
- C. Fasteners: Use types and sizes to suit unit installation conditions.
1. Use screws as recommended by manufacturer.
 2. For fastening aluminum, use aluminum or 300 series stainless-steel fasteners.
 3. For color-finished louvers, use fasteners with heads that match color of louvers.
- D. Postinstalled Fasteners for Concrete and Masonry: Torque-controlled expansion anchors, fabricated from stainless-steel components, with allowable load or strength design capacities calculated according to ICC-ES AC193 and ACI 318 greater than or equal to the design load, as



determined by testing according to ASTM E488/E488M conducted by a qualified testing agency.

2.6 ALUMINUM FINISHES

- A. Finish: Mill finish.
- B. Conversion-Coated Finish: AA-C12C42, nonetched, cleaned with inhibited chemicals, and chemical conversion coated with acid chromate-fluoride-phosphate.
- C. Factory-Primed Finish: AA-C12C42R1x with air-dried primer of not less than 2-mil (0.05-mm) dry film thickness.
- D. High-Performance Organic Finish: Three-coat fluoropolymer finish complying with AAMA 2605 and containing not less than 70 percent PVDF resin by weight in both color coat and clear topcoat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - 1. Color and Gloss: To match color of windows, refer to spec section 08 51 13 "Aluminum Windows."
 - 2. 20 year finish warranty.

PART 3 - EXECUTION

3.1 EXECUTION REQUIREMENTS

- A. Refer to DDC General Conditions for execution requirements.

3.2 EXAMINATION

- A. Examine substrates and openings, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.3 PREPARATION

- A. Coordinate setting drawings, diagrams, templates, instructions, and directions for installation of anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to Project site.



3.4 INSTALLATION

- A. Locate and place louvers level, plumb, and at indicated alignment with adjacent work.
- B. Use concealed anchorages where possible. Provide brass or lead washers fitted to screws where required to protect metal surfaces and to make a weathertight connection.
- C. Form closely fitted joints with exposed connections accurately located and secured.
- D. Provide perimeter reveals and openings of uniform width for sealants and joint fillers, as indicated.
- E. Protect unpainted galvanized- and nonferrous-metal surfaces that are in contact with concrete, masonry, or dissimilar metals from corrosion and galvanic action by applying a heavy coating of bituminous paint or by separating surfaces with waterproof gaskets or nonmetallic flashing.
- F. Install concealed gaskets, flashings, joint fillers, and insulation as louver installation progresses, where weathertight louver joints are required. Comply with Section 079200 "Joint Sealants" for sealants applied during louver installation.

3.5 ADJUSTING AND CLEANING

- A. Clean exposed louver surfaces that are not protected by temporary covering, to remove fingerprints and soil during construction period. Do not let soil accumulate during construction period.
- B. Before final inspection, clean exposed surfaces with water and a mild soap or detergent not harmful to finishes. Thoroughly rinse surfaces and dry.
- C. Restore louvers damaged during installation and construction, so no evidence remains of corrective work. If results of restoration are unsuccessful, as determined by Commissioner, remove damaged units and replace with new units.
 - 1. Touch up minor abrasions in finishes with air-dried coating that matches color and gloss of, and is compatible with, factory-applied finish coating.

END OF SECTION 08 91 19



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SECTION 09 96 00 - HIGH-PERFORMANCE COATINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section includes surface preparation and the application of high-performance coating systems.
 - 1. Exterior Substrates:
 - a. Steel.
 - b. Galvanized metal.
- B. Related Requirements:
 - 1. Section 04 03 22 "Historic Brick Unit Masonry Repair";
 - 2. Section 04 03 23 "Historic Brick Unit Masonry Repointing";
 - 3. Section 04 03 42 "Historic Cast-Stone Masonry Repair";
 - 4. Section 04 03 43 "Historic Cast-Stone Masonry Repointing";
 - 5. Section 04 20 00 "Unit Masonry Rebuilding";
 - 6. Section 04 72 00 "Cast Stone Masonry Rebuilding".

1.3 DEFINITIONS

- A. MPI Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.
- B. MPI Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.
- C. MPI Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 "Submittal Procedures".

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.



1. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
 2. Indicate VOC content.
- B. Samples for Initial Selection: For each type of topcoat product indicated.
- C. Samples for Verification: For each type of coating system and each color and gloss of topcoat indicated.
1. Submit Samples on rigid backing, 8 inches (200 mm) square.
 2. Apply coats on Samples in steps to show each coat required for system.
 3. Label each coat of each Sample.
 4. Label each Sample for location and application area.
- D. Product List: Cross-reference to coating system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

1.6 QUALITY ASSURANCE

- A. Refer to DDC General Conditions Section 01 40 00 "Quality Requirements".
- B. Mockups: Apply mockups of each coating system indicated to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Commissioner will select one surface to represent surfaces and conditions for application of each coating system.
 - a. Vertical and horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
 - b. Other Items: Commissioner will designate items or areas required.
 2. Final approval of color selections will be based on mockups.
 - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Commissioner at no added cost to the City of New York.
 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Commissioner specifically approves such deviations in writing.
 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).



1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.8 FIELD CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).
- B. Do not apply coatings when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.
- C. Do not apply exterior coatings in snow, rain, fog, or mist.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 1. Tnemec Company Inc.;
 2. Or approved equal.

2.2 HIGH-PERFORMANCE COATINGS, GENERAL

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products Lists."
- B. Material Compatibility:
 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 2. For each coat in a paint system, products shall be recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.
 3. Products shall be of same manufacturer for each coat in a coating system.
- C. Colors: As selected by Commissioner from manufacturer's full range and approved by the City of New York.

2.3 METAL PRIMERS

- A. Primer, Epoxy, Anti-Corrosive, for Metal:
 1. Chembuild Series 135, by Tnemec Company, Inc.;



2. Or approved equal.

2.4 POLYURETHANE COATINGS FOR STEEL SUBSTRATES

A. Aliphatic Acrylic Polyurethane, Two-Component (Gloss Level 5):

1. Endua-Shield Series 73, by Tnemec Company, Inc.;
2. Or approved equal.

2.5 EPOXY COATINGS FOR GALVANIZED METAL SUBSTRATES

A. Polyamidoamine Epoxy system for galvanized metal substrates:

1. Hi-Build Epoxoline Series 66, by Tnemec Company, Inc.;
2. Or approved equal.

2.6 SOURCE QUALITY CONTROL

A. Testing of Coating Materials: The City of New York reserves the right to invoke the following procedure:

1. The City of New York will engage the services of a qualified testing agency to sample coating materials. Contractor will be notified in advance and may be present when samples are taken. If coating materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. The City of New York may direct Contractor to stop applying coatings if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying coating materials from Project site, pay for testing, and recoat surfaces coated with rejected materials. Contractor will be required to remove rejected materials from previously coated surfaces if, on recoating with complying materials, the two coatings are incompatible.

PART 3 - EXECUTION

3.1 EXECUTION REQUIREMENTS

- #### A.
- Refer to DDC General Conditions for execution requirements.

3.2 EXAMINATION

- #### A.
- Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.



- B. Proceed with coating application only after unsatisfactory conditions have been corrected.

- 1. Application of coating indicates acceptance of surfaces and conditions.

3.3 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations applicable to substrates and coating systems indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of coatings, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce coating systems indicated.
- D. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:
 - 1. SSPC-SP 3, "Power Tool Cleaning."

3.4 APPLICATION

- A. Apply high-performance coatings according to manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual."
 - 1. Use applicators and techniques suited for coating and substrate indicated.
 - 2. Coat surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, coat surfaces behind permanently fixed equipment or furniture with prime coat only.
 - 3. Coat backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 - 4. Do not apply coatings over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of the same material are to be applied. Tint undercoats to match color of finish coat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through final coat, apply additional coats until cured film has a uniform coating finish, color, and appearance.



- D. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections. Produce sharp glass lines and color breaks.

3.5 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: The City of New York may engage the services of a qualified testing and inspecting agency to inspect and test coatings for dry film thickness.
 - 1. Contractor shall touch up and restore coated surfaces damaged by testing.
 - 2. If test results show that dry film thickness of applied coating does not comply with coating manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with coating manufacturer's written recommendations.

3.6 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from coating operation. Correct damage to work of other trades by cleaning, repairing, replacing, and recoating, as approved by Commissioner, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced coated surfaces.

3.7 EXTERIOR HIGH-PERFORMANCE COATING SCHEDULE

- A. Steel Substrates:
 - 1. Aliphatic Acrylic Polyurethane over Epoxy System:
 - a. Prime Coat: Primer, epoxy, anti-corrosive, for metal, apply (1) spot coat and (1) full coat.
 - b. First Topcoat: Polyurethane, two-component, pigmented, apply (1) coat, gloss (Gloss Level 5). Color to be approved by the City of New York.
 - c. Second Topcoat: Polyurethane, two-component, pigmented, apply (1) coat, gloss (Gloss Level 5). Color to be approved by the City of New York.
- B. Galvanized-Metal Substrates:
 - 1. Epoxy System:
 - a. Prime Coat: Primer, epoxy, anti-corrosive, for metal.
 - b. Intermediate Coat: Epoxy, matching topcoat.



- c. Topcoat: Epoxy, gloss. Color to be approved by The City of New York.

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SECTION 09 96 53 - ELASTOMERIC COATINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project: (1) the Contract Drawings, (2) the Specifications, (3) the General Conditions, (4) the Addendum and (5) the Contract [City of New York Standard Construction Contract].

1.2 SUMMARY

- A. Section includes surface preparation and application of elastomeric coatings to the following exterior substrates:
 - 1. Cast-stone window sills.
- B. Related Requirements:
 - 1. Section 04 03 42 "Historic Cast-Stone Masonry Repair";
 - 2. Section 04 03 43 "Historic Cast-Stone Masonry Repointing";
 - 3. Section 07 92 00 "Joint Sealants".

1.3 SUBMITTAL PROCEDURES

- A. Refer to DDC General Conditions Section 01 33 00 "Submittal Procedures".

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
 - 2. Indicate VOC content.
- B. Samples for Initial Selection: For each type of elastomeric coating.
- C. Samples for Verification: For each type of elastomeric coating indicated and in each color and gloss.
 - 1. Submit Samples on same type of substrate as that to receive application, 8 inches (200-mm) square.



2. Apply coats on Samples in steps to show each separate coat, including primers and block fillers as applicable.
 3. Label each coat of each Sample.
 4. Label each Sample for location and application area.
- D. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules. Include color designations.

1.5 QUALITY ASSURANCE

- A. Refer to DDC General Conditions Section 01 40 00 "Quality Requirements".
- B. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Commissioner will select one surface to represent surfaces and conditions for application of each paint system.
 - a. Vertical and Horizontal Surfaces: Provide samples of at least 50 sq. ft (4.5 sq. m).
 - b. Other Items: Commissioner will designate items or areas required.
 2. Final approval of color selections will be based on mockups.
 - a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Commissioner at no added cost to the City of New York.
 3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Commissioner specifically approves such deviations in writing.
 4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).
1. Maintain containers in clean condition, free of foreign materials and residue.
 2. Remove rags and waste from storage areas daily.



1.7 FIELD CONDITIONS

- A. Apply coatings only when temperature of surfaces to be coated and ambient air temperatures are between 50 and 90 deg F (10 and 32 deg C) unless otherwise permitted by manufacturer's written instructions.
- B. Do not apply coatings in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.
- C. Allow wet surfaces to dry thoroughly and attain temperature and conditions specified before starting or continuing coating operation.

1.8 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace elastomeric coatings that fail within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Water penetration through the coating.
 - b. Deterioration of coating beyond normal weathering.
 - 2. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:
 - 1. Edison Coatings, Inc.;
 - 2. Or approved equal.
- B. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to products listed in the Elastomeric Coating Schedule for the paint category indicated.

2.2 MATERIALS

- A. MPI Standards: Products shall comply with MPI standards indicated and shall be listed in its "MPI Approved Products List."



- B. Moisture-Vapor Transmission: Minimum 15 (metric perms), based on testing according to ASTM D1653.
- C. Material Compatibility:
 - 1. Materials for use within each paint system shall be compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, products shall be recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- D. Colors: As selected by Commissioner from manufacturer's full range and approved by the City of New York.
- E. Crack Fillers: Elastomeric coating manufacturer's recommended, factory-formulated crack fillers or sealants, including crack filler primers, compatible with substrate and other materials indicated.
- F. Primer: Elastomeric coating manufacturer's recommended, factory-formulated, alkali-resistant primer compatible with substrate and other materials indicated.

PART 3 - EXECUTION

3.1 EXECUTION REQUIREMENTS

- A. Refer to DDC General Conditions for execution requirements.

3.2 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with manufacturer's requirements for maximum moisture content, alkalinity, and other conditions affecting performance of work.
- B. Begin coating only when moisture content of substrate is 12 percent or less when measured with an electronic moisture meter.
- C. Begin coating no sooner than 28 days after substrate is constructed and is visually dry on both sides.
- D. Verify that substrate is within the range of alkalinity recommended by manufacturer.
- E. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- F. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.



3.3 PREPARATION

- A. Comply with manufacturer's written instructions applicable to substrates and coating systems indicated.
- B. Remove hardware and hardware accessories, plates, machined surfaces, light fixtures, and similar items already installed that are not to be coated. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and coating.
 - 1. After completing coating operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of coatings, including dirt, oil, grease, and incompatible paints and encapsulants. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
 - 1. Remove incompatible primers and reprime substrate with compatible primers as required to produce coating systems indicated.
 - 2. Perform cleaning and coating application so dust and other contaminants from cleaning process will not fall on wet, newly coated surfaces.
- D. Crack Repair: Fill cracks according to manufacturer's written instructions before coating surfaces.

3.4 APPLICATION

- A. Apply elastomeric coatings according to manufacturer's written instructions.
 - 1. Use equipment and techniques best suited for substrate and type of material being applied.
 - 2. Coat surfaces behind movable items the same as similar exposed surfaces.
 - 3. Apply each coat separately according to manufacturer's written instructions.
- B. Primers: Apply at a rate to ensure complete coverage.
- C. Block Fillers: Apply at a rate to ensure complete coverage with pores filled.
- D. Elastomeric Finish Coat(s): Manufacturer's recommended number of coats and total dry film thickness for condition of substrate.
- E. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats similar to color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- F. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform finish, color, and appearance.



- G. Apply coatings to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- H. Apply coatings to prepared surfaces as soon as practicable after preparation and before subsequent surface soiling or deterioration.
- I. Spray Application: Use spray equipment for application only when permitted by authorities having jurisdiction. Wherever spray application is used, do not double back with spray equipment to build up film thickness of two coats in one pass.

3.5 FIELD QUALITY CONTROL

- A. Testing of Paint Materials: The City of New York reserves the right to invoke the following testing procedures:
 - 1. The City of New York will engage the services of a qualified testing agency to sample materials being used. Samples of material delivered to Project site will be taken, identified, sealed, and certified in presence of Contractor.
 - 2. Testing agency will perform tests for compliance of materials with product requirements.
 - 3. The City of New York may direct Contractor to stop coating application if test results show materials being used do not comply with requirements. Remove noncomplying materials from Project site, pay for testing, and recoat surfaces that were coated with rejected materials. Remove rejected materials from previously coated surfaces if, on recoating with complying materials, the two coatings are incompatible.
- B. Field Testing and Inspection: The City of New York reserves the right to engage the services of a qualified testing agency to verify installed thickness of elastomeric coatings.

3.6 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing coating application, clean spattered surfaces. Remove spattered coatings by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from coating application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Commissioner, and leave in an undamaged condition.
- D. At completion of construction activities, touch up and restore damaged or defaced coated surfaces.



3.7 ELASTOMERIC COATING SCHEDULE

A. Cast-Stone Substrates:

1. Elastomeric Coating System:

- a. Prime Coat: As recommended in writing by topcoat manufacturer.
- b. Block / Crack Filler: As recommended in writing by topcoat manufacturer.
- c. Intermediate Coat: As recommended in writing by topcoat manufacturer.
- d. Topcoat: Elastomeric, pigmented, exterior, water-based, flat coating.
 - 1) Elastowall 351 by Edison Coatings Inc.;
 - 2) Or approved equal.

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APPENDIX #1 - 07/20/2018

LIMITED MATERIALS TESTING REPORT

**Museo del Barrio
Heckscher Foundation Building
1230 Park Avenue
New York, NY**



Photo from Architecture and Building, Plate 199 Vol LIV, December 1922. Accessed via Google Books.

Prepared for:
Thornton Tomasetti
51 Madison Ave
New York, NY 10010

Prepared by:
Jablonski Building Conservation, Inc.
40 West 27th Street, 12th Floor
New York, NY 10001

July 20, 2018

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I. - INTRODUCTION

Jablonski Building Conservation, Inc. (JBC) was retained by Thornton Tomasetti to conduct a series of materials tests, including cast stone petrographic analysis, coating identification, mortar analysis, and cast stone soiling mapping for the exterior of the Heckscher Foundation Building, the current home of Museo del Barrio located at 1230 Park Avenue in New York City. The purpose of these tests and analyses was to determine the composition of the cast stone and inform restoration decisions including repair, cleaning, and paint removal. The mortar analysis was performed to provide the primary characteristics of the historic pointing mortar for the brick which is critical in the formulation of an appropriate replication mix.

II. - EXECUTIVE SUMMARY

Cast Stone Petrographic Analysis

Samples from three different cast stone units were sent to an outside laboratory for petrographic analysis. As of July 20, 2018 results are still pending. When this information is available, a revised report will be submitted.

Coating Identification Analysis

A sample of the coating on the cast stone located between the first and second floors was sent to an outside laboratory for resin identification. The coating was identified as a modified alkyd coating with a styrenated binder. This is consistent with exterior masonry coatings used from the 1970s through the 1990s. A copy of the full analysis by KTA-Tator, Inc is included in Appendix B.

Mortar Analysis

The brick is bedded and pointed with a light greyish yellow mortar. Analysis of the mortar is including in this report. A custom replication mix is provided as a standard commercial match in color and appearance could not be found.

Soiling Mapping

Areas of soiling were noted on a drawing provided by the client in order to determine patterns of soiling and inform decisions on how to best clean the cast stone and mitigate further soiling. An annotated sketch of areas of soiling is include in Appendix C.

III. - BRIEF HISTORY AND DESCRIPTION

The building at 1230 Park Avenue, the current home of Museo del Barrio, was designed by Maynicke & Frank, Architects and constructed in 1922 as the Heckscher Foundation for Children. It was home to the Society for Prevention of Cruelty to Children in New York, and was “free for children who have been found by the Society and who are unable to pay. It [was] for the lost and abused children and for bad boys and wayward girls whom the Society [had] in charge. The children [were] kept on an average of eight days, some considerably longer, many for a shorter time, dependent upon circumstances, but the building [was] not intended for a permanent home for children but merely as a stop in passage, either to be returned to their own homes or to institutions or other homes that the Society [found] for them.”¹

The building is six stories high with a two-story penthouse above the roof, with the open areas of the roof screened over. The first story is of limestone and the five stories above of red brick and cast stone details, while the penthouse stories are finished in light brick. In plan the building is H-shaped with a central indentation which forms the entrance court along Fifth Avenue and a corresponding light court at the rear.

The first floor was originally home to the general offices of the Society, as well as the theater, reception rooms, and the Lost Child Department, for “children who are generally detained here but a few hours before their parents call for them.”² The second floor contained classrooms, indoor playgrounds, and a chapel welcoming of all religions located in the central section of the building facing Fifth Avenue. The girls’ dormitories, a kindergarten room, and an outdoor playground were on the third floor, with the playground situated on the roof of the theater. The boys’ dormitories, dining rooms, and kitchen were located on the fourth floor. The building held 500 beds and could serve 2000 meals a day. The fifth and sixth floors contained the large gymnasium, infirmary, locker rooms, a swimming pool, dressing rooms, and showers. The roof penthouse included the living quarters for the permanent employees, each of which was furnished with a “good sized bed room” and sitting rooms for rest and reading.³ The roof also contained an open area divided into “four large playgrounds covered with wire screens so that hand-ball, basket-ball or other sports may be played safely.”⁴ The basement was where the mechanical features were located, as well as “additional receiving rooms, free dental, eye, ear, nose and throat clinics and medical and mental examination rooms.”⁵

¹ “Heckscher Foundation for Children,” *Architecture and Building* Vol. LIV, December 1922. Page 111. Retrieved through Google Books, July 2018.

² Ibid, 111.

³ Ibid, 112.

⁴ Ibid, 112.

⁵ Ibid, 112.

IV. CAST STONE ANALYSIS

Description



Cast stone is a highly refined form of concrete that is pressed into molds to simulate natural stone. The basic mixtures are composed of water, fine and coarse aggregate, cementing agents, and pigments. Cementing agents can include lime, natural cement, portland cement, oxychloride, and sodium silicate. Early cast stone operations imported their natural and portland cements, until domestic portland cement production increased and prices dropped.⁶ As this occurred, the

industry developed, and by the mid twentieth century numerous patents had been filed for cast stone formulations and finishes.

Cast stone can be molded to represent plain ashlar blocks or intricately carved ornament. It can deteriorate in a number of ways, including separation at the facing mix and backing mix, deterioration of the cementing matrix, and corrosion of iron or steel reinforcement. These generally cause the cast stone to disaggregate, crack, and spall.

The cast stone at the Heckscher Foundation Building is a greyish pink (Munsell 5R 8/2 to 7/2) in color, with large, visible aggregate of varying colors, including white, yellowish white, light grey, grey, dark grey, and dark reddish brown as well as some mica. There are few small, round voids. The worn surface of the cast stone has much larger aggregate than the aggregate seen in cross section, suggesting that this cast stone has a decorative facing mix with a more economical backing mix cast behind the facing.⁷ This indicates that a dry tamp method was used to produce this cast stone. This method uses a stiff, low-slump concrete mix that is pressed and compacted into molds, with a decorative outer layer cast around the core.⁸ Cast stone produced with this method results in a molded surface without a layer of cement and aggregate fines, which is consistent with the appearance of the cast stone at the Heckscher Foundation Building.

⁶ Thomas C. Jester, *Twentieth-Century Building Materials: History and Conservation*. McGraw-Hill, 1995. Page 87.

⁷ This information was included in a preliminary investigation by Highbridge Materials Consulting, Inc based on samples provided.

⁸ Jester, page 88.

History

The cast stone of the Heckscher Foundation Building, known as Benedict Stone, was provided by Benedict Stone Corporation⁹, Other existing structures utilizing this material include:

- The Trust Company of New Jersey, 35 Journal Square, Jersey City, completed in 1922,
- Allerton House, 130 East 57th Street, New York city, completed in 1923,
- Church of the Blessed Sacrament, 152 West 71st Street, New York City, completed in 1920, and
- The Town Hall, 123 West 43rd Street, New York City, completed in 1921.

Benedict Stone Corporation called their product “cut cast stone”, believing that the term “cast stone was too general a term and “is really about as meaningless as the term ‘cloth’ would be in a specification for a garment.”¹⁰ They explain their production process as follows:

The stone is made from the same detail drawings as would be furnished to an ordinary stoneyard. All of the ornament is made from models supplied by the leading modellers in accord with the choice of the architects, and after the ornament is molded it is tooled by skilled carvers in the same manner as natural stone to give it all of the sharpness and beauty of detail possible in stone. The plain surfaces are given any of the various finishes common to natural stone. Practically all of the stone simulating granites is hand bush hammered.¹¹

Petrographic Analysis

This section of the report is pending the full analysis by Highbridge Consulting Materials, Inc.

⁹ A Canadian cast stone company based out of Montreal with major facilities in Chicago and Tuckahoe, NY.

¹⁰ Contractor’s Atlas “Cut Cast Stone, The highest development of synthetic stone: an interview with James G. Benedict,” March 1921, Vol 9, #3, Page 2.

¹¹ Contractor’s Atlas “Cut Cast Stone, The highest development of synthetic stone: an interview with James G. Benedict,” March 1921, Vol 9, #3, Page 2.

V. – COATING IDENTIFICATION AND ANALYSIS

Methodology

The coating on the cast stone was identified to help determine if the coating could be successfully removed with paint strippers or if mechanical means would be required. Two areas were removed from the cast stone below the first floor cornice, with a scalpel. Sample areas measured approximately two square inches. One sample was removed from a corner of the cast stone that had received only one coating campaign. The second sample was removed from an area that appeared to have two coating campaigns.

Upon returning to the JBC laboratory, the coating samples were examined microscopically using a Motic Stereo Zoom microscope with 10X - 63X magnification and a Zeiss Axioskop 40 polarizing light microscope with ultraviolet illuminator. The presence of one coating in the first sample and two coatings in the second was confirmed. As the later coating in the second sample appeared to be a modern latex coating based on its lack of fluorescence and physical properties, only the sample containing the earlier coating was sent to KTA-Tator, Inc. for FTIR spectroscopic analysis in order to identify the binder of the coating. The full analysis can be found in Appendix B.

Findings

The coating was identified as a styrene-modified alkyd coating. This is consistent with the fluorescence of the coating under UV illumination. Titanium dioxide and kaolin clay were also identified. Titanium dioxide is used in coatings as the main white pigment and source of hiding power. Kaolin clay is added to coatings to increase the hiding power of titanium dioxide. Its contribution to color is minimal when compared to titanium dioxide. Silicates were also found, but these may have been remnants of the cast stone substrate.

Styrene-modified alkyd blends were popular binders in exterior masonry water and damp proof coatings for their breathability and alkali resistivity. In the mid-1990s, these binders were phased out due to a slowdown in styrene production due to environmental concerns and development of newer, better-performing acrylic and elastomeric binders. Following a period of use where alkyds were blended with new acrylics and a move toward water-based coatings, alkyds have seen a decline in use.

Recommendations

Both styrene-modified alkyd coatings and modern latex or acrylic coatings can be removed with paint strippers. JBC recommends that several strippers by different manufacturers be tested to determine the most gentle and effective way to remove the coatings from the cast stone.

VI. – MORTAR ANALYSIS

Methodology

Two samples of the mortar were removed on June 27, 2018 from the brick at a probe area on the west façade of the south wing, along Fifth Avenue. One sample was removed from the joint surface area to be representative of the pointing mortar, and one was removed from the back of the mortar, where a bedding mortar would traditionally be used.

A freshly broken surface of each sample was examined under a variable zoom microscope with an external light source equipped with daylight filters. The binder in the samples was matched to a color standard of the Munsell Color Chart (as per ASTM “1535 Specifying Color by the Munsell System”) under natural light. The samples were then separated into three component parts—acid-solubles, “fines” (i.e. pigment, clay or cement residue), and aggregate or sand—via wet-chemical techniques.

The samples were first crushed and then digested with 3M hydrochloric acid. Levigation and filtration were used to separate the fines from the aggregate. Weight percentages of the constituent parts were calculated to gain an understanding of the original mortar mix. The colors of the “fines” and sand were matched to the Munsell Soil Color Chart. Predominant colors and shapes of sand grains were noted during examination of the aggregate fractions. Sieve analysis of the sand was performed to determine particle size distribution.

Results

Sample 1: Pointing Mortar



Figure 1. Pointing under simulated daylight illumination.

On a relative scale of 1 to 5, with 1 being the softest and 5 being the hardest, the mortar has a hardness rating of 3. The size of the mortar joints is approximately ½". It is a well-mixed mortar,

with irregular voids of varying sizes and visible aggregate well-coated in binder. In cross-section the matrix of the mortar is pale yellow (Munsell 2.5Y 8/2) in color and a square recessed profile. The mortar does not appear to have been compacted properly.

Components of Mortar



Figure 2. Mortar sands under simulated daylight illumination.

Acid soluble fraction – 13.48% of the total sample weight. A quick and effervescent reaction was produced upon the addition of a 3M solution of hydrochloric acid to the crushed portion of the sample.

“Fines” – 3.00% of the total sample weight. The “fines” are white (Munsell 2.5Y 8/1) in color.

Aggregate – 83.52% of the total sample weight. The overall color of the aggregate is light greyish yellow (between Munsell 2.5Y7/2 and 8/2), and consists of opaque and translucent quartz, with some rose and orange quartz with mica and dark lithic particles. The grains are sub-rounded in shape and range in size from very fine (1/16mm) to coarse (4mm).

Sieve analysis of the aggregate portion is as follows:

Sieve Number	% Passing	ASTM limit for Natural Sand
#4	100.0%	100%
#8	91.5%	95 – 100%
#16	80.5%	70 – 100%
#30	59.7%	40 – 75%
#50	21.7%	10 – 35%
#100	4.5%	2 – 15%
#200	0.9%	0 – 5%

The aggregate from the mortar is slightly coarser than a well-graded natural sand. These larger pieces of aggregate are visible in cross section and on the worn surface of the mortar.

Sample 2: Bedding Mortar



Figure 3. Pointing under simulated daylight illumination.

On a relative scale of 1 to 5, with 1 being the softest and 5 being the hardest, the mortar has a hardness rating of 3. The size of the mortar joint is approximately ½". It is a well-mixed mortar, with irregular voids of varying sizes and visible aggregate well-coated in binder. In cross-section the matrix of the mortar is pale yellow (Munsell 2.5Y 8/2). This mortar is consistent with the pointing mortar in strength, color, and appearance.

Components of Mortar



Figure 4. Mortar sands under simulated daylight illumination.

Acid soluble fraction – 16.61% of the total sample weight. A quick and effervescent reaction was produced upon the addition of a 3M solution of hydrochloric acid to the crushed portion of the sample.

“Fines” – 4.75% of the total sample weight. The “fines” are white (Munsell 2.5Y 8/1) in color.

Aggregate – 78.64% of the total sample weight. The overall color of the aggregate is light greyish yellow (between Munsell 2.5Y7/2 and 8/2), and consists of opaque and translucent quartz, with some rose and orange quartz with mica and dark lithic particles. The grains are sub-rounded in shape and range in size from very fine (1/16mm) to coarse (4mm).

Sieve analysis of the aggregate portion is as follows:

Sieve Number	% Passing	ASTM limit for Natural Sand
#4	100.0%	100%
#8	92.7%	95 – 100%
#16	77.8%	70 – 100%
#30	55.6%	40 – 75%
#50	20.5%	10 – 35%
#100	4.3%	2 – 15%
#200	0.9%	0 – 5%

The aggregate from the mortar is slightly coarser than a well-graded natural sand. It is consistent in size, shape, composition, and grading with the pointing mortar.

Conclusions

The mortar used for the pointing and bedding of the brick at the Heckscher Foundation Building are the same. Based on strength, reaction type, and fines, they both appear to be cement-lime mixes which are consistent with the building's period of construction.

Replication Recommendations

JBC's services were requested to match the appearance of the mortars with modern materials. The recommendations below represent an effort to approximate the properties of the mortar using modern materials. Consideration was given to matching the color, texture, and strength of the sample. The recommended mortar mixes conform to ASTM/BIA Standards. The replication mortars were matched to a freshly broken sample.

It is our recommendation that the replication mortar mixes for brick mortars at the Heckscher Foundation Building be:

ASTM Standard **Type N** (ASTM C-270 95a)

The Brick Industry Association describes a Type N mortar as a general all-purpose mortar with good bonding capabilities and workability. All mortar joints should be fully raked to a depth of 2.5 times the width of the joint or to sound mortar, whichever is deeper, and the units should be pointed to the same depth.

As with the pointing of masonry in any historic structure, the original joint profiles and widths should be documented before joints are raked and replicated during pointing. **WARNING:** cutting joints with a grinder will damage the brick. If mechanical methods are not sufficient to remove the mortar, use only micro-grinders and qualified workmen whose skill have been established in a mock-up of mortar removal.

Samples 1 and 2: Brick Bedding and Pointing Mortar

- 1 part White Portland Cement, Type I (ASTM C150)
- 1 part Hydrated Lime, Type S (ASTM C207)
- 5 parts Schofield "181" passed through a #4 sieve.
- 1/64 part Raw Sienna J4556 by Huntsman/Rockwood Pigments
- 1/32 part Medium Raw Umber J4556 by Huntsman/Rockwood Pigments

Recommended Materials and Suppliers

As accurate replication mixes are difficult to formulate, the type and quantity of materials used are essential to ensure on-site reproduction. Materials recommended in this report or their equal may be used. If materials are substituted, the resulting appearance of the mortar may vary.

Recommended Cement

White Portland Cement, Type I

Available from Lehigh Cement Co., 7660 Imperial Way, Allentown, PA 18195, (800) 638-1716, or substitute equal

Recommended Lime

Hydrated Lime, Type S

Available from Graymont, call for local supplier (800) 537-4489, or substitute equal

Recommended Sand

As the selection of an appropriate aggregate is critical to the formulation of any replication mortar, the sand fraction isolated during analysis was compared to a library of sands commercially available in the greater New York area. Aggregate samples have been enclosed to facilitate substitutions with locally available sands.

Schofield “181” – described as a predominantly fine to coarse sized natural white concrete sand, with the addition of pebbles up to 10mm in size.

Available from George Schofield Co., Inc., P.O. Box 110, Bound Brook, NJ 08805 (732) 356-0858

Recommended Pigments

Raw Sienna J4556 by Huntsman/Rockwood Pigments

AND

Medium Raw Umber J4556 by Huntsman/Rockwood Pigments

Available from Edison Coatings as 5lb. “ColorPaks,” 3 Northwest Drive, Plainville, CT 06062 (800) 341-6621, Website: www.edisoncoatings.com

VII. – SOILING MAPPING

The cast stone at the Heckscher Foundation Building is generally lightly soiled, with areas of heavy atmospheric and biological soiling as well as biological growth at lintels, sills, and belt courses. There are also areas of efflorescence on the brick and terra cotta at the parapet.



Atmospheric soiling is the accumulation of air pollutants on the surface of the building over time. It is most often found as a black crust on the undersides and faces of the masonry. This crust is primarily composed of black carbon carried in the air and deposited on the building. Areas protected from rain, such as the undersides of cornices, tend to exhibit a greater build-up of crusts. This type of soiling is found on the underside of the cast stone belt course below the sixth floor and

the cast stone cornice below the second floor.



Biological soiling on masonry is a symptom of excess moisture in the masonry. It can be present in the form of micro-flora such as algae, moss and lichen, or macro-flora such as vines and saplings, and often occurs in shaded areas. Biological soiling is often a cosmetic issue; however, as a symptom of moisture infiltration, it can be indicative of larger issues. Biological soiling is found on the sills and the second floor cornice, mostly below air conditioners and where water can pool.



Biological growth can sometimes be damaging in and of itself. Bacteria and lichen produce oxalic acids that damage masonry. Biological growth clogs pores, thus making it hard for water to escape and contributing to the deterioration of masonry. Vines and saplings will usually damage masonry, but need to be carefully monitored because if they have become too integrated into the building removal could cause the wall to break down farther. Root growth can also deteriorate the mortar and cause masonry displacement. Biological growth is found at the second floor cornice where water pools. The types of biological growth vary from algae, to moss and saplings.



Efflorescence is the presence of soluble salts found on the surface of a material, manifested as a powdery bloom. As water containing soluble salts evaporates from the masonry, it deposits the salts on the masonry surface. The salt may originate from external sources like de-icing salts or bird guano and enter the masonry via capillary action, or the salts may exist within the masonry itself. This condition can be an indicator of water infiltration issues. This seems to be the case at the Heckscher Foundation building, where there have been issues with the roofing and parapet walls. This condition can be seen on each elevation below the cornice and above the sixth floor windows and affects both brick and cast stone.

Locations of these types of soiling can be found in Appendix C.

VIII. COATING AND SOILING REMOVAL RECOMMENDATIONS

Coating Removal Recommendations

Based on the results of the coating analysis, which identified the coating on the cast stone as a modified alkyd coating with a styrenated binder, the coating may be removed with commercial paint removers. JBC recommends that several strippers by different manufactures be tested to determine the most gentle and effective way to remove the coatings from the cast stone.

JBC recommends testing the following products and dwell times be tested:

1. Dumond Smart Strip, 24 hr dwell;
2. Dumond Smart Strip PRO, 24 hr dwell;
3. Cathedral Stone Light Duty Paint Remover, 24 hr dwell;
4. Cathedral Stone Heavy Duty Paint Remover, 24 hr dwell;
5. 3M Safest Stripper, 24 hr dwell;
6. CitriStrip, 24 hr dwell;
7. Dumond Peel Away 7, 24 hr dwell;
8. Dumond Peel Away 5, 24 hr dwell;
9. Blue Bear 600 GL Coatings Remover, 24 hr dwell;
10. Prosoco Enviro Klean Sāf Strip 8, 15 min dwell;
11. Prosoco Enviro Klean Sāf Strip, 15 min dwell;

Technical and Safety Data Sheets for these products are included in Appendix D.

Atmospheric Soiling Removal Recommendations

Based on the degree of soiling observed on site and the pattern of soiling on the undersides of the cast stone elements, JBC recommends that several cleaners by different manufactures be tested to determine the most gentle and effective way to remove the atmospheric soiling from the cast stone.

Testing of these products must be done to ensure that the chosen product does not have a detrimental effect on adjacent masonry that may come into contact with the product through drips or rinsing.

JBC recommends testing the following products be tested per the manufacturer's instructions and with varying dwell times and dilutions:

1. Water Misting
2. Dumond Safe & Easy All-Purpose Cleaner
3. Dumond Safe & Easy Ultimate Restoration Cleaner
4. Dumond Safe & Easy Heavy Duty Restoration Cleaner
5. Cathedral Stone Light Duty Restoration Cleaner
6. Cathedral Stone Heavy Duty Restoration Cleaner
7. Prosoco Sure Klean 766 Limestone & Masonry Prewash
8. Prosoco Sure Klean 942 Limestone & Marble Cleaner
9. Prosoco Sure Klean Light Duty Restoration Cleaner
10. Prosoco Sure Klean Heavy Duty Restoration Cleaner
11. Prosoco Sure Klean Heavy Duty Restoration Cleaner NE
12. Prosoco Sure Klean Restoration Cleaner

Technical and Safety Data Sheets for these products are included in Appendix E.

Biological Growth and Soiling Removal Recommendations.

JBC recommends that small plants be removed manually prior to chemical treatment in order to best limit regrowth.

JBC recommends that several cleaners by different manufactures be tested to determine the most gentle and effective way to remove biological soiling from the cast stone.

Testing of these products must be done to ensure that the chosen product does not have a detrimental effect on adjacent masonry that may come into contact with the product through drips or rinsing.

JBC recommends testing the following products be tested per the manufacturer's instructions and with varying dwell times:

1. LimeWorks.us D/2 Biological Solution
2. Prosoco ReKlaim Activator and Cleaner
3. Prosoco ReVive

Please note that some of the products included in the *Atmospheric Soiling Removal Recommendations* may also remove biological growth and may also be tested.

Technical and Safety Data Sheets for these products are included in Appendix F.

Appendix A
Highbridge Consulting Materials
Cast Stone Analysis Report

Museo del Barrio
Heckscher Foundation Building
New York, NY

This page is intentionally blank and will be replaced by the Cast Stone Analysis Report from Highbridge Consulting Materials.

A p p e n d i x B
K T A - T a t o r , I n c
R e s i n I d e n t i f i c a t i o n R e p o r t

Museo del Barrio
Hecksher Foundation Building
New York, NY



July 11, 2018

Email: jpont@jbconservation.com

Ms. Jennifer Pont
Jablonski Building Conservation
40 West 27th Street, 12th Floor
New York, NY 10001

SUBJECT: Results of Generic Resin Identification; KTA-Tator, Inc. Project No. 380547

Dear Ms. Pont:

In accordance with your email authorization dated July 6, 2018, KTA-Tator, Inc. (KTA) has completed the generic resin identification on the submitted sample. This report contains descriptions of the testing procedures employed and the results of the testing.

SAMPLES

One plastic bag containing paint chip scrapings labeled, "Heckscher Bldg; Cast stone coating" was received from Jablonski Building Conservation on July 6, 2018. It should be noted that at no time did KTA personnel witness the acquisition of the sample. The KTA identification designated for the sample was KTA-1.

INFRARED SPECTROSCOPY

Infrared spectroscopic analysis was performed with a Mattson Galaxy Model 3020 Fourier transform infrared spectrometer. Prior to analyzing a resin extraction was of the sample was performed. Sample scrapings were combined with methylene chloride in a beaker and allowed to sit for 1 hour, the beaker was then agitated and allowed to sit for another hour to extract the resin. The liquid portion was then drawn off and decanted into a mortar, this solution then evaporated from the mortar leaving only the resin. This resin residue was then combined with potassium bromide powder and formed into a pellet under high pressure. The pellet was then placed in the optical path of the spectrometer and a spectrum was obtained over the range of 4000 to 400 cm^{-1} (appended).

Briefly, the analysis revealed that the spectrum obtained of the extraction was most consistent with a modified alkyd resin, as evidenced by the spectral bands at 1727 and 1274 cm^{-1} . The presence of styrene was evidenced by the characteristic band pattern near 3000 cm^{-1} , along with



the bands at 1600, 1492, 1450, 757, and 700 cm^{-1} . China clay was evidenced by the bands near 1030, 1010, 940, 914, 540, and 470 cm^{-1} . Silicates were evidenced by the broadening in the 1100 to 1000 cm^{-1} region, and titanium dioxide was evidenced by the broad band between 700 and 500 cm^{-1} .

If you have any questions concerning the testing or this report, please contact me by telephone at 412.788.1300 extension 230, or by email at mswogger@kta.com.

Sincerely,

KTA-TATOR, INC.

A handwritten signature in black ink, reading 'Melissa A. Swogger'.

Melissa A. Swogger
Project Manager/Chemical Technician

A handwritten signature in black ink, reading 'Valerie D. Sherbondy'.

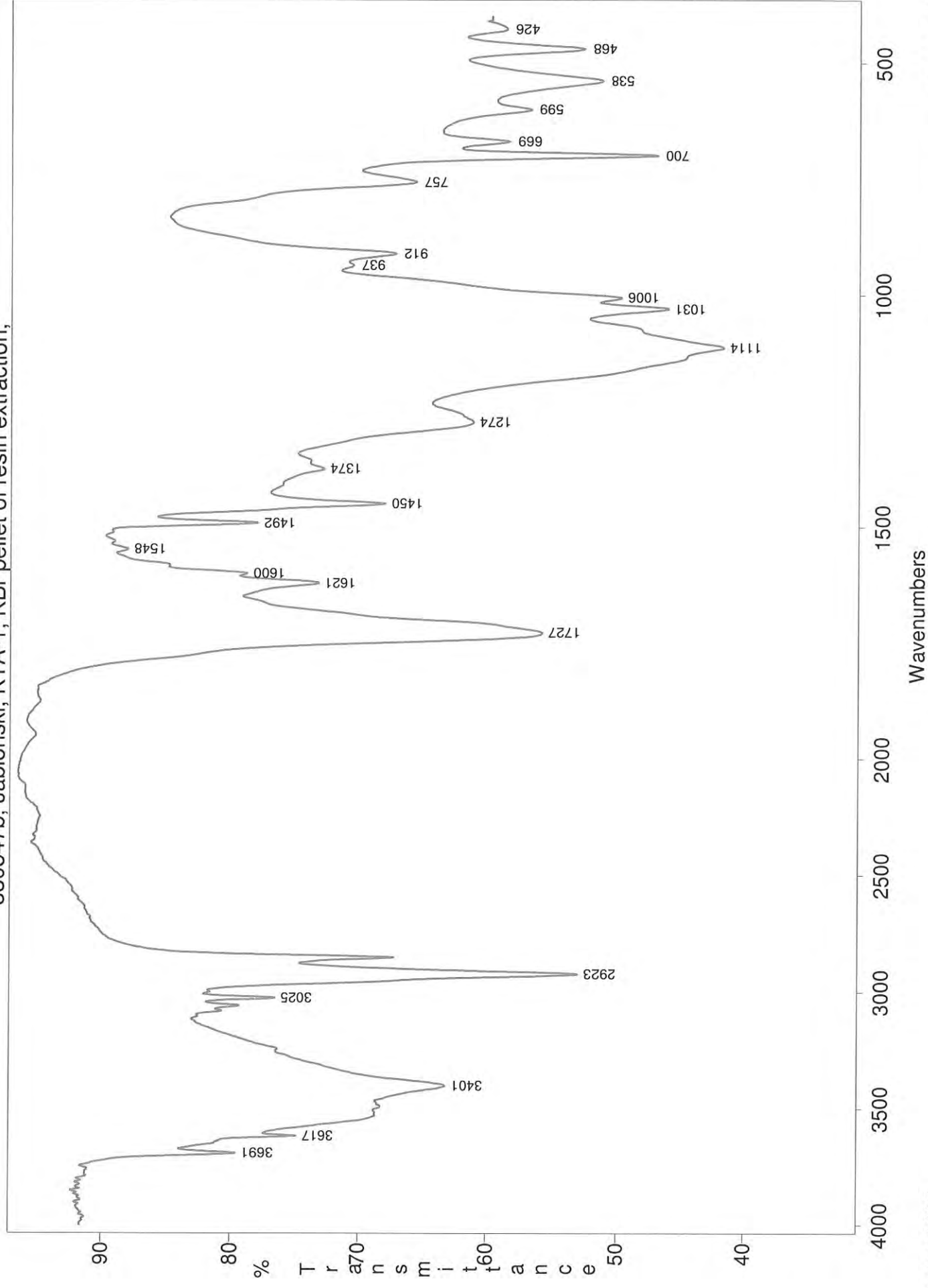
Valerie D. Sherbondy
Technical Manager - Analytical Laboratory Services

Appendix: Infrared Spectrum

MAS/VDS:pm

NOTICE: This report represents the opinion of KTA-TATOR, INC. This report is issued in conformance with generally accepted industry practices. While customary precautions were taken to verify the information gathered and presented is accurate, complete and technically correct, this report is based on the information, data, time, materials, and/or samples afforded. This report should not be reproduced except in full.

380547b, Jablonski, KTA-1, KBr pellet of resin extraction,



Operator: MAS
Resolution: 4.0

Scans: 32
Date: Mon Jul 09 12:45:16:20 2018

A p p e n d i x C
S o i l i n g M a p

Museo del Barrio
Heckscher Foundation Building
New York, NY



Heckscher Foundatin Building Soiling			
	Description	Quantity	Unit
AC	Air Conditioner Unit	22	Count
	Atmospheric Soiling	449.97	sf
	Biological Soiling	378.56	sf
	Efflorescence	405.52	sf

Note that quantities are approximate and should be field-verified.

Heckscher Foundation Building
El Museo del Barrio
1230 Fifth Avenue
New York, NY 10029

JBC Assessment by:
Jablonski Building Conservation, Inc.
40 West 27th Street, 12th Floor
New York, NY 10001

Drawing by:
Consulting Associates
773 Morton Street
East Rutherford, NJ 07073

Cast Stone Soiling Mapping
Page 1
July 2018



Heckscher Foundatin Building Soiling			
	Description	Quantity	Unit
AC	Air Conditioner Unit	9	Count
	Atmospheric Soiling	275.08	sf
	Biological Soiling	289.51	sf
	Efflorescence	206.02	sf

Note that quantities are approximate and should be field-verified.

Heckscher Foundation Building
El Museo del Barrio
1230 Fifth Avenue
New York, NY 10029



Assessment by:
Jablonski Building Conservation, Inc.
40 West 27th Street, 12th Floor
New York, NY 10001

Drawing by:
Consulting Associates
773 Morton Street
East Rutherford, NJ 07073

Cast Stone Soiling Mapping
Page 2
July 2018

A p p e n d i x D
R e c o m m e n d e d P r o d u c t s f o r
C o a t i n g R e m o v a l

Museo del Barrio
Hecksher Foundation Building
New York, NY



Smart Strip™ – Advanced Paint Remover

Tech Data Sheet

Product Description & Use: **Smart Strip™** is an environmentally responsible paint remover that is pH neutral and safe for the user. **Smart Strip™** is water-based and extremely effective for removing multiple layers of oil-based, latex, acrylic, varnishes and urethanes from virtually all interior and exterior surfaces. (IE. Wood, brick, metal, concrete, stone, plaster and most fiberglass's) **Smart Strip™** is excellent for intricate, carved or molded surfaces. Because it is a paste, it is easily applied with a brush, roller, or conventional airless sprayer. **Smart Strip™** is formulated to remain wet and effective over extended periods and does not require the use of **Dumond® Laminated Paper**. Dwell times will vary depending on the type of coatings, number of layers and temperature. Always preform a test patch to determine exact dwell time and proper thickness to apply this product. To use, apply to substrate with a brush, roller or sprayer according to test patch results. Once **Smart Strip™** is ready to be removed use either a scraper, squeegee or power washer to strip substrate. Be sure to scrub remaining residue with nylon brush and water. Use **Peel Away™ After Strip** for stubborn remaining residue. Allow Substrate to dry thoroughly before repainting.

Features & Benefits:

- **Formulated without methylene chloride**
- **Will not burn skin**
- **Removes up to 15 layers of latex of acrylic coatings in a single application**
- **Environmentally responsible: water based**
- **Virtually no odor**
- **Zero VOC**
- **pH neutral – No neutralization necessary**

Limitations: May not be suited for the removal of some epoxies, lead-based paints and primers as well as some high performance coatings. **Smart Strip™** may damage or discolor some types of glass, plexiglass, plastics, vinyl or rubbers. Always test **Smart Strip™** in a small inconspicuous area before applying to your entire substrate.

Test Patch: Always perform a test patch in a small inconspicuous area on each type of substrate and paint coating prior to full application. Testing before beginning any project is the best way to ensure product effectiveness. Test patches can determine the proper dwell time

and thickness to apply the product for you specific application. Failure to do a test patch can result in the need for more than one application, increasing labor and material costs.

Recommended Substrates: **Smart Strip™** can be used on most substrates, however is not recommended for the following: **Drywall, EIFS, plywood and laminates, Plexiglass, some fiberglass and plastics.**

Regulatory Information: **Smart Strip™** is VOC compliant with all national, state and local regulations.

Preparation: Be sure that the surface is clean, dry and dull before beginning your project. Protect and cover all areas such as vegetation and other surfaces not designated to be stripped including adjoining surfaces where overspray and rinse water may travel. Solvent resistant polyethylene sheets can be used as an effective barrier. Wet down all vegetation before beginning and cover with **Dumond® Catch-N-Cover™** or 6 mil solvent resistant polyethylene sheeting. Be careful not to lay sheeting on vegetation in the sun or it may result in killing the foliage.

Surface and Air Temperatures: For best results, use product in temperatures above 50° degrees and below 90° degrees Fahrenheit. To avoid product freezing and reducing effectiveness do not use below 35° degrees. Product effectiveness is increased in warmer temperatures and greatly decreased below 50° degrees Fahrenheit.

Application & Spread Rate: **Dumond®** always recommends working in smaller manageable areas when stripping unless you are working with a large number of people. Using a trowel, brush, roller or sprayer apply paste no less than a 1/8" according to test patch results. For a 24 hour dwell time ¼ inch is recommended. When applying onto irregular surfaces use a nylon brush to force paste into intricate areas. Product can dwell between 3-24 hours if necessary. **Smart Strip™** provides an average spread rate of approximately 40-50 Sq. Ft. per gallon; results may vary based on substrate texture and porosity.

- **Spray Application:** **Dumond®** recommends that **Smart Strip™** be sprayed with an airless paint sprayer. The sprayer pump size should be at least ¾ gallon per minute and all gun and manifold filters should be removed prior to spraying. Hose size should be a **new** 1/4" ID however a 3/8" ID hose will reduce strain on the sprayer. It is always recommended to use a new hose on the job, as old paint in the lines will dislodge and cause clogs during application. Keep a clean bucket of water available, as an occasional flush of the pump may be necessary on hot days to alleviate clogs and the pumps inability to build up pressure. Do not leave **Smart Strip™** in the sprayer or spray lines

overnight. Flush the sprayer and hose thoroughly each day and upon completion with warm water and dish detergent.

Removal & Clean Up: Once **Smart Strip™** is ready to be removed use a pressure washer or scraper (preferably plastic). After all paste has been removed, immediately use a nylon brush and clean water to scrub residue off the substrate, paying particular attention to crevices, grooves and cracks. Rinse thoroughly with water to remove all remaining residue. For optimal results, low pressure washing is recommended for final rinse when working outside. Dispose of paper, paste remover and dissolved coatings according to federal, state and local regulations. If you are having difficulty removing the residue after stripping use the **Peel Away® After Strip** and a nylon scrub brush to remove.

Best Practices:

- Always test each type of surface and paint coating for suitability, dwell times, and thickness.
- Let **Smart Strip™** dwell at least 6 hours before removing.
- Never apply **Smart Strip™** and leave it for 24 hours without checking on it
- If product dries or hardens to surface, apply a thin coat of **Smart Strip™** on hardened area and wait 30 minutes to 1 hour and remove.

Availability & Cost: **Dumond® Chemicals** products are available through a nationwide network of paint stores, hardware stores and safety supply distributors. For outlet nearest you please visit www.dumondchemicals.com once on the website type your zip code or postal code into the dealer locator to find addresses and phone numbers of your nearest dealer.

Health & Safety Requirements: Not for internal consumption. While **Smart Strip™** is formulated to be safe for the user, surface and environment, proper safety procedures should be followed at all times when handling this product. Read the full label and MSDS for precautionary instructions before use.

24-Hour Emergency Information:

1-800-535-5053 **North America** or 1-325-323-3500 **International**

Warranty: **Dumond® Chemicals, Inc.** warrants all of its products to be free from defects, and makes no other warranties with respect to its products, express or implied, including without limitation the implied warranties of MERCHANTABILITY OF FITNESS FOR PARTICULAR PURPOSE. **Dumond® Chemicals, Inc.** liability shall be limited in all Events to supplying sufficient products to re-treat the specific areas to which defective product have been applied. **Dumond® Chemicals, Inc.** shall have no other liability, including liability for incidental, consequential or resultant

damages whether due to breach of warranty or negligence. This warranty may not be modified or extended by representatives of **Dumond® Chemicals, Inc.** or its distributors, and dealers.

Technical Services: Dumond's expert staff is available to answer technical questions and provide product-specific information. On-site assistance is available at no additional cost. Call 800-245-1191, email info@dumondglobal.com or visit www.dumondchemicals.com with product or technical questions.

Technical Data:

- **Form** - White Paste
- **Wt./Gal** - 10 Pounds
- **Flash Point** - None
- **pH** - 7
- **VOC** - Zero
- **Freeze Point** - Maintain above 32 degrees F°
- **Shelf Life** - 2 years in a tightly sealed container and kept in a warm, clean and dry environment.



83 General Warren Blvd, Suite 190 Phone: 609/655-7700 email: info@dumondglobal.com
Malvern, PA 19355 Fax: 609/655-7725 www.dumondchemicals.com



SAFETY DATA SHEET

Issue Date 23-Jun-2011

Revision Date 3-Mar-2015

Version 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier**Product Name** Smart Strip**Other Means of Identification****SDS #** DCI-039**Recommended Use of the Chemical and Restrictions on Use****Recommended Use** Paint remover.**Details of the Supplier of the Safety Data Sheet****Supplier Address**

Dumond Chemicals, Inc.
83 General Warren Blvd
Suite 190
Malvern, PA 19355

Emergency Telephone Number**Company Phone Number**

1-609-655-7700

Emergency Telephone

INFOTRAC 1-352-323-3500 (International)

1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Classification

Skin corrosion/irritation

Category 2

Signal Word**Warning****Hazard Statements**

Causes skin irritation

**Appearance** White viscous liquid**Physical State** Liquid**Odor** Faint aromatic odor**Hazards Not Otherwise Classified (HNOC)**

May be harmful if swallowed

May be harmful in contact with skin

Other Hazards

Toxic to aquatic life with long lasting effects

Toxic to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Water	7732-18-5	40-60
Benzyl alcohol	100-51-6	30-50
Titanium dioxide	13463-67-7	1-5

4. FIRST AID MEASURES

First Aid Measures

Inhalation	Remove to fresh air. Oxygen or artificial respiration if needed. Get medical attention if necessary.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if necessary.
Ingestion	If conscious give 2 glasses of water to dilute. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if necessary.
Skin Contact	Wash thoroughly with soap and water until no traces of the chemical remain. Remove contaminated clothing and shoes. Get medical attention if irritation occurs.

Most Important Symptoms and Effects, both Acute and Delayed

Symptoms	May cause skin and eye irritation. May be harmful if absorbed through the skin. Mists and vapors cause irritation of the eyes, mucous membranes, and upper respiratory tract.
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Indication of any Immediate Medical Attention and Special Treatment Needed

Note to Physicians	Treat symptomatically. Individuals with chronic respiratory or skin diseases may be at risk from exposure.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Water spray (fog). Foam. Dry chemical or CO₂.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Decomposition may be hazardous. Vapors may form explosive mixtures with air in confined areas. Sealed containers may rupture when heated. Cool containers exposed to flames with water until well after the fire is out.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions	Use personal protective equipment as required.
Environmental Precautions	Do not allow into any sewer, on the ground or into any body of water. See Section 12 for additional ecological information.

Methods and Material for Containment and Cleaning Up

Methods for Containment Prevent further leakage or spillage if safe to do so. Remove all sources of ignition. Dike spill and prevent spill from entering sewers and waterways. Collect using an inert absorbent material and place in appropriate containers for disposal.

Methods for Cleaning Up Keep in suitable, closed containers for disposal. Wash spill area with plenty of water. Spills and releases may have to be reported to Federal and/or local authorities. See section 15.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Advice on Safe Handling Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Protect container from physical damage. Avoid breathing vapors or mists. Remove contaminated clothing and shoes. Wash thoroughly after handling before eating, drinking, smoking, or using toilet facilities. Since empty container retains residue, follow all label warnings even after container is empty.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from oxidizers and incompatible materials.

Incompatible Materials Strong acids. Bases. Reducing agent. Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Titanium dioxide 13463-67-7	TWA: 10 mg/m ³	TWA: 15 mg/m ³ total dust (vacated) TWA: 10 mg/m ³ total dust	IDLH: 5000 mg/m ³

Appropriate Engineering Controls

Engineering Controls For operations where contact can occur, a safety shower and an eye wash facility should be available. Provide natural or mechanical ventilation to control exposure levels below airborne exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/Face Protection Chemical safety goggles/faceshield. Do not wear contact lenses.

Skin and Body Protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Butyl rubber or other impervious gloves are required.

Respiratory Protection If occupational exposure limits are exceeded, use NIOSH approved respirator with organic vapor cartridges and dust/mist pre-filter. For higher concentrations (greater than 10 times the recommended exposure limit) an approved supplied air respirator (with escape bottle if required) or self-contained breathing apparatus may be required. Selection of respiratory protection depends on the contaminant type, form, and concentration. Select in accordance with OSHA 1910.134 and good industrial hygiene practice.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	Liquid	Odor	Faint aromatic odor
Appearance	White viscous liquid	Odor threshold	Not determined
Color	White		

Property	Values	Remarks • Method
pH	6	
Melting point/freezing point	-15 °C / 5 °F	
Boiling point/boiling range	96 °C / 205 °F	
Flash point	None	
Evaporation rate	< 1	
Flammability (solid, gas)	Not determined	
Flammability limits in air		
Upper flammability limits	Not available	
Lower flammability limit	Not available	
Vapor pressure	0.1 mmHg	@ 30 °C
Vapor density	3-4	(Air=1)
Specific gravity	10.54 lbs/gal	
Water solubility	Partially soluble	
Solubility in other solvents	Not determined	
Partition coefficient	Not available	
Autoignition temperature	Not available	
Decomposition temperature	Not determined	
Kinematic viscosity	Not determined	
Dynamic viscosity	Not determined	
Explosive properties	Not determined	
Oxidizing Properties	Not determined	

Other Information

VOC Content (%)	0%
VOC Content	0 lbs/gal

10. STABILITY AND REACTIVITY**Reactivity**

Not reactive under normal conditions

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to Avoid

Keep out of reach of children.

Incompatible Materials

Strong acids. Bases. Reducing agent. Strong oxidizing agents.

Hazardous Decomposition Products

Carbon monoxide. Carbon dioxide (CO₂). Nitrogen oxides (NO_x). May oxidize with air to form benzaldehyde and benzoic acid.

11. TOXICOLOGICAL INFORMATION**Information on Likely Routes of Exposure****Product Information**

Inhalation	Avoid breathing vapors or mists.
Eye Contact	Avoid contact with eyes.
Skin Contact	May be harmful in contact with skin.
Ingestion	May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Benzyl alcohol 100-51-6	= 1230 mg/kg (Rat)	= 2000 mg/kg (Rabbit)	= 8.8 mg/L (Rat) 4 h
Titanium dioxide 13463-67-7	> 10000 mg/kg (Rat)	-	-

Information on Physical, Chemical and Toxicological Effects

Symptoms May cause skin and eye irritation. May be harmful if absorbed through the skin. Mists and vapors cause irritation of the eyes, mucous membranes, and upper respiratory tract.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure

Carcinogenicity Titanium dioxide is a possible carcinogen when it appears as a respirable dust.

Chemical Name	ACGIH	IARC	NTP	OSHA
Titanium dioxide 13463-67-7		Group 2B		X

Chronic toxicity Individuals with chronic respiratory or skin diseases may be at risk from exposure.

Numerical Measures of Toxicity- Product

Not determined

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	3047 mg/kg
ATEmix (dermal)	5000 mg/kg
ATEmix (inhalation-gas)	1750 mg/l
ATEmix (inhalation-dust/mist)	0.1 mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Benzyl alcohol 100-51-6	35: 3 h <i>Anabaena variabilis</i> mg/L EC50	460: 96 h <i>Pimephales promelas</i> mg/L LC50 static 10: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static	EC50 = 50 mg/L 5 min EC50 = 63.7 mg/L 15 min EC50 = 63.7 mg/L 5 min EC50 = 71.4 mg/L 30 min	23: 48 h water flea mg/L EC50

Persistence and Degradability

Material is readily biodegradable.

Bioaccumulation

The product has low potential for bioaccumulation.

Mobility

Not determined.

Chemical Name	Partition coefficient
Benzyl alcohol 100-51-6	1.1

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS**Waste Treatment Methods****Disposal of Wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION**Note**

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances

DOT

Not regulated

IATA

Not regulated

IMDG

Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Listed
DSL Listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances **IECSC**

- China Inventory of Existing Chemical Substances **KECL** -

Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

US State Regulations

Chemical Name	California Proposition 65
Titanium dioxide - 13463-67-7	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Benzyl alcohol 100-51-6		X	X
Titanium dioxide 13463-67-7	X	X	X

U.S. EPA Label Information

16. OTHER INFORMATION

<u>NFPA</u>	Health Hazards	Flammability	Instability	Special Hazards
	2	1	0	Not determined
<u>HMIS</u>	Health Hazards	Flammability	Physical Hazards	Personal Protection
	Not determined	Not determined	Not determined	Not determined

Issue Date 23-Jun-2011
Revision Date 3-Mar-2015
Revision Note New format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet



Smart Strip PRO™ – Advanced Paint Remover

Tech Data Sheet

Product Description & Use: Smart Strip™ PRO is a professional strength paint remover that effectively removes high performance, architectural and industrial paints and coatings. **Smart Strip™ PRO** will effectively remove multiple coats of varnishes, oil-based coatings, water-based coatings, acrylics, urethanes, most epoxies, some inorganic zincs and elastomeric coatings. **Smart Strip™ PRO** is safe for use on most substrates including wood, brick, stone, concrete, metal etc. This product is formulated to remain wet and effective without the use of **Dumond® Laminated Paper** however to extend the dwell time **Dumond® Laminated Paper** may be used. **Smart Strip™ PRO** does not require the use of a neutralizer after removal.

Features & Benefits:

- Low VOC
- Non-carcinogenic
- Non-caustic
- Non-flammable
- Formulated without methylene chloride
- Water based

Limitations: No recommended for use on glass, plastics, vinyl, most fiberglass, Plexiglas, drywall, plywood, smooth limestone, polished stone, IE: marble or granite, composite decking, EIFS, MDF, OSB, galvanized steel, laminates, veneers, stainless steel and rubber.

Test Patch: Always perform a small inconspicuous test area on each type of substrate and paint coating prior to full application. Testing before beginning any project is the best way to ensure product effectiveness. Test patches can determine the proper dwell time and thickness to apply the product for you specific application. Failure to do a test patch can result in need for more than one application, increasing labor and material costs.

Recommended Substrates: Before applying to the entire substrate, always do a test patch. Recommended for use on wood, brick, concrete, steel, metal, aluminum, cement, asphalt, unpolished stones, copper, tile, terra cotta, clap board, and slate surfaces.

Regulatory Information: VOC compliance - **Smart Strip™ PRO** meets national, state and local regulations.

Preparation: Be sure that the surface is clean, dry and dull before beginning your project. Protect and cover all areas such as vegetation and other surfaces not designated to be stripped including adjoining surfaces where overspray and rinse water may travel. Solvent resistant polyethylene sheets can be used as an effective barrier. Wet down all vegetation before beginning and cover with **Dumond® Catch-N-Cover™** or 6 mil solvent resistant polyethylene sheeting. Be careful not to lay sheeting on vegetation in the sun or it may result in killing the foliage.

Surface and Air Temperatures: To avoid product from freezing and reducing effectiveness do not use below 35° degrees Fahrenheit. For best results, use product in temperatures above 50° degrees Fahrenheit and below 90° degrees Fahrenheit. Product effectiveness is increased in warmer temperatures.

Application & Spread Rate: **Dumond®** always recommends working in smaller manageable areas when stripping unless you are working with a large number of people. Using a trowel, brush, roller or airless paint sprayer, apply paste no less than a 1/8" according to test patch results. For a 24 hour dwell time ¼ inch is recommended. When applying onto irregular surfaces use a nylon brush to force paste into intricate areas. Product can dwell between 3-24 hours if necessary. **Smart Strip™ PRO** provides an average spread rate of approximately 40-50 Sq. Ft. per gallon; results may vary based on substrate texture and porosity.

Spray Application:

Dumond® recommends that **Smart Strip™ PRO** be sprayed with an airless paint sprayer. The sprayer pump size should be at least ¾ gallon per minute and all gun and manifold filters should be removed prior to spraying. Hose size should be a **new** 1/4" ID, however a 3/8" ID hose will reduce strain on the sprayer. It is always recommended to use a new hose on the job, as old paint in the lines will dislodge and cause clogs during application. Keep a clean bucket of water available, as an occasional flush of the pump may be necessary on hot days to alleviate clogs and the pumps inability to build up pressure. Do not leave **Smart Strip™ PRO** in the sprayer or spray lines overnight. Flush the sprayer and hose thoroughly each day and upon completion with warm water and dish detergent.

Removal & Clean Up: Once **Smart Strip™ PRO** is ready to be removed use a pressure washer or scraper (preferably plastic). After all paste has been removed, immediately use a nylon brush and clean water to scrub residue off the substrate, paying particular attention to crevices, grooves and cracks. Rinse thoroughly with water to remove all remaining residue. For optimal results, low pressure washing is recommended for final rinse when working outside. Dispose of paper, paste remover and dissolved coatings according to federal, state and local regulations. If you are having difficulty removing the residue after stripping use the **Peel Away® After Strip** and a nylon scrub brush to remove.

Best Practices:

- Always test each type of surface and paint coating for suitability, dwell times, and thickness.
- Let **Smart Strip™ PRO** dwell at least 6 hours before attempting to remove.
- Never apply **Smart Strip™ PRO** and leave it for 24 hours without checking on it
- If product dries or hardens to surface, apply a thin coat of **Smart Strip™ PRO** over hardened area and wait 30 minutes to 1 hour and remove.

Availability & Cost: **Dumond® Chemicals** products are available through a nationwide network of paint stores, hardware stores and safety supply distributors. For outlet nearest you please visit www.dumondchemicals.com once on the website type your zip code or postal code into the dealer locator to find addresses and phone numbers of your nearest dealer.

Health & Safety Requirements: Not for internal consumption. While **Smart Strip™ PRO** is formulated to be safe for the user, surface and environment, proper safety procedures should be followed at all times when handling this product. Read the full label and MSDS for precautionary instructions before use.

24-Hour Emergency Information:

1-800-535-5053 **North America** or 1-325-323-3500 **International**

Warranty: **Dumond® Chemicals, Inc.** warrants all of its products to be free from defects, and makes no other warranties with respect to its products, express or implied, including without limitation the implied warranties of MERCHANTABILITY OF FITNESS FOR PARTICULAR PURPOSE. **Dumond® Chemicals, Inc.** liability shall be limited in all Events to supplying sufficient products to re-treat the specific areas to which defective product have been applied. **Dumond® Chemicals, Inc.** shall have no other liability, including liability for incidental, consequential or resultant damages whether due to breach of warranty or negligence. This warranty may not be modified or extended by representatives of **Dumond® Chemicals, Inc.** or its distributors, and dealers.

Technical Services: **Dumond's** expert staff is available to answer technical questions and provide product-specific information. On-site assistance is available at no additional cost. Call 800-245-1191, email info@dumondglobal.com or visit www.dumondchemicals.com with product or technical questions.

Technical Data:

- **Form** - White Paste
- **Wt./Gal** – 10 lbs/gal
- **Flash Point** - None
- **pH** - 2
- **VOC** – 5%
- **Freeze Point** - 32
- **Shelf Life** – 3 years



83 General Warren Blvd, Suite 190 Phone: 609/655-7700 email: info@dumondglobal.com
Malvern, PA 19355 Fax: 609/655-7725 www.dumondchemicals.com

Issue Date 21-Aug-2012

Revision Date 3-Mar-2015

Version 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Smart Strip Pro

Other Means of Identification

SDS # DCI-66

Recommended Use of the Chemical and Restrictions on Use

Recommended Use Paint remover.

Details of the Supplier of the Safety Data Sheet

Supplier Address

Dumond Chemicals, Inc.
83 General Warren Blvd
Suite 190
Malvern, PA 19355

Emergency Telephone Number

Company Phone Number 1-609-655-7700

Emergency Telephone INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Classification

Skin corrosion/irritation

Category 2

Signal Word

Warning

Hazard Statements

Causes skin irritation



Appearance White paste

Physical State Paste

Odor Slight characteristic odor

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling

Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse

Hazards Not Otherwise Classified (HNO C)

May be harmful if swallowed
May be harmful in contact with skin

Other Hazards

Toxic to aquatic life with long lasting effects
Toxic to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Water	7732-18-5	40-60
Benzyl alcohol	100-51-6	30-50
Titanium dioxide	13463-67-7	1-5
Formic acid	64-18-6	1-5

4. FIRST AID MEASURES**First Aid Measures**

Inhalation	Remove to fresh air. Oxygen or artificial respiration if needed. Get medical attention if necessary.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if necessary.
Ingestion	If conscious give 2 glasses of water to dilute. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if necessary.
Skin Contact	Wash thoroughly with soap and water until no traces of the chemical remain. Remove contaminated clothing and shoes. Get medical attention if irritation occurs.

Most Important Symptoms and Effects, both Acute and Delayed

Symptoms	May cause skin and eye irritation. May be harmful if absorbed through the skin. Mists and vapors cause irritation of the eyes, mucous membranes, and upper respiratory tract.
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Indication of any Immediate Medical Attention and Special Treatment Needed

Note to Physicians	Treat symptomatically.
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5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Water spray (fog). Foam. Dry chemical or CO2.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Sealed containers may rupture when heated. At elevated temperatures, vapors may form explosive mixtures with air in confined areas. Decomposition may be hazardous. Cool containers exposed to flames with water until well after the fire is out.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES**Personal Precautions, Protective Equipment and Emergency Procedures**

Personal Precautions Wear appropriate protective clothing and equipment to prevent contact.

Environmental Precautions See Section 12 for additional ecological information. Do not allow into any sewer, on the ground or into any body of water.

Methods and Material for Containment and Cleaning Up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Scoop up and collect with an inert absorbent and place into closable containers for disposal. Wash spill area with plenty of water. Spills and releases may have to be reported to Federal and/or local authorities. See section 15.

7. HANDLING AND STORAGE**Precautions for Safe Handling**

Advice on Safe Handling Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists. Use personal protective equipment as required. Remove Personal Protective Equipment immediately after handling this product. Wash thoroughly after handling before eating, drinking, smoking, or using toilet facilities. Protect container from physical damage. Follow all SDS/label precautions even after container is emptied because it may retain product residues.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions Keep in a dry, cool and well-ventilated place. Keep away from oxidizers and incompatible materials.

Incompatible Materials Strong acids. Bases. strong oxidizers and reducing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Titanium dioxide 13463-67-7	TWA: 10 mg/m ³ In Powder Form	TWA: 15 mg/m ³ total dust (vacated) TWA: 10 mg/m ³ total dust	IDLH: 5000 mg/m ³
Formic acid 64-18-6	STEL: 10 ppm TWA: 5 ppm	TWA: 5 ppm TWA: 9 mg/m ³ (vacated) TWA: 5 ppm (vacated) TWA: 9 mg/m ³	IDLH: 30 ppm TWA: 5 ppm TWA: 9 mg/m ³

Appropriate Engineering Controls**Engineering Controls**

For operations where contact can occur, a safety shower and an eye wash facility should be available. Good general room ventilation (equivalent to outdoors) should be adequate under normal conditions.

Individual Protection Measures, such as Personal Protective Equipment**Eye/Face Protection**

Chemical safety goggles/faceshield. Do not wear contact lenses.

Skin and Body Protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Butyl rubber or other impervious gloves are required.

Respiratory Protection

None needed under normal use conditions with adequate ventilation. If the occupational exposure limits are exceeded, a NIOSH approved respirator with acid gas cartridges or supplied air respirator appropriate for the form and concentration of the contaminants should be used. Selection and use of respiratory equipment must be in accordance with OSHA 1910.134 and good industrial hygiene practice.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on Basic Physical and Chemical Properties**

Physical State	Paste	Odor	Slight characteristic odor
Appearance	White paste	Odor threshold	28.2 ppm (formic acid)
Color	White		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	2	
Melting point/freezing point	Not available	
Boiling point/boiling range	Not available	
Flash point	None	
Evaporation rate	Not determined	
Flammability (solid, gas)	Not determined	
Flammability limits in air		
Upper flammability limits	Not available	
Lower flammability limit	Not available	
Vapor pressure	Not determined	
Vapor density	Not determined	
Specific gravity	1.085	
Water solubility	Partially soluble	
Solubility in other solvents	Not determined	
Partition coefficient	Not available	
Autoignition temperature	Not determined	
Decomposition temperature	Not determined	
Kinematic viscosity	Not determined	
Dynamic viscosity	Not determined	
Explosive properties	Not determined	
Oxidizing Properties	Not determined	

Other Information

VOC Content	35.2 g/l
VOC Content (%)	5%
VOC Content	0.5 lbs/gal

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to Avoid

Keep out of reach of children.

Incompatible Materials

Strong acids. Bases. strong oxidizers and reducing agents.

Hazardous Decomposition ProductsCarbon monoxide. Carbon dioxide (CO₂). Nitrogen oxides (NO_x). May oxidize with air to form benzaldehyde and benzoic acid.**11. TOXICOLOGICAL INFORMATION****Information on Likely Routes of Exposure**

Product Information	The product has not been tested
Inhalation	Avoid breathing vapors or mists.
Eye Contact	Avoid contact with eyes.
Skin Contact	May be harmful in contact with skin. Causes skin irritation.
Ingestion	May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Benzyl alcohol 100-51-6	= 1230 mg/kg (Rat)	= 2000 mg/kg (Rabbit)	= 8.8 mg/L (Rat) 4 h
Titanium dioxide 13463-67-7	> 10000 mg/kg (Rat)	-	-
Formic acid 64-18-6	= 730 mg/kg (Rat)	-	-

Information on Physical, Chemical and Toxicological Effects

Symptoms	May cause skin and eye irritation. May be harmful if absorbed through the skin. Mists and vapors cause irritation of the eyes, mucous membranes, and upper respiratory tract.
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Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure

Carcinogenicity	Titanium dioxide is a possible carcinogen when it appears as a respirable dust.
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Chemical Name	ACGIH	IARC	NTP	OSHA
Titanium dioxide 13463-67-7		Group 2B		X

Numerical Measures of Toxicity- Product

Not determined

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	2708 mg/kg
ATEmix (dermal)	5000 mg/kg
ATEmix (inhalation-dust/mist)	22 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Benzyl alcohol 100-51-6	35: 3 h Anabaena variabilis mg/L EC50	460: 96 h Pimephales promelas mg/L LC50 static 10: 96 h Lepomis macrochirus mg/L LC50 static	EC50 = 50 mg/L 5 min EC50 = 63.7 mg/L 15 min EC50 = 63.7 mg/L 5 min EC50 = 71.4 mg/L 30 min	23: 48 h water flea mg/L EC50
Formic acid 64-18-6	25: 96 h Desmodesmus subspicatus mg/L EC50 26.9: 72 h Desmodesmus subspicatus mg/L EC50	175: 24 h Lepomis macrochirus mg/L LC50 static	EC50 = 46.7 mg/L 17 h	120: 48 h Daphnia magna mg/L EC50 138 - 165.6: 48 h Daphnia magna mg/L EC50 Static

Persistence and Degradability

Material is readily biodegradable.

Bioaccumulation

The product has low potential for bioaccumulation.

Mobility

Not determined.

Chemical Name	Partition coefficient
Benzyl alcohol 100-51-6	1.1
Formic acid 64-18-6	-0.54

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Formic acid 64-18-6	U123	Included in waste streams: K009, K010		U123

Chemical Name	California Hazardous Waste Status
Formic acid 64-18-6	Toxic Corrosive

14. TRANSPORT INFORMATION

Note	Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances
<u>DOT</u>	Not regulated
<u>IATA</u>	Not regulated
<u>IMDG</u>	Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Listed
DSL Listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances **IECSC**

- China Inventory of Existing Chemical Substances **KECL** -

Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Formic acid - 64-18-6	64-18-6	1-5	1.0

SARA 311/312 Hazard Categories

Acute health hazard Yes
Chronic Health Hazard Yes
Fire hazard No
Sudden release of pressure hazard No
Reactive Hazard No

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Formic acid 64-18-6	5000 lb			X
Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ		Reportable Quantity (RQ)
Formic acid 64-18-6	5000 lb			RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations

Chemical Name	California Proposition 65
Titanium dioxide - 13463-67-7	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Benzyl alcohol 100-51-6		X	X
Titanium dioxide 13463-67-7	X	X	X
Formic acid 64-18-6	X	X	X

U.S. EPA Label Information

16. OTHER INFORMATION**NFPA****Health Hazards****Flammability****Instability****Special Hazards**

2

1

0

Not determined

HMIS**Health Hazards****Flammability****Physical Hazards****Personal Protection**

Not determined

Not determined

Not determined

Not determined

Issue Date

21-Aug-2012

Revision Date

12-Dec-2012

Revision Note

New format

Disclaimer

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End of Safety Data Sheet



Light Duty Paint Remover

Fast Acting Paint Stripper

This water based paint remover is biodegradable, non-toxic, user friendly and environmentally safe. It is extremely effective in removing the tough, high performance coatings. This remover will effectively lift highly cross-linked urethane and epoxy top coats and primers, alkyds, non-skid coatings (100% solid content) and the toughest of industrial coatings. It is also capable of lifting fuel resistant primers, inorganic zinc primers and coal tar epoxies.

Features and Benefits

- **Water Based**
- **Fully Biodegradable**
- **Non Flammable**
- **Contains no TAPs or HAPs (Toxic/Hazardous Air Pollutants)**
- **Non-carcinogenic, non-toxic**
- **Easy clean up with running water**
- **Low VOCs**
- **Non-ozone-depleting**
- **Not regulated by authorities for transportation / storage**
- **Not regulated by authorities for worker health and safety**
- **Low and inoffensive odor**
- **Cost Effective:**
 - Requires much less chemical to achieve desired results
 - Reduces man-hours
 - Reduces cost of waste disposal
 - Reduces down time since other work at site can continue while stripper does its job
 - Lowers insurance costs for worker safety and storage hazards

Application Procedures

Test Area

Always prepare a test area prior to full application. This will indicate the time required for project completion and suitability of product for the paint and the substrate.

Equipment and Tools

This product is engineered for airless spray application. Use only airless equipment with chemical resistant packing. Equip the sprayer with a tip size of 0.019 inches or larger. (Example: a 519 or 425 tip). Other equipment: brushes, rollers, scraper, masking tape, plastic (polyethylene) sheet, pressure washer, electric drill with mixer, empty pails for clean-up, water. Roller application should be used **ONLY** for horizontal surfaces.

Preparation

MASKING: Cover / protect areas where stripping is not desired, including adjoining surfaces where over spray may travel. Plastic (polyethylene) sheets make a very effective barrier. If using masking tape, apply two layers of tape and remove the top layer immediately after application as the remover may soak through the tape, damaging paint under it. Plants should be covered or washed thoroughly before and during application.

MIXING: If on visual examination, water appears to have separated out of the product, thoroughly mix the stripper with a drill until it becomes homogeneous once again. **DO NOT SHAKE. DO NOT DILUTE.**

EQUIPMENT: Ensure application equipment is free of any previously applied products or chemicals or solvents (especially mineral spirits).

Application

Apply a thick, even layer of stripper onto the coating being removed. An airless sprayer is the most effective means of application. Always start the sprayer pump at the lowest pressure setting and slowly build up the pressure until an adequate fan pattern has been generated. The minimum wet film thickness should be 15 mils (300 microns). The stripper must be applied 30%-50% thicker than the coating to be removed, i.e., 10 mils of coating requires 13-15 mils of stripper to be removed effectively. High pressure is neither required nor desired. High pressure and narrow tip sizes will break the stripper's emulsion and will reduce its effectiveness. When trying to build up films thicker than 30 mils (600 microns), it is advisable to build

the stripper film in two separate applications. First apply a light coat of approximately 10 mils (250 microns), allow it to dwell for about 30 minutes and then build the rest of the stripper film thickness in the second application. Once applied, leave the stripper alone, as agitation slows down penetration. Brushing and rolling should be avoided because these methods produce a lower film build and inconsistent thickness of stripper.

Dwell Time

The time required for penetration varies according to the type of paint, and the temperature. Most paint systems require 1 to 6 hours. Leave the stripper overnight for best results.

Re-Application

When there are multiple layers of paint, it is quite likely that there is poor intercoat adhesion between some layers. Premature lifting may occur at this interface. If this happens, remove the lifted layers and reapply the stripper. Do not allow the stripper to dry out. The stripper is designed to remain wet and effective over extended periods of time (up to 48 hours), but excessive sunshine, windy conditions or insufficient stripper thickness can cause early drying. If the stripper starts to dry, reapply a light coating and allow extra time for completion

Removal and Cleanup

Removal of lifted paint can be completed by scraper, squeegee, wet/dry vacuum suction system or by pressure wash. The stripped surface must be rinsed with water or denatured alcohol to remove all chemical residues before repainting. When rinsing, always work from the bottom to the top. Any water that runs down the substrate will deactivate the stripper and allow the paint to re-adhere, therefore never work from the top to the bottom. Collect lifted paint and dispose of in accordance with local government regulations. Do not collect and/or store removed paint and stripper waste residue in metal containers. Clean up spray equipment by running water or denatured alcohol through the equipment soon after the spraying has been completed.

Safety Requirements

Proper safety procedures should be followed at all times while handling this product. Refer to the Material Safety Data Sheet for important health/safety information before use.

Limitations

Surface temperatures should be 65° to 95°F (20° to 32°C). The product performs effectively at lower temperatures (even at 32°F, 0°C), but the dwell time increases.

Packaging and Coverage

Packaging: 5-gallon pails

The product is engineered for thick film build up on vertical and overhead surfaces. The desirable wet film thickness of stripper is approximately one and a half times the dry film thickness of the paint. Minimum wet film thickness should be 15 mils (300 microns). The stripper must be applied 30%-50% thicker than the coating to be removed, i.e., 10 mils of coating requires 13-15 mils of stripper to be removed effectively. Typically, coverage is approximately 40 to 90 sq. ft./ US gallon (1 to 2.2 sq. m/L)

Technical Data

Appearance	White foamed emulsion
Specific Gravity	1
Boiling Point	92.8°C
pH (direct reading)	4.4

DO NOT ALLOW STRIPPER TO FREEZE!

Notice: The information contained herein is based on our own research and the research of others, and it is provided solely as a service to help users. It is believed to be accurate to the best of our knowledge. However, no guarantee of its accuracy can be made, and it is not intended to serve as the basis for determining this product's suitability in any particular situation. For this reason, purchasers are responsible to make their own tests and assume all risks associated with using this product.

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CSP Light Duty Paint Remover

Safety Data Sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : MasonRE S-305

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Paint Stripper

1.3. Details of the supplier of the safety data sheet

Cathedral Stone Products
7266 Park Circle Drive
Hanover, MD 21076
T 410-782-9150

1.4. Emergency telephone number

Emergency number : 800-331-1696

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Acute Tox. 4 (Oral) H302
Acute Tox. 4 (Inhalation) H332
Skin Irrit. 2 H315
Eye Irrit. 2B H320

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H302+H332 - Harmful if swallowed or if inhaled
H315 - Causes skin irritation
H320 - Causes eye irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P312 - If swallowed: Call a poison center/doctor if you feel unwell
P302 + P352 - If on skin: Wash with plenty of water
P304 + P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor if you feel unwell
P330 - Rinse mouth
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

CSP Light Duty Paint Remover

Safety Data Sheet

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Benzyl alcohol	(CAS No) 100-51-6	40 - 45	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312
Water	(CAS No) 7732-18-5	40 - 45	Not classified
Cellulose, 2-hydroxyethyl ether	(CAS No) 9004-62-0	0.5 - 2	Not classified

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Obtain medical attention if breathing difficulty persists.
- First-aid measures after skin contact : Rinse with plenty of water. Get medical attention for burns.
- First-aid measures after eye contact : Remove contact lenses immediately. Flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
- First-aid measures after ingestion : Do not induce vomiting. Give water to victim to drink. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : Harmful if inhaled. May cause respiratory irritation.
- Symptoms/injuries after skin contact : Causes skin irritation. Skin contact produces stinging and a white wound that clears in a short period of time. Prolonged contact may cause more serious burns.
- Symptoms/injuries after eye contact : Causes eye irritation. Eye contact produces stinging and a white wound that clears in a short period of time. Prolonged contact may cause more serious burns.
- Symptoms/injuries after ingestion : Harmful if swallowed. May cause gastrointestinal complications.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Use carbon dioxide, foam, dry chemical or water.
- Unsuitable extinguishing media : None.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Not flammable.
- Explosion hazard : Vapors can travel to a source of ignition and flash back. Closed containers may explode when overheated. Toxic gases may form when product comes in contact with extreme heat.

5.3. Advice for firefighters

- Protection during firefighting : Firefighters should wear full protective gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Stop the flow of material, if this is without risk.
- Methods for cleaning up : Confine spill and soak up with absorbent. Place in an approved container and dispose in accordance with local, state and federal regulations.

CSP Light Duty Paint Remover

Safety Data Sheet

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with eyes and skin. Wash thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Protect container against physical damage and store in a cool, dry ventilated area. Do not store above 120F (48C).

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Benzyl alcohol (100-51-6)	
ACGIH	Not applicable
OSHA	Not applicable
Water (7732-18-5)	
ACGIH	Not applicable
OSHA	Not applicable
Cellulose, 2-hydroxyethyl ether (9004-62-0)	
ACGIH	Not applicable
OSHA	Not applicable
Hydroxyacetic acid (79-14-1)	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Hand protection : Wear impervious gloves to minimize skin contact.
Eye protection : Face shield.
Skin and body protection : Wear suitable working clothes.
Respiratory protection : If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Viscous emulsion
Color : White
Odor : Mild
Odor threshold : 10 ppm
pH : 4.4
Melting point : < 0 °C
Freezing point : No data available
Boiling point : 92.8 °C
Flash point : No data available
Relative evaporation rate (butyl acetate=1) : No data available
Flammability (solid, gas) : No data available
Explosion limits : No data available
Explosive properties : No data available
Oxidizing properties : No data available

CSP Light Duty Paint Remover

Safety Data Sheet

Vapor pressure	: 15.5 mm Hg @ 20 C
Relative density	: 1
Relative vapor density at 20 °C	: No data available
Solubility	: Water: 57.7 %
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

Will not occur.

10.4. Conditions to avoid

Keep away from heat, sparks and flame. Decomposes when heated above 70-80C

10.5. Incompatible materials

Strong mineral acids, oxidizers, or strong alkalis.

10.6. Hazardous decomposition products

Oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed. Inhalation: Harmful if inhaled.

MasonRE S-305	
ATE US (oral)	500.000 mg/kg body weight
ATE US (gases)	4500.000 ppmV/4h
ATE US (vapors)	11.000 mg/l/4h
ATE US (dust, mist)	1.500 mg/l/4h
Benzyl alcohol (100-51-6)	
LD50 oral rat	1230 mg/kg
LD50 dermal rabbit	2 g/kg
LC50 inhalation rat (mg/l)	8.8 mg/l/4h
ATE US (oral)	1230.000 mg/kg
ATE US (dermal)	2000.000 mg/kg
Water (7732-18-5)	
LD50 oral rat	> 90 ml/kg
Hydroxyacetic acid (79-14-1)	
LD50 oral rat	1950 mg/kg
LC50 inhalation rat (mg/l)	7100 µg/m³ (Exposure time: 4 h)
ATE US (oral)	1950.000 mg/kg

Skin corrosion/irritation : Causes skin irritation.
pH: 2.6

CSP Light Duty Paint Remover

Safety Data Sheet

Serious eye damage/irritation	: Causes eye irritation. pH: 2.6
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified

SECTION 12: Ecological information

12.1. Toxicity

Benzyl alcohol (100-51-6)	
LC50 fish 1	460 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 1	23 mg/l (Exposure time: 48 h - Species: water flea)
LC50 fish 2	10 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
Hydroxyacetic acid (79-14-1)	
LC50 fish 1	> 5000 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Benzyl alcohol (100-51-6)	
Log Pow	1.1
Hydroxyacetic acid (79-14-1)	
Log Pow	-1.11 (at 19 °C)

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not a dangerous good as defined in transport regulations

SECTION 15: Regulatory information

15.1. US Federal regulations

Benzyl alcohol (100-51-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

CSP Light Duty Paint Remover

Safety Data Sheet

Water (7732-18-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Cellulose, 2-hydroxyethyl ether (9004-62-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Hydroxyacetic acid (79-14-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. US State regulations

Benzyl alcohol (100-51-6)

U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Full text of H-phrases::

Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
Flam. Liq. 4	Flammable liquids Category 4
Skin Irrit. 2	Skin corrosion/irritation Category 2
H227	Combustible liquid
H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H320	Causes eye irritation
H332	Harmful if inhaled

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product



CSP Heavy Duty Paint Remover

Industrial & Architectural Paint Stripper

This water based paint remover is biodegradable, non-toxic, user friendly and environmentally safe. It is extremely effective in removing the toughest industrial coatings like epoxies and urethanes from metal and concrete. This remover will effectively lift urethanes, latex, alkyd paints, lead based paints and varnish as well as most two-component epoxy coatings and fusion bonded epoxies from all types of substrates, including steel, aluminum, metal alloys, concrete, and masonry.

Features and Benefits

- **Water Based**
- **Fully Biodegradable**
- **Non Flammable**
- **Contains no TAPs or HAPs
(Toxic/Hazardous Air Pollutants)**
- **Non-carcinogenic, non-toxic**
- **Easy clean up with running water**
- **Low VOCs**
- **Non-ozone-depleting**
- **Low and inoffensive odor**
- **Will not burn skin**
- **Cost Effective:**
 - Requires much less chemical to achieve desired results
 - Reduces man-hours
 - Reduces cost of waste disposal
 - Reduces down time since other work at site can continue while stripper does its job
 - Lowers insurance costs for worker safety and storage hazards

Application Procedures

Test Area

Always prepare a test area prior to full application. This will indicate the time required for project completion and suitability of product for the paint and the substrate.

Equipment and Tools

This product is engineered for airless spray application. Use only airless equipment with chemical resistant packing. Equip the sprayer with a tip size of 0.019 inches or larger. (Example: a 519 or 425 tip). Other equipment: brushes, rollers, scraper, masking tape, plastic (polyethylene) sheet, pressure washer, electric drill with mixer, empty pails for clean-up, water. Roller application should be used **ONLY** for horizontal surfaces.

Preparation

MASKING: Cover / protect areas where stripping is not desired, including adjoining surfaces where over spray may travel. Plastic (polyethylene) sheets make a very effective barrier. If using masking tape, apply two layers of tape and remove the top layer immediately after application as the remover may soak through the tape, damaging paint under it. Plants should be covered or washed thoroughly before and during application.

MIXING: If on visual examination, water appears to have separated out of the product, thoroughly mix the stripper with a drill until it becomes homogeneous once again. **DO NOT SHAKE. DO NOT DILUTE.**

EQUIPMENT: Ensure application equipment is free of any previously applied products or chemicals or solvents (especially mineral spirits).

Application

Apply a thick, even layer of stripper onto the coating being removed. An airless sprayer is the most effective means of application. Always start the sprayer pump at the lowest pressure setting and slowly build up the pressure until an adequate fan pattern has been generated. The minimum wet film thickness should be 15 mils (300 microns). The stripper must be applied 30%-50% thicker than the coating to be removed, i.e., 10 mils of coating requires 13-15 mils of stripper to be removed effectively. High pressure is neither required nor desired. High pressure and narrow tip sizes will break the stripper's emulsion and will reduce its effectiveness. When trying to build up films thicker than 30 mils (600 microns), it is advisable to build the stripper film in two separate applications. First

apply a light coat of approximately 10 mils (250 microns), allow it to dwell for about 30 minutes and then build the rest of the stripper film thickness in the second application. Once applied, leave the stripper alone, as agitation slows down penetration. Brushing and rolling should be avoided because these methods produce a lower film build and inconsistent thickness of stripper.

Dwell Time

The time required for penetration varies according to the type of paint, and the temperature. Most paint systems require 1 to 6 hours. Leave the stripper overnight for best results.

Re-Application

When there are multiple layers of paint, it is quite likely that there is poor intercoat adhesion between some layers. Premature lifting may occur at this interface. If this happens, remove the lifted layers and reapply the stripper. Do not allow the stripper to dry out. The stripper is designed to remain wet and effective over extended periods of time (up to 48 hours), but excessive sunshine, windy conditions or insufficient stripper thickness can cause early drying. If the stripper starts to dry, reapply a light coating and allow extra time for completion

Removal and Cleanup

Removal of lifted paint can be completed by scraper, squeegee, wet/dry vacuum suction system or by pressure wash. The stripped surface must be rinsed with water or denatured alcohol to remove all chemical residues before repainting. When rinsing, always work from the bottom to the top. Any water that runs down the substrate will deactivate the stripper and allow the paint to re-adhere, therefore never work from the top to the bottom. Collect lifted paint and dispose of in accordance with local government regulations. Do not collect and/or store removed paint and stripper waste residue in metal containers. Clean up spray equipment by running water or denatured alcohol through the equipment soon after the spraying has been completed.

Safety Requirements

Proper safety procedures should be followed at all times while handling this product. Refer to the Safety Data Sheet for important health/safety information before use.

Limitations

Surface temperatures should be 65° to 95°F (20° to 32°C). The product performs effectively at lower temperatures (even at 32°F, 0°C), but the dwell time increases.

Packaging and Coverage

Packaging: 5-gallon pails

The product is engineered for thick film build up on vertical and overhead surfaces. The desirable wet film thickness of stripper is approximately one and a half times the dry film thickness of the paint. Minimum wet film thickness should be 15 mils (300 microns). The stripper must be applied 30%-50% thicker than the coating to be removed, i.e., 10 mils of coating requires 13-15 mils of stripper to be removed effectively. Typically, coverage is approximately 40 to 90 sq. ft./ US gallon (1 to 2.2 sq. m/L)

Technical Data

Appearance	White foamed emulsion
Specific Gravity	1
Boiling Point	99.3°C
Freezing Point	N/A
pH (direct reading)	2.6

DO NOT ALLOW STRIPPER TO FREEZE!

Notice: The information contained herein is based on our own research and the research of others, and it is provided solely as a service to help users. It is believed to be accurate to the best of our knowledge. However, no guarantee of its accuracy can be made, and it is not intended to serve as the basis for determining this product's suitability in any particular situation. For this reason, purchasers are responsible to make their own tests and assume all risks associated with using this product.

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CSP Heavy Duty Paint Remover

Safety Data Sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : CSP Heavy Duty Paint Remover

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Paint Stripper

1.3. Details of the supplier of the safety data sheet

Cathedral Stone Products
7266 Park Circle Drive
Hanover, MD 21076
T 410-782-9150

1.4. Emergency telephone number

Emergency number : 800-331-1696

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Acute Tox. 4 (Oral) H302
Acute Tox. 4 (Inhalation) H332
Skin Irrit. 2 H315
Eye Irrit. 2B H320

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H302+H332 - Harmful if swallowed or if inhaled
H315 - Causes skin irritation
H320 - Causes eye irritation

Precautionary statements (GHS-US) :

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P264 - Wash thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P312 - If swallowed: Call a poison center/doctor if you feel unwell
P302 + P352 - If on skin: Wash with plenty of water
P304 + P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor if you feel unwell
P330 - Rinse mouth
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

CSP Heavy Duty Paint Remover

Safety Data Sheet

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Benzyl alcohol	(CAS No) 100-51-6	40 - 45	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312
Water	(CAS No) 7732-18-5	40 - 45	Not classified
Hydroxyacetic acid	(CAS No) 79-14-1	> 10	Acute Tox. 4 (Oral), H302
Cellulose, 2-hydroxyethyl ether	(CAS No) 9004-62-0	0.5 - 2	Not classified

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Obtain medical attention if breathing difficulty persists.
- First-aid measures after skin contact : Rinse with plenty of water. Get medical attention for burns.
- First-aid measures after eye contact : Remove contact lenses immediately. Flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
- First-aid measures after ingestion : Do not induce vomiting. Give water to victim to drink. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : Harmful if inhaled. May cause respiratory irritation.
- Symptoms/injuries after skin contact : Causes skin irritation. Skin contact produces stinging and a white wound that clears in a short period of time. Prolonged contact may cause more serious burns.
- Symptoms/injuries after eye contact : Causes eye irritation. Eye contact produces stinging and a white wound that clears in a short period of time. Prolonged contact may cause more serious burns.
- Symptoms/injuries after ingestion : Harmful if swallowed. May cause gastrointestinal complications.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Use carbon dioxide, foam, dry chemical or water.
- Unsuitable extinguishing media : None.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Not flammable.
- Explosion hazard : Vapors can travel to a source of ignition and flash back. Closed containers may explode when overheated. Toxic gases may form when product comes in contact with extreme heat.

5.3. Advice for firefighters

- Protection during firefighting : Firefighters should wear full protective gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Stop the flow of material, if this is without risk.

CSP Heavy Duty Paint Remover

Safety Data Sheet

Methods for cleaning up : Confine spill and soak up with absorbent. Place in an approved container and dispose in accordance with local, state and federal regulations.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid contact with eyes and skin. Wash thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Protect container against physical damage and store in a cool, dry ventilated area. Do not store above 120F (48C).

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Benzyl alcohol (100-51-6)	
ACGIH	Not applicable
OSHA	Not applicable
Water (7732-18-5)	
ACGIH	Not applicable
OSHA	Not applicable
Cellulose, 2-hydroxyethyl ether (9004-62-0)	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Hand protection : Wear impervious gloves to minimize skin contact.
Eye protection : Face shield.
Skin and body protection : Wear suitable working clothes.
Respiratory protection : If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Viscous.
Color : White
Odor : Mild
Odor threshold : 10 ppm
pH : 2.6
Melting point : < 0 °C
Freezing point : No data available
Boiling point : 99.3 °C
Flash point : No data available
Relative evaporation rate (butyl acetate=1) : No data available
Flammability (solid, gas) : No data available
Explosion limits : No data available
Explosive properties : No data available
Oxidizing properties : No data available
Vapor pressure : 15.5 mm Hg @ 20 C
Specific gravity : 1

CSP Heavy Duty Paint Remover

Safety Data Sheet

Relative vapor density at 20 °C	: No data available
Solubility	: Water: 57.7 %
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

Will not occur.

10.4. Conditions to avoid

Keep away from heat, sparks and flame. Decomposes when heated above 70-80C

10.5. Incompatible materials

Strong mineral acids, oxidizers, or strong alkalis.

10.6. Hazardous decomposition products

Oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed. Inhalation: Harmful if inhaled.

MasonRE S-301	
ATE US (oral)	500.000 mg/kg body weight
ATE US (gases)	4500.000 ppmV/4h
ATE US (vapors)	11.000 mg/l/4h
ATE US (dust, mist)	1.500 mg/l/4h
Benzyl alcohol (100-51-6)	
LD50 oral rat	1230 mg/kg
LD50 dermal rabbit	2 g/kg
LC50 inhalation rat (mg/l)	8.8 mg/l/4h
ATE US (oral)	1230.000 mg/kg
ATE US (dermal)	2000.000 mg/kg
Water (7732-18-5)	
LD50 oral rat	> 90 ml/kg

Skin corrosion/irritation : Causes skin irritation.
pH: 2.6

Serious eye damage/irritation : Causes eye irritation.
pH: 2.6

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

CSP Heavy Duty Paint Remover

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Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Benzyl alcohol (100-51-6)	
LC50 fish 1	460 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 Daphnia 1	23 mg/l (Exposure time: 48 h - Species: water flea)
LC50 fish 2	10 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Benzyl alcohol (100-51-6)	
Log Pow	1.1

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not a dangerous good as defined in transport regulations

SECTION 15: Regulatory information

15.1. US Federal regulations

Benzyl alcohol (100-51-6)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Water (7732-18-5)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Cellulose, 2-hydroxyethyl ether (9004-62-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. US State regulations

Benzyl alcohol (100-51-6)	
U.S. - Massachusetts - Right To Know List	
U.S. - Minnesota - Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	

CSP Heavy Duty Paint Remover

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SECTION 16: Other information

Full text of H-phrases::

Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Eye Irrit. 2B	Serious eye damage/eye irritation Category 2B
Flam. Liq. 4	Flammable liquids Category 4
Skin Irrit. 2	Skin corrosion/irritation Category 2
H227	Combustible liquid
H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H320	Causes eye irritation
H332	Harmful if inhaled

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product



Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3M™ Safest Stripper™ Paint and Varnish Remover

Product Identification Numbers

70-0707-9597-9, 70-0711-8727-5

1.2. Recommended use and restrictions on use

Recommended use

Paint and Varnish Remover

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Construction and Home Improvement Markets
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

The label elements below were prepared in accordance with OSHA Hazard Communication Standard, 29 CFR 1910.1200. This information may be different from the actual product label information for labels regulated by other agencies.

2.1. Hazard classification

Not classified as hazardous according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

2.2. Label elements

Signal word

Not applicable.

Symbols

Not applicable.

Pictograms

Not applicable.

Precautionary Statements**Disposal:**

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

2.3. Hazards not otherwise classified

None.

24% of the mixture consists of ingredients of unknown acute oral toxicity.

24% of the mixture consists of ingredients of unknown acute dermal toxicity.

28% of the mixture consists of ingredients of unknown acute inhalation toxicity.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Water	7732-18-5	65 - 75 Trade Secret *
Dimethyl Adipate	627-93-0	20 - 30 Trade Secret *
Dimethyl Glutarate	1119-40-0	1 - 5 Trade Secret *
Smectite	12199-37-0	1 - 5 Trade Secret *

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures**4.1. Description of first aid measures****Inhalation:**

Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:

Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:

Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Not applicable.

SECTION 5: Fire-fighting measures**5.1. Suitable extinguishing media**

Material will not burn. Use a fire fighting agent suitable for the surrounding fire. Non-combustible. Use a fire fighting agent suitable for surrounding fire.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products**Substance**

Methane
Carbon monoxide
Carbon dioxide

Condition

During Combustion
During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up

Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue with detergent and water. Seal the container. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Keep out of reach of children. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.)

7.2. Conditions for safe storage including any incompatibilities

Store away from acids. Store away from strong bases. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Dimethyl Glutarate	1119-40-0	CMRG	TWA(as Dimethyl Esters):1.5 ppm(10 mg/m3)	
Dimethyl Adipate	627-93-0	CMRG	TWA(as Dimethyl Esters):1.5 ppm(10 mg/m3)	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration
 TWA: Time-Weighted-Average
 STEL: Short Term Exposure Limit
 CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment. Provide local exhaust ventilation at transfer points.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

None required.

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Nitrile Rubber

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Odor, Color, Grade:	Off white color slight ester odor.
Odor threshold	<i>No Data Available</i>
pH	Approximately 7
Melting point	<i>No Data Available</i>
Boiling Point	>=100 °C
Flash Point	No flash point
Evaporation rate	Approximately 1 [<i>Test Method: Estimated</i>] [<i>Ref Std: WATER=1</i>]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	<i>No Data Available</i>
Flammable Limits(UEL)	<i>No Data Available</i>
Vapor Pressure	Approximately 8 mmHg [<i>@ 77 °F</i>]
Vapor Density	<i>No Data Available</i>
Density	<i>No Data Available</i>
Specific Gravity	1.00 - 1.03 [<i>Ref Std: WATER=1</i>]
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>

Decomposition temperature	<i>No Data Available</i>
Viscosity	60,000 - 110,000 centipoise [@ 73.4 °F]
Average particle size	<i>No Data Available</i>
Bulk density	<i>No Data Available</i>
Hazardous Air Pollutants	<i>No Data Available</i>
Molecular weight	<i>No Data Available</i>
Volatile Organic Compounds	Approximately 216 g/l [<i>Test Method:</i> South Cost Air Qual Mgmt Dist]
Percent volatile	94 - 97 % weight
Softening point	<i>No Data Available</i>
VOC Less H2O & Exempt Solvents	<i>No Data Available</i>

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Temperatures above the boiling point

10.5. Incompatible materials

Strong acids

Strong bases

Strong oxidizing agents

No Data Available

10.6. Hazardous decomposition products

Substance

None known.

Condition

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin Contact:

Contact with the skin during product use is not expected to result in significant irritation.

Eye Contact:

Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE > 50 mg/l
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg
Dimethyl Glutarate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Dimethyl Glutarate	Ingestion	Rat	LD50 > 5,000 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

For the component/components, either no data are currently available or the data are not sufficient for classification.

Serious Eye Damage/Irritation

For the component/components, either no data are currently available or the data are not sufficient for classification.

Skin Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

For the component/components, either no data are currently available or the data are not sufficient for classification.

Carcinogenicity

For the component/components, either no data are currently available or the data are not sufficient for classification.

Reproductive Toxicity**Reproductive and/or Developmental Effects**

For the component/components, either no data are currently available or the data are not sufficient for classification.

Target Organ(s)**Specific Target Organ Toxicity - single exposure**

For the component/components, either no data are currently available or the data are not sufficient for classification.

Specific Target Organ Toxicity - repeated exposure

For the component/components, either no data are currently available or the data are not sufficient for classification.

Aspiration Hazard

For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - No Delayed Hazard - No

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 1 **Flammability:** 0 **Instability:** 0 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

HMIS Hazard Classification

Health: 1 **Flammability:** 0 **Physical Hazard:** 0 **Personal Protection:** X - See PPE section.

Hazardous Material Identification System (HMIS® III) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® III ratings are to be used with a fully implemented HMIS® III program. HMIS® is a registered mark of the American Coatings Association (ACA).

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SAFETY DATA SHEET

CitriStrip Stripping Gel

Page: 1

Printed: 12/15/2015

Revision: 12/14/2015

Supersedes Revision: 07/21/2015

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: CitriStrip Stripping Gel

Company Name: W. M. Barr
2105 Channel Avenue
Memphis, TN 38113

Phone Number:
(901)775-0100

Web site address: www.wmbarr.com

Emergency Contact: 3E 24 Hour Emergency Contact (800)451-8346

Information: W.M. Barr Customer Service (800)398-3892

Intended Use: Paint/Varnish Remover

Product Code: HCG73803T, QCG73801T, QCG73801TP, QCG73801TB

Additional Information This product is regulated by the United States Consumer Product Safety Commission and is subject to certain labeling requirements under the Federal Hazardous Substances Act. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS). The product label also includes other important information, including directions for use, and should always be read in its entirety prior to using the product.

2. HAZARDS IDENTIFICATION

Skin Corrosion/Irritation, Category 2

Serious Eye Damage/Eye Irritation, Category 2

Toxic To Reproduction, Category 1B

Specific Target Organ Toxicity (single exposure), Category 3

Specific Target Organ Toxicity (repeated exposure), Category 2



GHS Signal Word:

Danger

GHS Hazard Phrases:

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H335: May cause respiratory irritation.

H360: May damage fertility or the unborn child.

H373: May cause damage to organs through prolonged or repeated exposure.

GHS Precaution Phrases:

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P260: Do not breathe gas/mist/vapors/spray.

P264: Wash hands thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area.

P280: Wear {protective gloves/protective clothing/eye protection/face protection}.

P281: Use personal protective equipment as required.

GHS Response Phrases:

P302+352: IF ON SKIN: Wash with plenty of soap and water.

P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+313: IF exposed or concerned: Get medical attention/advice.

P312: Call a POISON CENTER or doctor/physician if you feel unwell.

P314: Get medical attention/advice if you feel unwell.

P321: Specific treatment see label.

P332+313: If skin irritation occurs, get medical advice/attention.

P337+313: If eye irritation persists, get medical advice/attention.

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GHS Storage and Disposal Phrases:

P362: Take off contaminated clothing and wash before re-use.

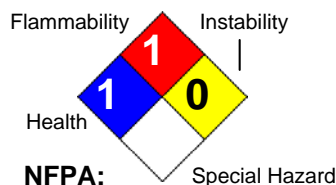
P403+233: Store container tightly closed in well-ventilated place.

P405: Store locked up.

P501: Dispose of contents/container according to local, state and federal regulations.

Hazard Rating System:

HEALTH	*	1
FLAMMABILITY		1
PHYSICAL		0
PPE		X



HMIS:

OSHA Regulatory Status:

This material is classified as hazardous under OSHA regulations.

Potential Health Effects (Acute and Chronic):

ACUTE EYE CONTACT:

May cause eye irritation with discomfort, tearing, or blurring of vision and corneal clouding. May cause burns of the eye.

ACUTE SKIN CONTACT:

May cause mild skin irritation with redness, discomfort, burning, or rash. Prolonged or repeated skin contact may cause dermatitis and drying of the skin.

ACUTE INHALATION:

May cause irritation of the upper respiratory passages, with coughing, headache, and discomfort.

ACUTE INGESTION:

May cause gastric disturbances. May cause nausea and vomiting. May damage mucous membranes.

CHRONIC EFFECTS: This product contains a material (N-Methylpyrrolidone) that may adversely effect the developing fetus based on animal data.

TARGET ORGANS: Eyes, skin, respiratory tract, digestive system.

ROUTES OF ENTRY: Eye and skin contact, ingestion, and inhalation.

Medical Conditions Generally Aggravated By Exposure: Pre-existing eye disease and pre-existing skin conditions.

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS #	Hazardous Components (Chemical Name)	Concentration
872-50-4	N-Methyl-2-pyrrolidone {2-Pyrrolidinone, 1-Methyl-; 1-Methylazacyclopentan-2-one}	30.0 -60.0 %
1119-40-0	Dimethyl glutarate	10.0 -30.0 %
627-93-0	Dimethyl adipate	10.0 -20.0 %

Additional Chemical Information

Specific percentage of composition is being withheld as a trade secret.

4. FIRST AID MEASURES

Emergency and First Aid Procedures:

INHALATION:

If user experiences breathing difficulty, move to air free of vapors. Administer oxygen or artificial respiration until medical assistance can be rendered.

SKIN CONTACT:

Wash with soap and large quantities of water and seek medical attention if irritation from contact persists.

EYE CONTACT:

Immediately flush with water for at least 15 minutes. Get medical attention immediately.

INGESTION:

Do not induce vomiting, unless directed to by medical personnel. Call your poison control center, hospital, emergency room, or physician immediately for instructions. Do not give anything by mouth to an unconscious person.

Signs and Symptoms Of Exposure:

See Potential Health Effects.

Note to Physician:

Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

Flash Pt: > 200.00 F Method Used: Setaflash Closed Cup (Rapid Setaflash)

Explosive Limits: LEL: No data. UEL: No data.

Autoignition Pt: No data.

Suitable Extinguishing Media: Use carbon dioxide, dry powder, water spray, or foam.

Unsuitable Extinguishing Media: None known.

Fire Fighting Instructions: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved or equivalent) and full protective gear.

Containers can build up pressure if exposed to heat (fire). Storage containers exposed to fire should be kept cool with water spray to prevent pressure build-up. Stay away from heads of containers that have been exposed to intense heat or flame.

Flammable Properties and Hazards:

Not Applicable.

6. ACCIDENTAL RELEASE MEASURES

Steps To Be Taken In Case Material Is Released Or Spilled:

Isolate the immediate area. Prevent unauthorized entry. Eliminate all sources of ignition in area and downwind of the spill area. Stay upwind, out of low areas, and ventilate closed spaces before entering. All equipment used when handling this product must be grounded or non-sparking. Do not touch or walk through spilled material. Stop leak if you can do so without risk. Prevent entry into waterways, sewers, or confined areas. Absorb or cover with dry earth, sand, or other non-combustible material and transfer to compatible containers. For large spills, dike ahead of the spill.

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CitriStrip Stripping Gel

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7. HANDLING AND STORAGE

Precautions To Be Taken in Handling:	Avoid contact with skin and eyes. Keep away from heat, sparks and flame. Read carefully all cautions and directions on product label before use. Since empty container retains residue, follow all label warnings even after container is empty. Dispose of empty container according to all regulations. Do not reuse this container.
Precautions To Be Taken in Storing:	Store in a cool place in original container and protect from sunlight. Do not store near flames or at elevated temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

CAS #	Partial Chemical Name	OSHA TWA	ACGIH TWA	Other Limits
872-50-4	N-Methyl-2-pyrrolidone {2-Pyrrolidinone, 1-Methyl-; 1-Methylazacyclopentan-2-one}	No data.	No data.	No data.
1119-40-0	Dimethyl glutarate	No data.	No data.	No data.
627-93-0	Dimethyl adipate	No data.	No data.	No data.
Respiratory Equipment (Specify Type):	When used by the consumer following directions for use and with adequate ventilation, respiratory protection should not be needed. A NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.			
Eye Protection:	Safety glasses should be worn during normal handling of this material. Where contact with the eyes or face is likely, a faceshield or chemical splash goggles should be worn to prevent eye contact.			
Protective Gloves:	Wear gloves resistant to the chemical ingredients, such as nitrile rubber, neoprene, etc. Refer to the glove manufacturer's recommendations for permeability.			
Other Protective Clothing:	Various application methods can dictate use of additional protective safety equipment, such as impermeable aprons, etc., to minimize exposure.			
Engineering Controls (Ventilation etc.):	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use with adequate ventilation to prevent buildup of vapors. Do not use in areas where vapors can accumulate and concentrate, such as basements, bathrooms or small enclosed areas. If using indoors open all windows and doors and maintain a cross ventilation of moving fresh air across the work area. If strong odor is noticed or you experience slight dizziness, headache, nausea or eye-watering -- STOP -- ventilation is inadequate. Leave area immediately and move to fresh air.			
Work/Hygienic/Maintenance Practices:	Wash hands thoroughly after use and before eating, drinking, or smoking. Do not eat, drink, or smoke in the work area. Discard any clothing or other protective equipment that cannot be decontaminated.			

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CitriStrip Stripping Gel

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A source of clean water should be available in the work area for flushing of eyes and skin.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical States:	[] Gas [X] Liquid [] Solid
Appearance and Odor:	Orange, translucent, viscous
Melting Point:	No data.
Boiling Point:	> 200.00 C
Autoignition Pt:	No data.
Flash Pt:	> 200.00 F Method Used: Setaflash Closed Cup (Rapid Setaflash)
Explosive Limits:	LEL: No data. UEL: No data.
Specific Gravity (Water = 1):	1.15
Density:	9.6 LB/GL
Vapor Pressure (vs. Air or mm Hg):	0.23 MM HG at 20.0 C
Vapor Density (vs. Air = 1):	> 1
Evaporation Rate:	< 1
Solubility in Water:	Slight
Viscosity:	<=12000 CPS
Percent Volatile:	64.5 % by weight.
VOC / Volume:	40.0000 % WT

10. STABILITY AND REACTIVITY

Stability:	Unstable [] Stable [X]
Conditions To Avoid - Instability:	No data available.
Incompatibility - Materials To Avoid:	Strong oxidizers, acids, alkalies
Hazardous Decomposition or Byproducts:	Carbon monoxide, carbon dioxide, nitrogen oxides, oxides of citrus terpenes
Possibility of Hazardous Reactions:	Will occur [] Will not occur [X]
Conditions To Avoid - Hazardous Reactions:	No data available.

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11. TOXICOLOGICAL INFORMATION

Toxicological Information: Product not tested as a whole. Refer to section 2 for acute and chronic effects.

CAS# 872-50-4:
Reproductive Effects:, TDLo, Inhalation, Rat, 116.0 PPM, 6 H, multigenerations.
Result:
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).
- Drug and Chemical Toxicology., Marcel Dekker, 270 Madison Ave., New York, NY 10016, Vol/p/yr: 18,271, 1995

Standard Draize Test, Eyes, Species: Rabbit, 100.0 MG, Moderate.
Result:
Blood:Other hemolysis with or without anemia.
Blood:Other changes.
Biochemical: Metabolism (Intermediary): Other proteins.
- Food and Chemical Toxicology., Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523, Vol/p/yr: 26,475, 1988

CAS #	Hazardous Components (Chemical Name)	NTP	IARC	ACGIH	OSHA
872-50-4	N-Methyl-2-pyrrolidone {2-Pyrrolidinone, 1-Methyl-; 1-Methylazacyclopentan-2-one}	n.a.	n.a.	n.a.	n.a.
1119-40-0	Dimethyl glutarate	n.a.	n.a.	n.a.	n.a.
627-93-0	Dimethyl adipate	n.a.	n.a.	n.a.	n.a.

12. ECOLOGICAL INFORMATION

General Ecological Information: Product not tested as a whole.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose in accordance with applicable local, state, and federal regulations.

14. TRANSPORT INFORMATION

LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Not Regulated by DOT.

DOT Hazard Class:

UN/NA Number:

Additional Transport Information:

15. REGULATORY INFORMATION

EPA SARA (Superfund Amendments and Reauthorization Act of 1986) Lists

CAS #	Hazardous Components (Chemical Name)	S. 302 (EHS)	S. 304 RQ	S. 313 (TRI)
872-50-4	N-Methyl-2-pyrrolidone {2-Pyrrolidinone, 1-Methyl-; 1-Methylazacyclopentan-2-one}	No	No	Yes
1119-40-0	Dimethyl glutarate	No	No	No
627-93-0	Dimethyl adipate	No	No	No

This material meets the EPA ☒ Yes ☐ No Acute (immediate) Health Hazard

'Hazard Categories' defined ☒ Yes ☐ No Chronic (delayed) Health Hazard

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for SARA Title III Sections ☐ Yes ☒ No Fire Hazard
311/312 as indicated: ☐ Yes ☒ No Sudden Release of Pressure Hazard
 ☐ Yes ☒ No Reactive Hazard

CAS #	Hazardous Components (Chemical Name)	Other US EPA or State Lists
872-50-4	N-Methyl-2-pyrrolidone {2-Pyrrolidinone, 1-Methyl-; 1-Methylazacyclopentan-2-one}	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory, 4 Test, 12(b); CA PROP.65: Yes
1119-40-0	Dimethyl glutarate	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory, 12(b); CA PROP.65: No
627-93-0	Dimethyl adipate	CAA HAP,ODC: No; CWA NPDES: No; TSCA: Yes - Inventory, 12(b); CA PROP.65: No

16. OTHER INFORMATION

Revision Date: 12/14/2015
Preparer Name: W.M. Barr EHS Dept (901)775-0100

Additional Information About This Product: No data available.

Company Policy or Disclaimer: The information contained herein is presented in good faith and believed to be accurate as of the effective date shown above. This information is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determination of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.



Peel Away® 7 – Solvent Based Paint Remover

Tech Data Sheet

Product Description & Use: Peel Away® 7 Solvent-Based Paint Remover safely removes multiple coats of paints, urethanes, varnishes, lacquers, enamels and many other finishes from decorative hardwoods without discoloration or raising the grain. This user-friendly, pH neutral formulation does not contain methylene chloride or caustic chemicals and is the optimal product for wood refinishing. Peel Away® 7 Solvent-Based Paint Remover safely and effectively removes most high-performance coatings and finishes from both interior and exterior substrates. Peel Away® 7 Solvent-Based Paint Remover is ideal for wood, brick, stone, plaster, metal and more. Peel Away® 7 is excellent for historic restoration, high-performance coatings and lead abatement projects.

Features & Benefits:

- Environmentally safe solvent-based paint remover
- Removes paints, urethanes, varnishes, lacquers, enamels and many other finishes
- Does not contain methylene chloride or caustic chemicals
- Ideal for wood substrates, will not discolor or raise the grain
- User-friendly and pH neutral; does not require neutralization
- Suitable for interior and exterior applications
- Excellent for historic restoration, high-performance coatings and lead abatement projects
- Used in conjunction with **Dumond® Laminated Paper** (included with product)
- Optimal product for wood refinishing

Limitations: Not recommended for use on drywall, EIFS, plywood, plastics, vinyl, veneer, rubber, sheetrock, composite decking. Always do a test patch prior to full paint removal.

Test Patch: Always perform a small inconspicuous test area on each type of substrate and paint coating prior to full application. Testing before beginning any project is the best way to ensure product effectiveness. Test patches can determine the proper dwell time and thickness to apply the product for you specific application. Failure to do a test patch can result in need for more than one application, increasing labor and material costs.

Recommended Substrates: Before applying to an entire substrate always do a test patch. Recommended for use on wood, brick, concrete, cement, most fiberglass, tile, terra cotta,

metal, copper, aluminum, glass, limestone, brownstone, sandstone, granite, marble, slate, tin, stone, asphalt, and galvanized steel.

Regulatory Information: Do not use if pregnant or attempting to get pregnant, meets all Federal, State and Local Government guidelines.

Preparation: Prepare surface by scraping or pressure washing to remove all loose or peeling coatings. Allow substrate to dry before applying **Peel Away® 7 Solvent Based Paint Remover**. Protect and cover all areas, vegetation and surfaces not designated to be stripped including adjoining surfaces where overspray may travel. Solvent resistant polyethylene sheets can be used as an effective barrier. Wet down all vegetation and cover with **Dumond® Catch-N-Cover™** or 6 mil solvent resistant polyethylene sheets.

Surface and Air Temperatures: To avoid product from freezing and reducing effectiveness do not use below 35° degrees Fahrenheit. For best results, use product in temperatures above 50° degrees Fahrenheit and below 90° degrees Fahrenheit. Product effectiveness is increased in warmer temperatures.

Application & Spread Rate: **Dumond® Chemicals** always recommends working in smaller manageable areas when stripping unless you are working with many people, only strip what you can rinse before the remover dries, usually a 3' X 3' area. Using a trowel or putty knife apply paste at 1/16" - 1/8" inch thick according to test patch results. For 48 hour dwell time 1/8" inch is required. When applying onto irregular surfaces use a nylon brush to force paste into intricate areas. Cover all paste with **Dumond® Laminated Paper** while being careful to smooth out all air pockets. Product can dwell 12-48 hours if necessary. **Peel Away® 7 Solvent Based Paint Remover** provides an average spread rate of approximately 40-50 Sq. Ft. per gallon; results may vary based on substrate texture and porosity.

Spray Application: **Dumond®** recommends that **Peel Away® 7 Solvent Based Paint Remover** be sprayed with an airless paint sprayer. The sprayer pump size should be at least 1 gallon per minute and all gun and manifold filters should be removed prior to spraying. Hose size should be a new 1/4" ID, however a 3/8" ID hose will reduce strain on the sprayer. It is always recommended to use a new hose on the job, as old paint in the lines will dislodge and cause clogs during application. Keep a clean bucket of water available, as an occasional flush of the pump may be necessary on hot days to alleviate clogs and the pumps inability to build up pressure. Do not leave **Peel Away® 7 Solvent Based Paint Remover** in the sprayer or spray lines overnight. Flush the sprayer and hose thoroughly each day and upon completion with warm water and dish detergent.

Removal & Clean Up: Remove by inserting trowel, spatula, or other paint scraping tool underneath paste and lift **Dumond® Laminated Paper** while scraping. After all paste has been removed use a nylon brush or Scotch™ Brite pad and clean water to scrub residue off the substrate, paying particular attention to crevices, grooves, and cracks. Rinse thoroughly with water to remove

all remaining residue. For optimal results, low pressure washing is recommended for final rinse when working outside. Remember, only strip what you can rinse before the remover dries, usually a 3' X 3' area. Dispose of paper, paste remover and dissolved coatings according to federal, state and local regulations.

Waste Disposal: When lead-based paint coatings are being removed from a substrate, disposal of the resulting waste is regulated by the United States Environmental Protection Agency (EPA) and many state and local agencies. Federal standards for classification, handling and disposal of potentially hazardous wastes are detailed in EPA's Resource Conservation and Recovery Act (RCRA) of 1976. Additional, more stringent regulations may be imposed by state and local regulatory authorities.

Best Practices:

- Always test patch each type of surface and coatings for efficacy, dwell times, and thickness.
- Never apply **Peel Away® 7 Solvent Based Paint Remover** and leave it for 24- 48 hours without checking on it
- If product dries or hardens to the surface, remove the **Dumond® Laminated Paper** and apply a thin coat of **Peel Away® 7 Solvent Based Paint Remover** over hardened area, reapply **Dumond® Laminated Paper** and wait 30 minutes to 1 hour and remove
- Use butchers paper or freezer paper as a substitute for **Dumond® Laminated Paper**
- Do not use if you are pregnant or use around someone who is pregnant

Availability & Cost: **Dumond® Chemicals** products are available through a nationwide network of paint stores, hardware stores and safety supply distributors. For outlet nearest you please visit www.dumondchemicals.com once on the website type your zip code or postal code into the dealer locator to find addresses and phone numbers of your nearest dealer.

Health & Safety Requirements: Not for internal consumption. While **Peel Away® 7 Solvent Based Paint Remover** is formulated to be safe for the user, surface and environment, proper safety procedures should be followed at all times when handling this product. Read the full label and MSDS for precautionary instructions before use.

WARNING! If you scrape, sand or remove old paint, you may release lead dust. LEAD IS TOXIC. EXPOSURE TO LEAD DUST CAN CAUSE SERIOUS ILLNESS, SUCH AS BRAIN DAMAGE, ESPECIALLY IN CHILDREN. PREGNANT WOMEN SHOULD ALSO AVOID EXPOSURE. Wear a NIOSH-Approved respirator to control lead exposure. Clean up carefully with a HEPA vacuum and a wet mop. Before you start, find out how to protect yourself and your family by contacting the National Lead Information Hotline at 1-800-424- LEAD or log on to www.epa.gov/lead.

24-Hour Emergency Information:

1-800-535-5053 **North America** or 1-325-323-3500 **International**

Warranty: Dumond® Chemicals, Inc. warrants all of its products to be free from defects, and makes no other warranties with respect to its products, express or implied, including without limitation the implied warranties of MERCHANTABILITY OF FITNESS FOR PARTICULAR PURPOSE. Dumond® Chemicals, Inc. liability shall be limited in all Events to supplying sufficient products to re-treat the specific areas to which defective product have been applied. Dumond® Chemicals, Inc. shall have no other liability, including liability for incidental, consequential or resultant damages whether due to breach of warranty or negligence. This warranty may not be modified or extended by representatives of Dumond® Chemicals, Inc. or its distributors, and dealers.

Technical Services: Dumond's expert staff is available to answer technical questions and provide product-specific information. On-site assistance is available at no additional cost. Call 800-245-1191, email info@dumondglobal.com or visit www.dumondchemicals.com with product or technical questions.

Technical Data:

- **Form** - Paste
- **Wt./Gal** -
- **Flash Point** -
- **pH** - 6
- **VOC** – 15.64%
- **Freeze Point** - 32
- **Shelf Life** – 2 years



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West Chester, PA 19380 Fax: 609/655-7725 www.dumondchemicals.com



SAFETY DATA SHEET

Issue Date 18-Apr-2007

Revision Date 3-Mar-2018

Version 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Peel Away 7

Other Means of Identification

SDS # DCI-014

Recommended Use of the Chemical and Restrictions on Use

Recommended Use Paint remover.

Details of the Supplier of the Safety Data Sheet

Supplier Address

Dumond Chemicals, Inc.
1475 Phoenixville Rd. Suite 18
West Chester, Pa 19380

Emergency Telephone Number

Company Phone Number 1-609-655-7700
Emergency Telephone INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Inhalation (Vapors)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Reproductive toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3

Signal Word

Danger

Hazard Statements

Harmful if inhaled
 Causes skin irritation
 Causes severe eye irritation
 May damage fertility or the unborn child
 May cause respiratory irritation. May cause drowsiness or dizziness



Appearance Light brown paste

Physical State Paste

Odor Slight Sweet

Precautionary Statements - Prevention

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Wash face, hands and any exposed skin thoroughly after handling
 Wear eye/face protection

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Get medical attention if irritation occurs
 IF ON SKIN: Wash with plenty of soap and water
 If skin irritation occurs: Get medical advice/attention
 Take off contaminated clothing and wash before reuse
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Precautionary Statements - Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards Not Otherwise Classified (HNOC)

May be harmful if swallowed
 May be harmful in contact with skin

Other Hazards

Toxic to aquatic life with long lasting effects
 Toxic to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Benzyl alcohol	100-51-6	20-40
1-Methyl-2-pyrrolidone	872-50-4	10-20
alpha-(4-nonylphenyl)-omega-hydroxy-poly(oxy-1,2-ethanediyl) branched	127087-87-0	<2

Chemical Additions

Contains 10-20% dibasic ester, which is a mixture of dimethyl glutarate (CAS# 1119-40-0) and dimethyl adipate (CAS# 627-93-0)
 Water

4. FIRST AID MEASURES

First Aid Measures

General advice	If exposed or concerned: Get medical advice/attention.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention if irritation occurs.
Ingestion	If conscious give 1 glass of water to dilute. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
Skin Contact	Wash with soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/ attention.

Most Important Symptoms and Effects, both Acute and Delayed

Symptoms	Mists and vapors cause irritation of the eyes, mucous membranes, and upper respiratory tract. May cause irritation, redness and pain. Area of contact may become numb due to anesthetic effects. May cause gastrointestinal irritation, nausea, diarrhea, and vomiting.
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Indication of any Immediate Medical Attention and Special Treatment Needed

Note to Physicians	Treat symptomatically. Individuals with chronic respiratory or skin diseases may be at risk from exposure.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Water spray (fog). Alcohol resistant foam. Carbon dioxide (CO₂). Dry chemical.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

At elevated temperatures, containers may rupture. Cool containers exposed to flames with water until well after the fire is out. Vapors may form explosive mixtures with air.

Hazardous combustion products Carbon oxides. Nitrogen oxides (NO_x).

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions	Use personal protective equipment as required. Remove all sources of ignition.
Environmental Precautions	Do not allow into any sewer, on the ground or into any body of water.

Methods and Material for Containment and Cleaning Up

Methods for Containment	Prevent further leakage or spillage if safe to do so. Dike the spilled material, where this is possible. Collect using an inert absorbent material and place in appropriate containers for disposal.
Methods for Cleaning Up	Keep in suitable, closed containers for disposal. Wash spill area with plenty of water. Spills and releases may have to be reported to Federal and/or local authorities. See section 15.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Advice on Safe Handling	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protection recommended in Section 8. Avoid breathing vapors or mists. Use only in well-ventilated areas. Wash face, hands, and any exposed skin thoroughly after handling. Protect container from physical damage. Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. Follow all SDS/label precautions even after container is emptied because it may retain product residues.
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Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Store away from incompatible materials.
Incompatible Materials	Strong acids. Strong bases. Strong oxidizing agents. Strong reducing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Kaolin 1332-58-7	TWA: 2 mg/m ³ particulate matter containing no asbestos and <1% crystalline silica, respirable fraction	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 10 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust

Appropriate Engineering Controls

Engineering Controls	Apply technical measures to comply with the occupational exposure limits. If the recommended exposure limit is exceeded increased mechanical ventilation such as local exhaust may be required. Showers. Eyewash stations.
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Individual Protection Measures, such as Personal Protective Equipment

Eye/Face Protection	Wear approved safety goggles. Face Mask. Do not wear contact lenses.
Skin and Body Protection	Wear protective butyl rubber gloves. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.
Respiratory Protection	If occupational exposure limits are exceeded, use NIOSH approved respirator with organic vapor cartridges and dust/mist pre-filter. For higher concentrations (greater than 10 times the recommended exposure limit) an approved supplied air respirator (with escape bottle if required) or self-contained breathing apparatus may be required. Selection of respiratory protection depends on the contaminant type, form, and concentration. Select in accordance with OSHA 1910.134 and good industrial hygiene practice.
General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	Paste	Odor	Slight Sweet
Appearance	Light brown paste	Odor threshold	Not determined
Color	Light brown		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	6	
Melting point/freezing point	Not available	
Boiling point/boiling range	Not available	
Flash point	> 93.3 °C / > 200 °F	Cleveland Open Cup
Evaporation rate	<1	(butyl alcohol = 1)
Flammability (solid, gas)	Not determined	
Flammability limits in air		
Upper flammability limits	Not available	
Lower flammability limit	Not determined	
Vapor pressure	<0.3	(n-methyl-2-pyrrolidone)
Vapor density	3-4	(Air=1)
Specific gravity	12.0 lbs/gal	
Water solubility	partially soluble	
Solubility in other solvents	Not determined	
Partition coefficient	Not available	
Autoignition temperature	Not determined	
Decomposition temperature	Not determined	
Kinematic viscosity	Not determined	
Dynamic viscosity	Not determined	
Explosive properties	Not determined	
Oxidizing Properties	Not determined	

Other Information

VOC Content (%)	15.64%
VOC Content	1.88 lbs/gal

10. STABILITY AND REACTIVITY**Reactivity**

Not reactive under normal conditions

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to Avoid

Keep out of reach of children.

Incompatible Materials

Strong acids. Strong bases. Strong oxidizing agents. Strong reducing agents.

Hazardous Decomposition Products

Thermal decomposition may produce oxides of carbon and nitrogen.

11. TOXICOLOGICAL INFORMATION**Information on Likely Routes of Exposure**

Product Information

Inhalation	Harmful if inhaled.
Eye Contact	Causes severe eye irritation.
Skin Contact	Causes skin irritation. May be harmful in contact with skin.
Ingestion	May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Benzyl alcohol 100-51-6	= 1230 mg/kg (Rat)	= 2000 mg/kg (Rabbit)	= 8.8 mg/L (Rat) 4 h
1-Methyl-2-pyrrolidone 872-50-4	= 3598 mg/kg (Rat)	= 2500 mg/kg (Rat) > 5000 mg/kg (Rabbit)	= 3.1 mg/L (Rat) 4 h
Dimethyl Adipate 627-93-0	= 1920 mg/kg (Rat)	-	-
Dimethyl Glutarate 1119-40-0	= 8191 mg/kg (Rat)	-	> 5.6 mg/L (Rat) 4 h

Information on Physical, Chemical and Toxicological Effects

Symptoms	Mists and vapors cause irritation of the eyes, mucous membranes, and upper respiratory tract. May cause irritation, redness and pain. Area of contact may become numb due to anesthetic effects. May cause gastrointestinal irritation, nausea, diarrhea, and vomiting.
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Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure

Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Reproductive toxicity	May damage fertility or the unborn child.
STOT - single exposure	May cause respiratory irritation. May cause drowsiness or dizziness.

Numerical Measures of Toxicity- Product

Not determined

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	2017 mg/kg
ATEmix (dermal)	2311 mg/kg
ATEmix (inhalation-gas)	809 mg/l
ATEmix (inhalation-dust/mist)	0.1 mg/l
ATEmix (inhalation-vapor)	10.5 mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Toxic to aquatic life with long lasting effects

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
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Benzyl alcohol 100-51-6	35: 3 h Anabaena variabilis mg/L EC50	460: 96 h Pimephales promelas mg/L LC50 static 10: 96 h Lepomis macrochirus mg/L LC50 static	EC50 = 50 mg/L 5 min EC50 = 63.7 mg/L 15 min EC50 = 63.7 mg/L 5 min EC50 = 71.4 mg/L 30 min	23: 48 h water flea mg/L EC50
1-Methyl-2-pyrrolidone 872-50-4	500: 72 h Desmodesmus subspicatus mg/L EC50	832: 96 h Lepomis macrochirus mg/L LC50 static 4000: 96 h Leuciscus idus mg/L LC50 static 1072: 96 h Pimephales promelas mg/L LC50 static 1400: 96 h Poecilia reticulata mg/L LC50 static		4897: 48 h Daphnia magna mg/L EC50
Dimethyl Glutarate 1119-40-0		19.6 - 26.2: 96 h Pimephales promelas mg/L LC50 static		122.1 - 163.5: 48 h Daphnia magna mg/L EC50

Persistence and Degradability

Material is readily biodegradable.

Bioaccumulation

The product has low potential for bioaccumulation.

Mobility

Not determined.

Chemical Name	Partition coefficient
Benzyl alcohol 100-51-6	1.1
1-Methyl-2-pyrrolidone 872-50-4	-0.46

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS**Waste Treatment Methods****Disposal of Wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION**Note**

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances

DOT

Not regulated

IATA

Not regulated

IMDG

Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Listed
DSL Listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances **IECSC**

- China Inventory of Existing Chemical Substances **KECL** -

Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
1-Methyl-2-pyrrolidone - 872-50-4	872-50-4	10-20	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

US State Regulations

Chemical Name	California Proposition 65
1-Methyl-2-pyrrolidone - 872-50-4	Developmental

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Benzyl alcohol 100-51-6		X	X
Kaolin 1332-58-7	X	X	X
1-Methyl-2-pyrrolidone 872-50-4	X	X	X

U.S. EPA Label Information

16. OTHER INFORMATION**NFPA****Health Hazards****Flammability****Instability****Special Hazards**

2

1

0

Not determined

HMIS**Health Hazards****Flammability****Physical Hazards****Personal Protection**

Not determined

Not determined

Not determined

Not determined

Issue Date

18-Apr-2007

Revision Date

3-Mar-2018

Revision Note

New format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Peel Away[®]5: Floor Coatings Remover

1. **Product Description & Use:** Peel Away[®]5 is an environmentally safe paint and coatings remover that has been specifically formulated to remove high strength, chemically resistant floor coatings (epoxies, urethanes, etc.). Also yields excellent results when used in dipping tanks and can remove most chemically resistant coatings as well as alkyd/latex paints. This product does not contain methylene chloride, caustic, or any other highly flammable solvent. A gel-like liquid, Peel Away[®]5 can be applied by squeegee, brush or spray. After Peel Away[®]5 has dissolved or emulsified the coating, it can be removed by scraping or power washing.
2. **Features & Benefits**
 - Gel formulation; removes most high performance floor coatings
 - Removes latex/acrylic mastics & carpet glues
 - Excellent for furniture/industrial dipping tank processes
 - Formulated without methylene chloride, caustic or highly flammable solvents
3. **Limitations:** Product efficacy is reduced below temperature of 40°F. May not work on some epoxy coatings, and will not work on most cementitious coatings. Test patches should be made on unknown surfaces coatings.
4. **Test Patch:** Always prepare a test area on each type of surface and paint coating prior to full application. Testing before beginning the project is the best way to ensure product suitability. This will also teach the user how to handle the product, gauge how thickly to apply, and, determine how long it must remain in place (dwell time) before removing. Applying too thickly or unevenly, or, removing too quickly, may result in need for more than one application, increasing your labor and material costs. Note: Because Peel Away[®] 5 has a very low evaporation rate, it can require more stripping time than more aggressive chemical products. Depending on the coatings being removed, dwell time will vary.
5. **Preparation:** Cover and protect areas where stripping is not desired, including adjoining surfaces where overspray may travel; keep in place for removal process. Polyethylene and masking tape create an effective barrier. Nearby plants and other foliage should be covered during application and removal.
6. **Application & Spread Rate:** Apply Peel Away[®]5 by squeegee, brush or spraying, to a thickness of about 1/32" to 1/16" (refer to patch test results). Leave on for time determined during patch testing. Peel Away[®]5 provides an average spread rate of about 60 – 75 sq. ft. per gallon; results may vary.
7. **Removal:** Use a long-handled scraper or power wash to remove. Thoroughly wash or scrape entire surface to remove all remaining residue. In some cases, using a scrub brush to agitate the surface may be necessary.
8. **Clean Up:** Before beginning, especially when power washing, use polyethylene to protect adjacent surfaces from splash back and run down. Collect material removed and dispose of in compliance with local regulations. Allow surface to dry completely before re-coating.
9. **Availability & Cost:** Peel Away[®] products are available through a nationwide network of paint and hardware stores, and construction and safety supply distributors. For outlet nearest you, call 800-245-1191 or email info@dumondglobal.com. Cost will vary depending upon conditions and number of coats to be removed. Peel Away[®] 5 provides an average coverage rate of about 60-75 square feet per gallon.
10. **Precautions & Safety Requirements:** Wear long Butyl rubber gloves, and chemical face shield or goggles. Wear suitable protective clothing if removing with a pressure washer. During spray application, when exposure may be excessive, and/or when working in a confined area, wearing a NIOSH approved organic vapor respirator or its equivalent may be required.

11. **Warranty:** Dumond Chemicals, Inc. warrants all of its products to be free from defects, and makes no other warranties with respect to its products. Express or implied, including without limitation the implied warranties of MERCHANTABILITY OF FITNESS FOR PARTICULAR PURPOSE. Dumond Chemicals, Inc. liability shall be limited in all events to supplying sufficient products to re-treat the specific areas to which defective product has been applied. Dumond Chemicals, Inc. shall have no other liability, including liability for incidental, consequential or resultant damages whether due to breach of warranty or negligence. This warranty may not be modified or extended by representatives or Dumond Chemicals, Inc. or its distributors, and dealers.
12. **Technical Services:** Dumond's expert staff is available to answer technical questions and provide

product-specific information required by architects, specifiers, contractors and property owners. Expert, on-site assistance is available at no additional cost. Call 800-245-1191 or email info@dumondglobal.com with product or technical questions.

Technical Data

Form:	Clear Gel
Wt./Gal.:	10 pounds
Flash Point:	260°F
pH:	2.6



SAFETY DATA SHEET

Issue Date 28-Aug-2012

Revision Date 3-Mar-2015

Version 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Peel Away 5 Soy Based

Other Means of Identification

SDS # DCI-044

Recommended Use of the Chemical and Restrictions on Use

Recommended Use Paint Stripper/Stripper.

Details of the Supplier of the Safety Data Sheet

Supplier Address

Dumond Chemicals, Inc.
83 General Warren Blvd
Suite 190
Malvern, PA 19355

Emergency Telephone Number

Company Phone Number 1-609-655-7700

Emergency Telephone INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Dermal	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Reproductive toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3

Signal Word

Danger

Hazard Statements

Harmful in contact with skin
Causes skin irritation
Causes severe eye irritation
May damage fertility or the unborn child
May cause respiratory irritation. May cause drowsiness or dizziness

**Appearance** Light brown paste**Physical State** Paste**Odor** Slight Sweet**Precautionary Statements - Prevention**

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Wear eye/face protection

Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

IF ON SKIN: Wash with plenty of soap and water

Call a POISON CENTER or doctor/physician if you feel unwell

If skin irritation occurs: Get medical advice/attention

Take off contaminated clothing and wash before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Precautionary Statements - Storage

Store locked up

Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards Not Otherwise Classified (HNOC)

May be harmful if swallowed

Other Hazards

Toxic to aquatic life with long lasting effects

Toxic to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Organic solvent mixture.

Chemical Name	CAS No	Weight-%
Benzyl alcohol	100-51-6	20-50
1-Methyl-2-pyrrolidone	872-50-4	25-35
Fatty Acid Methyl Ester	67784-80-9	15-20
alpha-(4-nonylphenyl)-omega-hydroxy-poly(oxy-1,2-ethanediyl) branched	127087-87-0	<3

Chemical Additions

Contains 25-35% dibasic ester, which is a mixture of dimethyl glutarate (CAS# 1119-40-0) and dimethyl adipate (CAS# 627-93-0)

4. FIRST AID MEASURES

First Aid Measures

General advice	If exposed or concerned: Get medical advice/attention.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get immediate medical advice/attention.
Ingestion	Drink 1 or 2 glasses of water. Do NOT induce vomiting. Call a physician or poison control center immediately.
Skin Contact	Wash with soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/ attention.

Most Important Symptoms and Effects, both Acute and Delayed

Symptoms	Mists and vapors cause irritation of the eyes, mucous membranes, and upper respiratory tract. Prolonged or repeated skin contact may cause irritation. May cause central nervous system effects. Possible aspiration hazard. May cause gastrointestinal irritation, nausea, diarrhea, and vomiting.
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Indication of any Immediate Medical Attention and Special Treatment Needed

Note to Physicians	Treat symptomatically. Individuals with chronic respiratory or skin diseases may be at risk from exposure.
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5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Water spray (fog). Foam. Carbon dioxide (CO2). Dry chemical.

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

At elevated temperatures, containers may rupture. Cool containers exposed to flames with water until well after the fire is out. Vapors may form explosive mixtures with air.

Hazardous combustion products Carbon oxides. Nitrogen oxides (NOx).

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES**Personal Precautions, Protective Equipment and Emergency Procedures**

Personal Precautions	Use personal protective equipment as required. Remove all sources of ignition.
Environmental Precautions	Do not allow into any sewer, on the ground or into any body of water. See Section 12 for additional ecological information.

Methods and Material for Containment and Cleaning Up

Methods for Containment	Prevent further leakage or spillage if safe to do so. Collect using an inert absorbent material and place in appropriate containers for disposal.
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Methods for Cleaning Up

Wash spill area with plenty of water. Spills and releases may have to be reported to Federal and/or local authorities. See section 15.

7. HANDLING AND STORAGE

Precautions for Safe Handling**Advice on Safe Handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protection recommended in Section 8. Avoid breathing vapors or mists. Avoid contact with skin and eyes. Use only in well-ventilated areas. Wash face, hands, and any exposed skin thoroughly after handling. Emptied container retains product residue. Observe all labeled safeguards until container is cleaned, reconditioned or destroyed.

Conditions for Safe Storage, Including any Incompatibilities**Storage Conditions**

Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Store away from incompatible materials.

Incompatible Materials

Strong acids. Strong bases. Strong oxidizing agents. Strong reducing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines**Appropriate Engineering Controls****Engineering Controls**

Apply technical measures to comply with the occupational exposure limits. Use in a well-ventilated location (eg. local exhaust ventilation, fans). Showers. Eyewash stations.

Individual Protection Measures, such as Personal Protective Equipment**Eye/Face Protection**

Wear approved safety goggles. Face Mask.

Skin and Body Protection

Wear protective butyl rubber gloves. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory Protection

If occupational exposure limits are exceeded, use NIOSH approved respirator with organic vapor cartridges and dust/mist pre-filter. For higher concentrations (greater than 10 times the recommended exposure limit) an approved supplied air respirator (with escape bottle if required) or self-contained breathing apparatus may be required. Selection of respiratory protection depends on the contaminant type, form, and concentration. Select in accordance with OSHA 1910.134 and good industrial hygiene practice.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State
Appearance
Color

Paste
Light brown paste
Light brown

Odor
Odor threshold

Slight Sweet
Not determined

Property
pH

Values
7

Remarks • Method

Melting point/freezing point	Not available	
Boiling point/boiling range	Not available	
Flash point	> 93.3 °C / > 200 °F	Cleveland Open Cup
Evaporation rate	<1	(butyl alcohol = 1)
Flammability (solid, gas)	Not determined	
Flammability limits in air		
Upper flammability limits	Not available	
Lower flammability limit	0.99	
Vapor pressure	<0.3	(n-methyl-2-pyrrolidone) @ 20 C
Vapor density	3-4	
Specific gravity	Not available	
Water solubility	partially soluble	
Solubility in other solvents	Not determined	
Partition coefficient	Not available	
Autoignition temperature	Not available	
Decomposition temperature	Not determined	
Kinematic viscosity	Not determined	
Dynamic viscosity	Not determined	
Explosive properties	Not determined	
Oxidizing Properties	Not determined	

Other Information

VOC Content (%)	7.6%
VOC Content	0.64 lbs/gal

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to Avoid

Contact with incompatible materials.

Incompatible Materials

Strong acids. Strong bases. Strong oxidizing agents. Strong reducing agents.

Hazardous Decomposition Products

Carbon monoxide. Carbon dioxide (CO₂). Nitrogen oxides (NO_x).

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure**Product Information**

Inhalation	Avoid breathing vapors or mists.
Eye Contact	Causes severe eye irritation.
Skin Contact	Causes skin irritation. Harmful in contact with skin.
Ingestion	May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Benzyl alcohol 100-51-6	= 1230 mg/kg (Rat)	= 2000 mg/kg (Rabbit)	= 8.8 mg/L (Rat) 4 h
1-Methyl-2-pyrrolidone 872-50-4	= 3598 mg/kg (Rat)	= 2500 mg/kg (Rat) > 5000 mg/kg (Rabbit)	= 3.1 mg/L (Rat) 4 h
Dimethyl Adipate 627-93-0	= 1920 mg/kg (Rat)	-	-
Dimethyl Glutarate 1119-40-0	= 8191 mg/kg (Rat)	-	> 5.6 mg/L (Rat) 4 h

Information on Physical, Chemical and Toxicological Effects**Symptoms**

Mists and vapors cause irritation of the eyes, mucous membranes, and upper respiratory tract. Prolonged or repeated contact may dry skin and cause irritation. May cause central nervous system effects. Possible aspiration hazard. May cause gastrointestinal irritation, nausea, diarrhea, and vomiting.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure**Carcinogenicity**

This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Reproductive toxicity

May damage fertility or the unborn child.

STOT - single exposure

May cause respiratory irritation. May cause drowsiness or dizziness.

Numerical Measures of Toxicity- Product

Not determined

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	2090 mg/kg
ATEmix (dermal)	2000 mg/kg
ATEmix (inhalation-gas)	700 mg/l
ATEmix (inhalation-dust/mist)	8.1 mg/l
ATEmix (inhalation-vapor)	43 mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Toxic to aquatic life with long lasting effects

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Benzyl alcohol 100-51-6	35: 3 h <i>Anabaena variabilis</i> mg/L EC50	460: 96 h <i>Pimephales promelas</i> mg/L LC50 static 10: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static	EC50 = 50 mg/L 5 min EC50 = 63.7 mg/L 15 min EC50 = 63.7 mg/L 5 min EC50 = 71.4 mg/L 30 min	23: 48 h water flea mg/L EC50
1-Methyl-2-pyrrolidone 872-50-4	500: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50	832: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 4000: 96 h <i>Leuciscus idus</i> mg/L LC50 static 1072: 96 h <i>Pimephales promelas</i> mg/L LC50 static 1400: 96 h <i>Poecilia reticulata</i> mg/L LC50 static		4897: 48 h <i>Daphnia magna</i> mg/L EC50

Dimethyl Glutarate 1119-40-0		19.6 - 26.2: 96 h Pimephales promelas mg/L LC50 static		122.1 - 163.5: 48 h Daphnia magna mg/L EC50
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Persistence and Degradability

Material is readily biodegradable.

Bioaccumulation

The product has low potential for bioaccumulation.

Mobility

Not determined.

Chemical Name	Partition coefficient
Benzyl alcohol 100-51-6	1.1
1-Methyl-2-pyrrolidone 872-50-4	-0.46

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods**Disposal of Wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

14. TRANSPORT INFORMATION

Note

Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances

DOT

Not regulated

IATA

Not regulated

IMDG

Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Listed
DSL Listed

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances **IECSC**

- China Inventory of Existing Chemical Substances **KECL** -

Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

US Federal Regulations

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
1-Methyl-2-pyrrolidone - 872-50-4	872-50-4	25-35	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

US State Regulations

Chemical Name	California Proposition 65
1-Methyl-2-pyrrolidone - 872-50-4	Developmental

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Benzyl alcohol 100-51-6		X	X
1-Methyl-2-pyrrolidone 872-50-4	X	X	X

U.S. EPA Label Information

16. OTHER INFORMATION

<u>NFPA</u>	Health Hazards	Flammability	Instability	Special Hazards
	2	1	0	Not determined
<u>HMIS</u>	Health Hazards	Flammability	Physical Hazards	Personal Protection
	2	1	0	Not determined

Issue Date 28-Aug-2012
Revision Date 12-Dec-2012
Revision Note New format

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End of Safety Data Sheet



600GL Coatings Remover

Formerly SOY•Gel™ Paint and Urethane Remover

EASILY REMOVE MULTIPLE LAYERS

- Removes Paints, Urethanes, Enamels, Sealers, Some Epoxies, Lead Paint, and Many Other Coatings
- Gel Formula for Easy Application
- SAFE! No Methylene Chloride
- Non-Caustic and Biodegradable
- Made with 100% American-Grown Soybeans



*Horizontal Coverage: 125 sq ft per gallon
Vertical Coverage: 75 sq ft per gallon*

Find Out More About 600GL Coatings Remover

Visit: www.franmar.com or
Call: 800.538.5069





PRODUCT DATA



600GL Coatings Remover (Formerly SOY•Gel™ Paint and Urethane Remover)

Franmar's most-asked-for product, **600GL**, continues to impress contractors with its ease of use and powerful removal properties. With three times the coverage rate of traditional petroleum removers, **600GL** effectively removes multiple layers of topical sealers, acrylics, enamels, urethanes, latex, some epoxies, other single-component coatings, and lead-based paint*. Made with soybeans, **600GL** is a safe, low-odor, non-caustic, green coating remover.

As a leading innovator in green cleaning products, Franmar Chemical, Inc. introduced **600GL** as a soy based paint remover, and changed the industry. **600GL** is 100% biodegradable, practically odorless, and is safe for your hands, your work, and your customers.

**Ideal for lead-based paint removal. The lead becomes encapsulated in the gel, preventing airborne particles and allowing for safe removal. Dispose of in accordance with all existing local, state, and federal ordinances.*

Coverage: Coverage per square foot varies depending on type and age of coating, number of layers and method of application.

Horizontal: Average coverage is 125 sq ft per gallon (max 200 sq ft per gallon)

Vertical: Average coverage is 75 sq ft per gallon

Test Area:

Due to variances in surfaces and conditions, always test in a small, inconspicuous area before using on complete project.

Application:

Apply a thick layer of **600GL** by pouring, brushing, squeegee, or commercial airless sprayer. Applying too thin will cause **600GL** to dry out before removal is complete. Use a scraper to check if the coating is softened down to the surface. If not, wait longer and recheck. When the coating is completely softened, remove with a scraper.

Clean Up:

Use **BLUE BEAR 700DG Degreaser** or water and a scrub brush, mop, or power washer to clean remaining thin residue. Remove excess coating(s) and **600GL** before using a power washer for final cleaning. Allow surface to dry before further preparations.

Usage Tips from the Pros:

- For large application areas, use a professional airless sprayer or a 4-stage HVLP sprayer.
- For tough coatings or numerous layers, use a notched ½" squeegee or ¼" gauge rake. Square footage will be greatly reduced.
- When used outdoors, cover with a 2mil or thicker plastic to help keep **600GL** wet and working.

Biodegradable: Meets or exceeds ASTM standards

Precautions: Concrete surfaces may darken with use of **600GL**. Protect plants and vegetation with a plastic drop cloth. Always use care to prevent overspray from getting on surfaces other than the one being prepped or cleaned.

Warnings: May cause skin irritation. May cause eye irritation. May cause respiratory irritation or may cause drowsiness and dizziness. May be harmful if swallowed. This product contains a chemical known to the state of California to cause birth defects or other reproductive harm. Keep out of reach of children.

Flash Point Above 200°F (93.3°C)

pH Level 8.1 pH of 1/10 wt/wt solution in soft water

VOC (Volatile Organic Compounds): 49%, 4.249 lb/g, 509 g/l
California and OTC Compliant

Ingredients: N-Methyl Pyrrolidone, Dibasic Ester LVP, Soy Ester, Proprietary Thickening and Surfactant Blend

Safe for Use On: Concrete, masonry, wood, and metal

Do Not Use On: PVC, drywall, limestone, plastic, veneer, terrazzo tile, or rubber

NON-EMERGENCY

Call: 800.538.5069

www.franmar.com

CHEMICAL EMERGENCY:

Spill, Leak, Fire, Exposure, or Accident

Call CHEMTREC Day or Night

USA and Canada: 800.242.9300

CCN717946 or +1 703.527.3887

(Collect Calls Accepted)



PO Box 5565
Bloomington IL 61702

Rev. 3/29/2015



SAFETY DATA SHEET (GHS)

Section 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product / Chemical Name:

BLUE BEAR® 600GL Coating Remover

Other Means Of Identification:

Paint Stripper

Recommended Use Of The Product / Chemical And Restrictions On Use:

Removal of paints and coatings from brick, masonry, wood, and metal.

Manufacturer / Company Information:

Franmar Chemical, Inc.
10282 E. 1400 North Rd.
Bloomington, IL 61705
1-800-538-5069 / 1-309-828-2900

For Chemical Emergency - Spill, Leak, Fire, Exposure, or Accident Call:

CHEMTREC Day or Night: Within USA and Canada: 1-800-424-9300
CCN717946 or +1 703-527-3887 (collect calls accepted)

Health: 1
Flammability: 1
Reactivity: 0
Special: 0

NFPA HAZARD RATING
4 - Extreme
3 - High
2 - Moderate
1 - Slight
0 - Insignificant

Section 2: HAZARD IDENTIFICATION

Classification Of Product / Chemical Mixture And Any National or Regional Information:

This product contains a chemical (N-Methyl-2-Pyrrolidone) known to the state of California to cause birth defects or other reproductive harm.

GHS Statements:

GHS Signal Word: DANGER

GHS Hazard Phrases: (H315) Causes skin irritation. (H319) Causes serious eye irritation. (H335) May cause respiratory irritation or may cause drowsiness and dizziness. (H360) May damage fertility or the unborn child if ingested. (H302) May be harmful if swallowed.



Other Hazards Which Do Not Result In Classification:

Preexisting skin disorders generally aggravated by exposure.



SAFETY DATA SHEET (GHS)

Section 3: COMPOSITION, INFORMATION ON INGREDIENTS

<u>Ingredient Name</u>	<u>CAS Number</u>	<u>Percent</u>
N-Methyl Pyrrolidone	872-50-4	41%
Dibasic Ester - LVP	627-93-0/1119-40-0	40-45%
Soy Ester	67784-80-9	15-20%
Proprietary Thickening And Surfactant Blend		1-5%

Other Chemical Information:

Specific data not available.

Section 4: FIRST AID MEASURES

Necessary Measures For Routes Of Exposure:

Inhalation:

Remove to fresh air and keep at rest in a position comfortable for breathing. Call a doctor/physician if you feel unwell.

Skin:

If on skin, wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs seek medical advice/attention.

Eyes:

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Ingestion:

Call a doctor/physician if you feel unwell.

Important Symptoms/Effects, Acute and Delayed:

Specific data not available.

Immediate Medical Attention And Special Treatment Needed:

Specific data not available.



SAFETY DATA SHEET (GHS)

Section 5: FIRE FIGHTING MEASURES

Suitable (and unsuitable) Extinguishing Media:

Dry chemical, CO₂, Water spray or Foam.

Hazards Arising From The Product/Chemical (e.g., nature of any hazardous combustion products):

None known.

Special Fire Fighting Procedures:

Use water spray to cool containers.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Butyl rubber gloves and eye protection. If using in poorly ventilated or confined spaces, use a NIOSH approved Organic Vapor respirator.

Environmental Precautions:

Specific data not available.

Methods and Materials for Containment and Cleaning Up:

Contain the spill and hold for disposal.

Section 7: HANDLING AND STORAGE

Precautions For Safe Handling:

Keep out of reach of children. Read label before use.

Conditions For Safe Storage, Including Any Incompatibilities:

Specific data not available.



SAFETY DATA SHEET (GHS)

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Control Parameters, e.g., Occupational Exposure Limit Values or Biological Limit Values:

Specific data not available.

Appropriate Engineering Controls:

Not required. Mechanical generally sufficient.

Individual Protective Measures, Such As Personal Protective Equipment:

Neoprene or equivalent gloves, chemical goggles. Avoid eye and skin contact.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.):	Gold/Yellow color, heavy viscosity liquid	Flammability (solid, gas):	1
Odor:	Mild odor	Upper/Lower Flammability or Explosive Limits:	N/A
Odor Threshold:	N/A	Vapor Pressure:	< .5 mmHg @ 20°C
pH:	8.1	Vapor Density:	N/A
Freezing / Melting Point:	Below 32°F	Relative Density:	N/A
Boiling Point and Boiling Range:	Above 300°F	Partition Coefficient (n-octanol/water):	N/A
Flash Point:	Above 200°F (PMcc)	Autoignition Temperature:	> 500°F
Evaporation Rate:	Less than 1 (n-butyl acetate=1)	Decomposition Temperature:	N/A
Solubility:	Emulsifiable	VOC:	49.5%, 578.96 g/L, 4.84 lbs/gal



SAFETY DATA SHEET (GHS)

Section 10: STABILITY AND REACTIVITY

Chemical Stability:

Stable

Possibility Of Hazardous Reactions:

Will not occur.

Conditions To Avoid *(e.g., static discharge, shock or vibration):*

Strong oxidizing agents.

Incompatible Materials:

Specific data not available.

Hazardous Decomposition Products:

Produces carbon monoxide and carbon dioxide on combustion.

Section 11: TOXICOLOGICAL INFORMATION

Information On The Likely Routes Of Exposure *(inhalation, ingestion, skin and eye contact):*

SKIN: (H315) Causes skin irritation.

EYE: (H319) Causes serious eye irritation.

INHALATION: (H335) May cause respiratory irritation or may cause drowsiness and dizziness.

INGESTION: (H302) May be harmful if swallowed.

(H360) May damage fertility or the unborn child if ingested.

Symptoms Related To The Physical, Chemical and Toxicological Characteristics:

This product contains a chemical (N-Methyl-2-Pyrrolidone) known to the state of California to cause birth defects or other reproductive harm.

Temporary blurred vision has been reported with inhalation, skin and eye contact.



SAFETY DATA SHEET (GHS)

Delayed and Immediate Effects and Also Chronic Effects From Short- and Long-Term Exposure:

Results from a number of long-term carcinogenicity studies and short-term tests are available. Taking into account all of the information, there is no indication that the substance itself is carcinogenic.

Numerical Measures Of Toxicity (such as acute toxicity estimates):

Oral: LD50/mouse: 5,270 mg/kg. Slightly toxic.

Inhalation: LC50/rat: >5.1 mg/L / 4h.

Inhalation-risk test (IRT): No mortality within 8 hours as shown in animal studies. The inhalation of a highly saturated vapor-air mixture represents no acute hazard.

Dermal: LD50/rabbit: 4,000 - 8,000 mg/kg. Moderately Toxic.

Eye irritation: rabbit: Irritant. (Vendor-Test)

Sensitization: Skin sensitizing effects were not observed in animal studies. Literature data.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity (aquatic and terrestrial, where available):

Acute and prolonged toxicity to fish: golden orfe/LC50 (96 h): >500 mg/L

Acute toxicity to aquatic invertebrates: Daphnia magna/EC50 (24 h): >1,000 mg/l

Toxicity to aquatic plants: green algae/EC50 (72 h): >500 mg/L

Toxicity to microorganisms: OECD Guideline 209 bacterium/EC20 (30 min): >600 mg/L

Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations.

Persistence and Degradability:

Chemical oxygen demand (COD): 1,600 mg/L

Biochemical oxygen demand (BOD): Incubation period 5 d: <2 mg/g

Absorbable organically-bound halogen (AOX): This product contains no organically-bound halogen.

Bioaccumulative Potential:

Biodegradation:

Test method: OECD 301 E/92/69/EEC, C.4-B

Method of analysis: DOC reduction

Degree of elimination: >90%

Evaluation: Readily biodegradable.

Mobility In Soil:

Not Determined

Other Adverse Effects:

Not Determined



SAFETY DATA SHEET (GHS)

Section 13: DISPOSAL CONSIDERATIONS

Description Of Waste Residues and Information On Their Safe Handling and Methods Of Disposal, Including The Disposal Of Any Contaminated Packaging:

Dispose of in accordance with all existing local, state, and federal ordinances.

Section 14: TRANSPORT INFORMATION

UN Number:

Non-Hazardous

UN Proper Shipping Name:

Not regulated

Transport Hazard Class(es):

Not classified as dangerous

Packing Group *(if applicable):*

Not classified as dangerous

Marine Pollutant *(Yes/No):*

Specific data not available.

Special Precautions Which User Needs To Be Aware Of / Or Comply With In Connection With Transport Or Conveyance Either Within Or Outside Their Premises:

Specific data not available.

Section 15: REGULATORY INFORMATION

SARA 302/304

This product contains no known chemicals regulated under SARA 302/304.

SARA 311/312

Based upon available information, this material is classified as the following health and/or physical hazards according to Section 311 & 312:

SARA 313

This product contains the following chemicals subject to the reporting requirements of SARA Title III, Section 313 and 40 CFR 372: N-Methyl-Pyrrolidone (40%-45%) CAS# 872-50-4

Section 16: OTHER INFORMATION

State Reporting

Known to the State of California to cause birth defects.

872-50-4 N-Methyl Pyrrolidone (December 11, 2009)

This product contains the following chemicals regulated by New Jersey's Worker and Community Right to Know Act:

872-50-4 N-Methyl Pyrrolidone

This product contains the following chemicals regulated by Massachusetts' Right to Know Law:

872-50-4 N-Methyl Pyrrolidone

This product contains the following chemicals regulated by Pennsylvania's Right to Know Act:

872-50-4 N-Methyl Pyrrolidone



PROSOCO®

Enviro Klean®

NEXT GENERATION CLEANERS

SafStrip 8

Enviro Klean® SafStrip® 8 is a neutral-pH stripping compound for nearly any hard surface – masonry, concrete, wood or metal. It bears the Enviro Klean® brand because it removes most high-strength paints and clear coats without the methylene chloride or methanol found in traditional solvent paint strippers.

Use SafStrip 8 to break the bond of the toughest oil-based “alkyd” paints, acrylics, lacquers and clear sealers. It also removes graffiti media such as spray paint and magic marker.

SafStrip 8’s gel-like consistency makes it hard to spill and easy to apply. It immediately emulsifies in water and may be rinsed off with cold water, hot water or steam.

ADVANTAGES

- Does not contain hazardous methylene chloride or methanol.
- Low odor. Low toxicity.
- Neutral pH.
- Slow drying.
- Needs no OverCoat paper.
- Effectively removes yellowed sealers and wax build-up as well as a variety of paint coatings.
- No surface neutralization required.
- Rinses with cold or hot water.
- Gel-like consistency permits safer application with less spillage.

Limitations

- Not for removal of cementitious coatings.
- Product efficiency is reduced when temperatures are below 40°F (4°C) and above 85°F (29°C).

REGULATORY COMPLIANCE

VOC Compliance

Enviro Klean® SafStrip® 8 is compliant with all national, state and district VOC regulations.

TYPICAL TECHNICAL DATA

FORM	Colorless gel
SPECIFIC GRAVITY	1.05
pH	8.02
WT/GAL	8.80 lbs
ACTIVE CONTENT	not applicable
TOTAL SOLIDS	not applicable
VOC CONTENT	30% maximum
FLASH POINT	>200° F (>93° C) ASTM D 3278
FREEZE POINT	not applicable
SHELF LIFE	2 years in tightly sealed, unopened container

SAFETY INFORMATION

Always read full label and SDS for precautionary instructions before use. Use appropriate safety equipment and job site controls during application and handling.

24-Hour Emergency Information:
INFOTRAC at 800-535-5053

Product Data Sheet

Enviro Klean® SafStrip® 8

PREPARATION

Protect people, vehicles, property, glass, solvent sensitive materials, roofing material, plants and all surfaces not set for stripping from product, splash, rinse, residue, fumes and wind drift.

Prepare surface by scraping or pressure rinsing to remove all peeling and/or loose coatings. Let the surface dry thoroughly before applying stripper.

Some metal finishes may be damaged by exposure to SafStrip 8. Always test. Protect with solvent-resistant polyethylene secured by duct tape. Sure Klean® Strippable Masking is not appropriate for use with stripping products.

Surface and Air Temperatures

Surface and air temperatures should be above 40°F (4°C) and below 85°F (29°C) during application.

Cleaning compounds are affected by temperature. Dwell times used successfully in one season may not be effective in another.

Equipment

Apply using a solvent-resistant brush or roller.

Rinse with enough water and pressure to flush spent cleaner and dissolved soiling from the surface and surface pores without damage. Inadequate rinsing leaves residues which may stain the cleaned surface.

Masonry-washing equipment generating 400–1000 psi with a water flow rate of 6–8 gallons per minute is the best water/pressure combination for rinsing porous surfaces. Use a 15–45° fan spray tip. Heated water (150–180°F; 65–82°C) may improve cleaning

efficiency. Use adjustable equipment for reducing water flow-rates and rinsing pressure as needed for sensitive surfaces.

Rinsing pressures greater than 1000 psi and fan spray tips smaller than 15° may permanently damage sensitive surfaces. Water flow-rates less than 6 gallons per minute may reduce cleaning productivity and contribute to uneven cleaning results.

Storage and Handling

Store in a cool, dry place. Always seal container after dispensing. Do not alter or mix with other chemicals. Published shelf life assumes upright storage of factory-sealed containers in a dry place. Maintain temperature of 45–100°F (7–38°C). Do not double stack pallets. Dispose of in accordance with local, state and federal regulations.

APPLICATION

Read “Preparation” and the Safety Data Sheet before use.

ALWAYS TEST a small area of each surface to confirm suitability, coverage rate and desired results before beginning overall application. Test with the same equipment, recommended surface preparation and application procedures planned for general application. Let surface dry thoroughly before inspection.

Dilution & Mixing

Do not dilute or alter. Apply as packaged.

BEST PRACTICES

Always test for suitability and results before overall application to find the proper dwell-time and the number of applications to remove all traces of coating. Test under weather conditions similar to those expected during cleaning. Let test areas dry thoroughly before inspection.

Cleaning compounds are affected by temperature. Dwell times used successfully in one season may not be effective in another.

Rinse with enough water and pressure to flush spent cleaner and dissolved soiling from the surface and surface pores without damage. Inadequate rinsing leaves residues which may stain the cleaned surface.

Masonry-washing equipment generating 400–1000 psi with a water flow rate of 6–8 gallons per minute is the best water/pressure combination for rinsing porous surfaces. Use a 15–45° fan spray tip. Heated water (150–180°F; 65–82°C) may improve cleaning efficiency. Use adjustable equipment for reducing water flow-rates and rinsing pressure as needed for sensitive surfaces.

Never go it alone. If you have problems or questions, contact your local PROSOCO distributor or field representative. Or call PROSOCO technical Customer Care, toll-free, at 800-255-4255.

Product Data Sheet

Enviro Klean® SafStrip® 8

Typical Coverage Rates

Always test to ensure desired results. Coverage estimates depend on surface texture and porosity.

- 25–50 square feet per gallon
- 2–5 square meters per gallon

Application Instructions

Do not let stripper dry on the surface. If tests indicate long dwell times, reapply to keep the previously applied material wet. Keep people away from the stripper.

Exterior Applications

1. Apply product 1/8-inch to 1/4-inch thick to dry surface.
2. Let the application dwell 15–60 minutes or until coating “lifts” or shows signs of dissolving. Periodic agitation with a stiff bristle brush improves penetration. Some coatings will need multiple applications/increased dwell time.
3. Remove stripper and residue with pressure-water rinse. Heated water may improve stripping efficiency.
4. Clean the stripped surface if needed with the appropriate PROSOCO product. Call Technical Customer Care toll-free at 800-255-4255 for cleaning recommendations.

Interior Applications

1. Follow steps 1 and 2 for Exterior Applications.
2. Using a low-pressure tank or pump-up sprayer, mist the treated surface with clean water. Water helps emulsify the old sealer and dilute the stripper so residues may be more easily removed.
3. Scrub surface until coatings are gone. Add more water to aid scrubbing. Ventilate to prevent accumulation of combustible vapors.
4. Use towels, mops or wet vacs to collect liquid residue. Locate wet vac motor outdoors well away from application site in a high area where vapors will not collect.
5. Thoroughly brush or mop-and-bucket rinse with clean water. If needed, clean surface with appropriate PROSOCO product.

Cleanup

Clean tools and equipment with high-flash aromatic naphtha or similar solvent. Cleaning with water may be sufficient if material has not dried.

WARRANTY

The information and recommendations made are based on our own research and the research of others, and are believed to be accurate. However, no guarantee of their accuracy is made because we cannot cover every possible application of our products, nor anticipate every variation encountered in masonry surfaces, job conditions and methods used. The purchasers shall make their own tests to determine the suitability of such products for a particular purpose.

PROSOCO, Inc. warrants this product to be free from defects. **Where permitted by law, PROSOCO makes no other warranties with respect to this product, express or implied, including without limitation the implied warranties of merchantability or fitness for particular purpose.**

The purchaser shall be responsible to make his own tests to determine the suitability of this product for his particular purpose. PROSOCO's liability shall be limited in all events to supplying sufficient product to re-treat the specific areas to which defective product has been applied. Acceptance and use of this product absolves PROSOCO from any other liability, from whatever source, including liability for incidental, consequential or resultant damages whether due to breach of warranty, negligence or strict liability. This warranty may not be modified or extended by representatives of PROSOCO, its distributors or dealers.

CUSTOMER CARE

Factory personnel are available for product, environment and job-safety assistance with no obligation. Call 800-255-4255 and ask for Customer Care – technical support.

Factory-trained representatives are established in principal cities throughout the continental United States. Call Customer Care at 800-255-4255, or visit our web site at www.prosoco.com, for the name of the PROSOCO representative in your area.

SAFETY DATA SHEET

PROSOCO, Inc.



Issue Date 29-Jan-2015

Revision Date 29-Jan-2015

Version 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Enviro Klean® SafStrip® 8

Other means of identification

Product Code 41030

Recommended use of the chemical and restrictions on use

Recommended Use Restricted to professional users.

Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address

PROSOCO, Inc.
3741 Greenway Circle
Lawrence, Kansas 66046

Emergency telephone number

8:00 AM – 5:00 PM CST Monday-Friday
NON-BUSINESS HOURS (INFOTRAC)

785-865-4200
800-535-5053

2. HAZARDS IDENTIFICATION

Classification

Serious eye damage/eye irritation

Category 2

Label elements

Emergency Overview

Warning

Hazard statements

Causes serious eye irritation



Appearance colorless

Physical state gel

Odor Characteristic

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Wear eye/face protection

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention

Hazards not otherwise classified (HNOC)**Other Information**

- May be harmful if swallowed
 - May be harmful in contact with skin
- 1.25% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Benzyl Alcohol	100-51-6	10 - 30	*
3-Ethoxypropionic acid ethyl ester	763-69-9	10 - 30	*
4 Methyl, 1-3 Dioxolan 2 one	108-32-7	10 - 30	*
Dibasic Ester	Proprietary	10 - 30	*
Alcohols, C9-11, ethoxylated	Proprietary	3 - 7	*
Triethanolamine	102-71-6	1 - 5	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES**First aid measures**

General advice	If symptoms persist, call a physician. Do not get in eyes, on skin, or on clothing. Avoid breathing vapors or mists.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with plenty of water while removing contaminated clothing and shoes. Consult a physician if necessary.
Inhalation	Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Call a physician.
Ingestion	Do NOT induce vomiting. Rinse mouth. Drink plenty of water. If symptoms persist, call a physician.
Self-protection of the first aider	Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms Causes serious eye irritation. May be harmful if swallowed. May cause skin irritation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

No information available.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Dam up. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.

Incompatible materials Acids. Strong oxidizing agents. Isocyanates. Aluminum compounds. Acetaldehyde.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
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Triethanolamine 102-71-6	TWA: 5 mg/m ³	-	-
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NIOSH IDLH *Immediately Dangerous to Life or Health*

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Wash contaminated clothing before reuse. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	gel	Odor	Characteristic
Appearance	colorless	Odor threshold	No information available
Color	colorless		
Property	Values	Remarks • Method	
pH	8.02		
Melting point/freezing point	No information available	Not Applicable	
Boiling point/boiling range	No information available		
Flash point	> 93 °C / > 200 °F	ASTM D 3278	
Evaporation rate	No information available		
Flammability (solid, gas)	No information available		
Flammability Limits in Air			
Upper flammability limits	No information available		
Lower flammability limit	No information available		
Vapor pressure	No information available		
Vapor density	No information available		
Specific Gravity	1.05		
Water solubility	partially soluble		
Solubility in other solvents	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		
Decomposition temperature	No information available		
Kinematic viscosity	No information available		
Dynamic viscosity	No information available		

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Extremes of temperature and direct sunlight.

Incompatible materials

Acids. Strong oxidizing agents. Isocyanates. Aluminum compounds. Acetaldehyde.

Hazardous Decomposition Products

Hazardous combustion products. Carbon oxides. Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Product Information	Causes serious eye irritation Causes skin irritation May be harmful if swallowed
Inhalation	Avoid breathing vapors or mists. May be harmful if inhaled.
Eye contact	Causes serious eye irritation.
Skin Contact	May be harmful in contact with skin. May cause irritation.
Ingestion	Do not taste or swallow. May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Benzyl Alcohol 100-51-6	= 1230 mg/kg (Rat)	= 2000 mg/kg (Rabbit)	= 8.8 mg/L (Rat) 4 h
3-Ethoxypropionic acid ethyl ester 763-69-9	= 3200 mg/kg (Rat)	= 10 mL/kg (Rabbit)	-
4 Methyl, 1-3 Dioxolan 2 one 108-32-7	= 29000 mg/kg (Rat)	> 20000 mg/kg (Rabbit)	-
Dibasic Ester	= 8191 mg/kg (Rat)	-	> 5.6 mg/L (Rat) 4 h
Alcohols, C9-11, ethoxylated	= 1378 mg/kg (Rat)	> 2 g/kg (Rabbit)	-
Triethanolamine 102-71-6	= 4190 mg/kg (Rat)	> 2000 mg/kg (Rabbit) > 16 mL/kg (Rat)	-

Information on toxicological effects

Symptoms	Causes serious eye irritation. Harmful by inhalation and if swallowed. May cause skin irritation.
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Triethanolamine 102-71-6	-	Group 3	-	-

IARC (International Agency for Research on Cancer)

Not classifiable as a human carcinogen

Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 1.25% of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	2431 mg/kg
ATEmix (dermal)	4418 mg/kg mg/l
ATEmix (inhalation-dust/mist)	5.2 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Benzyl Alcohol 100-51-6	35: 3 h Anabaena variabilis mg/L EC50	460: 96 h Pimephales promelas mg/L LC50 static 10: 96 h Lepomis macrochirus mg/L LC50 static	-	23: 48 h water flea mg/L EC50
3-Ethoxypropionic acid ethyl ester 763-69-9	-	62: 96 h Pimephales promelas mg/L LC50 static	-	970: 48 h Daphnia magna mg/L EC50
4 Methyl, 1-3 Dioxolan 2 one 108-32-7	500: 72 h Desmodemus subspicatus mg/L EC50	5300: 96 h Leuciscus idus mg/L LC50 static 1000: 96 h Cyprinus carpio mg/L LC50 semi-static	-	500: 48 h Daphnia magna mg/L EC50
Dibasic Ester	-	19.6 - 26.2: 96 h Pimephales promelas mg/L LC50 static	-	122.1 - 163.5: 48 h Daphnia magna mg/L EC50
Triethanolamine 102-71-6	216: 72 h Desmodemus subspicatus mg/L EC50 169: 96 h Desmodemus subspicatus mg/L EC50	10600 - 13000: 96 h Pimephales promelas mg/L LC50 flow-through 1000: 96 h Pimephales promelas mg/L LC50 static 450 - 1000: 96 h Lepomis macrochirus mg/L LC50 static	-	1386: 24 h Daphnia magna mg/L EC50

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Chemical Name	Partition coefficient
Benzyl Alcohol 100-51-6	1.1
3-Ethoxypropionic acid ethyl ester 763-69-9	1.35
4 Methyl, 1-3 Dioxolan 2 one 108-32-7	0.48
Triethanolamine 102-71-6	-2.53

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT Not Regulated for all modes of transportation.

15. REGULATORY INFORMATION

International Inventories

TSCA Complies

DSL/NDL Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
N,N-Diethanolamine - 111-42-2	Carcinogen
Methanol - 67-56-1	Developmental
Ethyl acrylate - 140-88-5	Carcinogen
Toluene - 108-88-3	Developmental Female Reproductive

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Triethanolamine 102-71-6	X	X	X

16. OTHER INFORMATION

NFPA	Health hazards 2	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 2	Flammability 0	Physical hazards 0	Personal protection X

Prepared By Regulatory Department
 Issue Date 29-Jan-2015
 Revision Date 29-Jan-2015
 Revision Note

No information available

Disclaimer

The information contained on the Material Safety Data Sheet has been compiled from data considered accurate. This data is believed to be reliable, but it must be pointed out that values for certain properties are known to vary from source to source. PROSOCO, Inc. expressly disclaims any warranty express or implied as well as any liability for any injury or loss arising from the use of this information or the materials described. This data is not to be construed as absolutely complete since additional data may be desirable when particular conditions or circumstances exist. It is the responsibility of the user to determine the best precautions necessary for the safe handling and use of this product for his unique application. This data relates only to the specific material designated and is not to be used in combination with any other material. Many federal and state regulations pertain directly or indirectly to the product's end use and disposal of containers and unused material. It is the purchaser's responsibility to familiarize himself with all applicable regulations.

End of Safety Data Sheet



PROSOCO®

Enviro Klean®

NEXT GENERATION CLEANERS

SafStrip

Enviro Klean® SafStrip® quickly removes most paints, clear coats and graffiti from masonry, concrete, wood and metal – without use of methylene chloride or methanol.

Low-odor SafStrip breaks the bond of high-strength paints and coatings including acrylics, alkyds, and clear sealers. It dissolves common hard-to-remove graffiti media such as spray paints, marking pens and lacquers. Its “thixotropic” gel consistency makes SafStrip easy to apply and spill-resistant. After cleaning, the spent paint stripper rinses off easily with cold or hot water.

ADVANTAGES

- Removes high-strength paints, sealers, wax buildup and graffiti.
- Contains no hazardous methylene chloride or methanol.
- Low odor, low toxicity. Non flammable.
- Slow drying for fast, large-scale application.
- No protective covering needed.
- No surface neutralization required.
- Rinses easily with cold or hot water.
- Easy to apply and spill-resistant.

Limitations

- Not for finely finished wood surfaces such as furniture.
- Not for removal of cementitious coatings.
- Not for use on polished surfaces.

REGULATORY COMPLIANCE

VOC Compliance

Enviro Klean® SafStrip® is compliant with all national, state and district VOC regulations.

TYPICAL TECHNICAL DATA

FORM	Clear, colorless gel
SPECIFIC GRAVITY	1.05
pH	2.10
WT/GAL	8.76 lbs
ACTIVE CONTENT	not applicable
TOTAL SOLIDS	not applicable
VOC CONTENT	30% maximum
FLASH POINT	>200° F (>93° C) ASTM D 3278
FREEZE POINT	not applicable
SHELF LIFE	1 year in tightly sealed, unopened container

SAFETY INFORMATION

Always read full label and SDS for precautionary instructions before use. Use appropriate safety equipment and job site controls during application and handling.

24-Hour Emergency Information:
INFOTRAC at 800-535-5053

Product Data Sheet

Enviro Klean® SafStrip®

PREPARATION

Protect people, plants, vehicles, glass, solvent-sensitive materials, roofing material and all surfaces not set for stripping from product, splash, rinse, residue, fumes and wind drift.

Prepare surface by scraping or pressure rinsing to remove all peeling and/or loose coatings. Let the surface dry thoroughly before applying stripper.

Some metal finishes may be damaged by exposure to SafStrip. Protect with solvent-resistant polyethylene secured by duct tape. Sure Klean® Strippable Masking is not appropriate for use with stripping products.

Surface and Air Temperatures

Surface and air temperatures should be above 40°F (4°C) and below 85°F (29°C) during application.

Cleaning compounds are affected by temperature. Dwell times used successfully in one season may not be effective in another.

Equipment

Apply using a solvent-resistant brush or roller.

Rinse with enough water and pressure to flush spent cleaner and dissolved soiling from the surface and surface pores without damage. Inadequate rinsing leaves residues which may stain the cleaned surface.

Masonry-washing equipment generating 400–1000 psi with a water flow rate of 6–8 gallons per minute is the best water/pressure combination for rinsing porous surfaces. Use a 15–45° fan spray tip. Heated water (150–180°F; 65–82°C) may improve cleaning

efficiency. Use adjustable equipment for reducing water flow-rates and rinsing pressure as needed for sensitive surfaces.

Rinsing pressures greater than 1000 psi and fan spray tips smaller than 15° may permanently damage sensitive surfaces. Water flow-rates less than 6 gallons per minute may reduce cleaning productivity and contribute to uneven cleaning results.

Storage and Handling

Store in a cool, dry place. Always seal container after dispensing. Do not alter or mix with other chemicals. Published shelf life assumes upright storage of factory-sealed containers in a dry place. Maintain temperature of 45–100°F (7–38°C). Do not double stack pallets. Dispose of in accordance with local, state and federal regulations.

APPLICATION

Read “Preparation” and the Safety Data Sheet before use.

ALWAYS TEST a small area of each surface to confirm suitability, coverage rate and desired results before beginning overall application. Test with the same equipment, recommended surface preparation and application procedures planned for general application. Let surface dry thoroughly before inspection.

Dilution & Mixing

Apply as packaged. Do not dilute or alter.

BEST PRACTICES

Always test before overall application. Test for dwell-time, thickness and number of applications needed to remove all traces of coating. Let test areas dry thoroughly before inspection.

Heavier coatings require a thicker application. Test under weather conditions similar to those anticipated during cleaning. Cleaning compounds are affected by temperature. Dwell times used successfully in one season may not be effective in another.

Rinse with enough water and pressure to flush spent cleaner and dissolved soiling from the surface and surface pores without damage. Inadequate rinsing leaves residues which may stain the cleaned surface.

Masonry-washing equipment generating 400–1000 psi with a water flow rate of 6–8 gallons per minute is the best water/pressure combination for rinsing porous surfaces. Use a 15–45° fan spray tip. Heated water (150–180°F; 65–82°C) may improve cleaning efficiency. Use adjustable equipment for reducing water flow-rates and rinsing pressure as needed for sensitive surfaces.

Never go it alone. If you have problems or questions, contact your local PROSOCO distributor or field representative. Or call PROSOCO technical Customer Care, toll-free, at 800-255-4255.

Product Data Sheet

Enviro Klean® SafStrip®

Typical Coverage Rates

Heavier coatings require a thicker application. Always test to ensure desired results. Coverage estimates depend on surface texture and porosity.

- 25–50 square feet per gallon
- 2–5 square meters per gallon

Application Instructions

Do not let stripper dry on the surface. If tests indicate long dwell times, reapply to keep the previously applied material wet. Keep people away from stripper. Do not atomize or breathe product mists.

Exteriors

1. Working from the bottom to the top, apply SafStrip 1/8 to 1/4 inch thick to dry surface.
2. Let the application dwell 15–60 minutes or until coating “lifts” or shows signs of dissolving. Periodic agitation with a stiff bristle brush improves penetration. Some coatings will need multiple applications/increased dwell time.
3. Working from the bottom to the top, remove stripper and residue with pressure-water rinse. Heated water may improve stripping efficiency.
4. If needed, clean the stripped surface with the appropriate PROSOCO product.

Interiors

1. Follow steps 1 and 2 for exteriors.
2. Using a low-pressure tank or pump-up sprayer, mist the treated surface with clean water. Water helps emulsify the old sealer and dilute the stripper so residues may be more easily picked up.
3. Using a power-scrubber or buffer with an abrasive, nonmetallic scrubbing pad for floors, or stiff-bristled brush for walls, scrub the surface until coatings are gone. Add more water to aid scrubbing. Ventilate to prevent accumulation of combustible vapors.
4. Use towels, mops or wet vacs to collect liquid residue. Locate wet vac motor outdoors well away from application site in a high area where vapors will not collect.
5. Thoroughly brush or mop-and-bucket rinse with clean water. If needed, clean surface with appropriate PROSOCO product.

Cleanup

Clean tools and equipment with water before product dries. Otherwise, use high-flash aromatic naphtha or similar solvent.

WARRANTY

The information and recommendations made are based on our own research and the research of others, and are believed to be accurate. However, no guarantee of their accuracy is made because we cannot cover every possible application of our products, nor anticipate every variation encountered in masonry surfaces, job conditions and methods used. The purchasers shall make their own tests to determine the suitability of such products for a particular purpose.

PROSOCO, Inc. warrants this product to be free from defects. **Where permitted by law, PROSOCO makes no other warranties with respect to this product, express or implied, including without limitation the implied warranties of merchantability or fitness for particular purpose.**

The purchaser shall be responsible to make his own tests to determine the suitability of this product for his particular purpose. PROSOCO's liability shall be limited in all events to supplying sufficient product to re-treat the specific areas to which defective product has been applied. Acceptance and use of this product absolves PROSOCO from any other liability, from whatever source, including liability for incidental, consequential or resultant damages whether due to breach of warranty, negligence or strict liability. This warranty may not be modified or extended by representatives of PROSOCO, its distributors or dealers.

CUSTOMER CARE

Factory personnel are available for product, environment and job-safety assistance with no obligation. Call 800-255-4255 and ask for Customer Care – technical support.

Factory-trained representatives are established in principal cities throughout the continental United States. Call Customer Care at 800-255-4255, or visit our web site at www.prosoco.com, for the name of the PROSOCO representative in your area.

SAFETY DATA SHEET

PROSOCO, Inc.



PROSOCO
Version 1.02

Issue Date 29-Jan-2015

Revision Date 18-Sep-2015

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Enviro Klean® SafStrip®

Other means of identification

Product Code 41015

UN/ID No UN3066

Recommended use of the chemical and restrictions on use

Recommended Use Restricted to professional users.

Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address

PROSOCO, Inc.
3741 Greenway Circle
Lawrence, Kansas 66046

Emergency telephone number

8:00 AM – 5:00 PM CST Monday-Friday

785-865-4200

NON-BUSINESS HOURS (INFOTRAC)

800-535-5053

2. HAZARDS IDENTIFICATION

Classification

Skin corrosion/irritation	Category 1 Sub-category C
Serious eye damage/eye irritation	Category 1

Label elements

Emergency Overview

Danger

Hazard statements

Causes severe skin burns and eye damage



Appearance colorless

Physical state gel

Odor Characteristic

Precautionary Statements - Prevention

Do not breathe dust/fume/gas/mist/vapors/spray

Wash face, hands and any exposed skin thoroughly after handling

Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Immediately call a POISON CENTER or doctor/physician

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Immediately call a POISON CENTER or doctor/physician

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)**Other Information**

1.25% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
3-Ethoxypropionic acid ethyl ester	763-69-9	10 - 30	*
Benzyl Alcohol	100-51-6	10 - 30	*
4 Methyl, 1-3 Dioxolan 2 one	108-32-7	10 - 30	*
Dibasic Esters	Proprietary	10 - 30	*
Water	7732-18-5	7 - 13	*
Glycolic Acid	79-14-1	3 - 7	*
Alcohols, C9-11, ethoxylated	Proprietary	3 - 7	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES**First aid measures****General advice**

If symptoms persist, call a physician. Do not get in eyes, on skin, or on clothing.

Eye contact

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.

Skin Contact

Wash off immediately with plenty of water while removing contaminated clothing and shoes. Consult a physician if necessary.

Inhalation

Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Call a physician.

Ingestion

Do NOT induce vomiting. Rinse mouth. Drink plenty of water. If symptoms persist, call a physician.

Self-protection of the first aider

Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed**Symptoms**

Causes serious eye damage. Causes severe burns. Harmful if swallowed.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

No information available.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

Personal precautions Use personal protective equipment as required.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE**Precautions for safe handling**

Advice on safe handling Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.

Incompatible materials Strong acids. Strong oxidizing agents. Isocyanates. Acetaldehyde. Aluminum compounds.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters**

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering Controls
Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Wear suitable gloves and eye/face protection. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	gel	Odor	Characteristic
Appearance	colorless	Odor threshold	No information available
Color	clear		
Property	Values	Remarks • Method	
pH	2.10		
Melting point/freezing point	No information available	Not Applicable	
Boiling point/boiling range	No information available		
Flash point	> 94 °C / > 200 °F	ASTM D 3278	
Evaporation rate	No information available		
Flammability (solid, gas)	No information available		
Flammability Limits in Air			
Upper flammability limits	No information available		
Lower flammability limit	No information available		
Vapor pressure	No information available		
Vapor density	No information available		
Specific Gravity	1.05		
Water solubility	partially soluble		
Solubility in other solvents	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		
Decomposition temperature	No information available		
Kinematic viscosity	No information available		
Dynamic viscosity	No information available		

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Extremes of temperature and direct sunlight.

Incompatible materials

Strong acids. Strong oxidizing agents. Isocyanates. Acetaldehyde. Aluminum compounds.

Hazardous Decomposition Products

Hazardous combustion products. Carbon oxides. Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Product Information	Causes serious eye damage Causes burns Harmful by inhalation and if swallowed
Inhalation	Avoid breathing vapors or mists.
Eye contact	Avoid contact with eyes. Causes serious eye damage.
Skin Contact	Avoid contact with skin. Causes burns.
Ingestion	Do not taste or swallow.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
3-Ethoxypropionic acid ethyl ester 763-69-9	= 3200 mg/kg (Rat)	= 10 mL/kg (Rabbit)	-
Benzyl Alcohol 100-51-6	= 1230 mg/kg (Rat)	= 2000 mg/kg (Rabbit)	= 8.8 mg/L (Rat) 4 h
4 Methyl, 1-3 Dioxolan 2 one 108-32-7	= 29000 mg/kg (Rat)	> 20000 mg/kg (Rabbit)	-
Dibasic Esters	= 8191 mg/kg (Rat)	-	> 5.6 mg/L (Rat) 4 h
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Glycolic Acid 79-14-1	= 1950 mg/kg (Rat)	-	= 7.7 mg/L (Rat) 4 h
Alcohols, C9-11, ethoxylated	= 1378 mg/kg (Rat)	> 2 g/kg (Rabbit)	-

Information on toxicological effects

Symptoms	Causes serious eye damage. The product causes burns of eyes, skin and mucous membranes.
-----------------	-----------------------------------------------------------------------------------------

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Aspiration hazard	No information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity	1.25% of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .	
ATEmix (oral)	2972 mg/kg
ATEmix (dermal)	6844 mg/kg mg/l
ATEmix (inhalation-dust/mist)	7.8 mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
3-Ethoxypropionic acid ethyl ester 763-69-9	-	62: 96 h Pimephales promelas mg/L LC50 static	-	970: 48 h Daphnia magna mg/L EC50
Benzyl Alcohol 100-51-6	35: 3 h Anabaena variabilis mg/L EC50	460: 96 h Pimephales promelas mg/L LC50 static 10: 96 h Lepomis macrochirus mg/L LC50 static	-	23: 48 h water flea mg/L EC50
4 Methyl, 1-3 Dioxolan 2 one 108-32-7	500: 72 h Desmodemus subspicatus mg/L EC50	5300: 96 h Leuciscus idus mg/L LC50 static 1000: 96 h Cyprinus carpio mg/L LC50 semi-static	-	500: 48 h Daphnia magna mg/L EC50
Dibasic Esters	-	19.6 - 26.2: 96 h Pimephales promelas mg/L LC50 static	-	122.1 - 163.5: 48 h Daphnia magna mg/L EC50
Glycolic Acid 79-14-1	-	5000: 96 h Brachydanio rerio mg/L LC50 static	-	-

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Chemical Name	Partition coefficient
3-Ethoxypropionic acid ethyl ester 763-69-9	1.35
Benzyl Alcohol 100-51-6	1.1
4 Methyl, 1-3 Dioxolan 2 one 108-32-7	0.48
Glycolic Acid 79-14-1	-1.11

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods**Disposal of wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging

Do not reuse container.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT**UN/ID No**

Regulated

UN3066

Proper shipping name

Paint related material

Hazard Class

8

Packing Group

III

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
DSL/NDL Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
Methanol - 67-56-1	Developmental
Ethyl acrylate - 140-88-5	Carcinogen
Toluene - 108-88-3	Developmental Female Reproductive

U.S. State Right-to-Know Regulations

16. OTHER INFORMATION

<u>NFPA</u>	Health hazards 3	Flammability 0	Instability 0	Physical and Chemical Properties -
<u>HMIS</u>	Health hazards 3	Flammability 0	Physical hazards 0	Personal protection X

Prepared By	Regulatory Department
Issue Date	29-Jan-2015
Revision Date	18-Sep-2015
Revision Note	

SDS sections updated 3

Disclaimer

The information contained on the Safety Data Sheet has been compiled from data considered accurate. This data is believed to be reliable, but it must be pointed out that values for certain properties are known to vary from source to source. PROSOCO, Inc. expressly disclaims any warranty express or implied as well as any liability for any injury or loss arising from the use of this information or the materials described. This data is not to be construed as absolutely complete since additional data may be desirable when particular conditions or circumstances exist. It is the responsibility of the user to determine the best precautions necessary for the safe handling and use of this product for his unique application. This data relates only to the specific material designated and is not to be used in combination with any other material. Many federal and state regulations pertain directly or indirectly to the product's end use and disposal of containers and unused material. It is the purchaser's responsibility to familiarize himself with all applicable regulations.

End of Safety Data Sheet

A p p e n d i x E
R e c o m m e n d e d P r o d u c t s f o r
A t m o s p h e r i c S o i l i n g R e m o v a l

Museo del Barrio
Hecksher Foundation Building
New York, NY



Safe n Easy® All Purpose Cleaner

Tech Data Sheet

Product Description & Use: Safe n Easy® All Purpose Cleaner/Stain Remover is a powerful, versatile, environmentally friendly, VOC free, non-toxic, biodegradable, multi-purpose cleaner that can be used on most types of masonry surfaces. Safe n Easy® All Purpose Cleaner/Stain Remover can be used to clean and restore a wide variety of surfaces, such as brick and stone, safely and effectively. This product contains surfactants for emulsification and optical brightening agents that make whites whiter and colors brighter. This product requires no special masking and can be applied by pump spray or brush and roller.

Features & Benefits:

- Safe, Powerful, Versatile All Purpose Cleaner.
- Zero VOC, Biodegradable, Non-Toxic and Bleach Free.
- Safe on Glass, Painted and Most Stone Surfaces.
- Restores Surface to its Natural Appearance.

Limitations: Safe n Easy® All Purpose Cleaner/Stain Remover can be used on the following masonry surfaces: brick, masonry, polished and non-polished marble and granite, limestone, sandstone, bluestone, flagstone, travertine and most other masonry surfaces after testing is done. Safe n Easy® All Purpose Cleaner/Stain Remover should be used in temperatures between 40° and 95° Fahrenheit. Not recommended for the use on copper, zinc, aluminum, drywall, plywood, wood surfaces, gypsum, veneer, and most plastics.

Test Patch: Always prepare a test area on each type of surface. Testing before beginning the project is the best way to ensure product suitability and efficacy. This will also teach the user how to handle the product, gauge how to apply, and, determine how long it must remain in place (dwell time) before removing. Applying incorrectly, or, removing too quickly, may result in the need for more than one application, increasing your labor and material costs.

Recommended Substrates: Before applying to an entire substrate always do a test patch. Recommended for use on brick, concrete, cement, terrazzo, most fiberglass, tile, terra cotta, limestone, brownstone, sandstone, granite, marble, slate, stone, and asphalt.

Preparation: Cover and protect areas where cleaning is not desired, including adjoining surfaces where overspray may travel; keep protection in place during removal process. Polyethylene plastic and masking tape create an effective barrier. Nearby plants and other foliage should be covered during application and removal. On hot and humid days, or when working in direct sunlight, dampen the surfaces with water prior to applying **Safe n Easy® All Purpose Cleaner/Stain Remover** to keep the product from evaporating too quickly.

Surface and Air Temperatures: To avoid product from freezing and reducing effectiveness do not use below 40° degrees Fahrenheit. For best results, use product in temperatures above 50° degrees Fahrenheit and below 90° degrees Fahrenheit. Product effectiveness is increased in warmer temperatures.

Application & Spread Rate: Apply **Safe n Easy® All Purpose Cleaner/Stain Remover** with a pump-up sprayer or trigger spray bottle. It is important to apply bottom to top to avoid any streaking. Leave on for a minimum of 15 – 30 minutes or the time determined during testing, depending on the contaminants present agitate with a nylon bristle brush if necessary. **Safe n Easy® All Purpose Cleaner/Stain Remover** provides an average spread rate of about 200 - 250 sq. ft. per gallon; results may vary. **Dumond Chemicals** recommends working in smaller manageable areas that can be rinsed before the product can dry to the surface.

Spray Application: Low pressure sprayer or garden sprayer recommended.

Removal & Clean Up: Remove **Safe n Easy® All Purpose Cleaner/Stain Remover** by either high pressure washing, a minimum of 1500 PSI, or using a scrub brush to agitate the surface then rinsing with a hose. Thoroughly wash the surface, from top to bottom again to avoid any streaking, until the foaming action stops to remove all remaining product. Before beginning, especially when power washing, use polyethylene plastic to protect adjacent surfaces from splash back and run down. Collect material removed and dispose of in compliance with Federal, State and local regulations. Allow surface to dry completely before re-coating.

Best Practices:

- Always test patch each type of surface for efficacy and dwell times.
- Always apply **Safe n Easy® All Purpose Cleaner/Stain Remover** from bottom to top and rinse from top to bottom to avoid streaking.
- Do not work in large areas and allow product to dry to the surface before you can rinse it off.

Availability & Cost: Dumond® Chemicals products are available through a nationwide network of paint stores, hardware stores and safety supply distributors. For outlet nearest you please visit www.dumondchemicals.com once on the website type your zip code or postal code into the dealer locator to find addresses and phone numbers of your nearest dealer.

Regulatory Information: Safety, health, and environmental regulations specific for the product in question.

CERCLA Hazardous Substances (Section 103)/RQ: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Potassium Hydroxide (5% maximum) of 1,000 lbs, is 20,000 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

EPA SARA 302: This product does not contain chemicals regulated under SARA Section 302.

EPA SARA 311 Hazard Classification: Acute health, chronic health.

EPA SARA 313: This product does not contain chemicals regulated under SARA Section 313.

Toxic Substances Control Act: All of the components of this product are listed on the TSCA inventory.

California Proposition 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Canadian Environmental Protection Act: All of the components of this product are listed on the Canadian Domestic Substances List (DSL).

Dispose in accordance with all local, state and federal regulations.

Health & Safety Requirements: Not for internal consumption. While **Safe n Easy® All Purpose Cleaner/Stain Remover** is formulated to be safe for the user, surface and environment, proper safety procedures should be followed at all times when handling this product. Read the full label and SDS for precautionary instructions before use.

24-Hour Emergency Information:

1-800-535-5053 **North America** or 1-325-323-3500 **International**

Warranty: Dumond® Chemicals, Inc. warrants all of its products to be free from defects, and makes no other warranties with respect to its products, express or implied, including without limitation the implied warranties of MERCHANTABILITY OF FITNESS FOR PARTICULAR PURPOSE. Dumond® Chemicals, Inc. liability shall be limited in all Events to supplying sufficient products to re-treat the specific areas to which defective product have been applied. Dumond® Chemicals, Inc. shall have no other liability, including liability for incidental, consequential or resultant damages whether due to breach of warranty or negligence. This warranty may not be modified or extended by representatives of Dumond® Chemicals, Inc. or its distributors, and dealers.

Technical Services: Dumond's expert staff is available to answer technical questions and provide product-specific information. On-site assistance is available at no additional cost. Call 800-245-1191, email info@dumondglobal.com or visit www.dumondchemicals.com with product or technical questions.

Technical Data:

- **Form** - Green/Blue liquid
- **Wt./Gal** – 10 Lbs. per Gallon
- **Flash Point** - None
- **pH** – 12.3
- **VOC** – 0
- **Freeze Point** - 32
- **Shelf Life** – 3 years



83 General Warren Blvd, Suite 190 Phone: 609/655-7700 email: info@dumondglobal.com
Malvern, PA 19355 Fax: 609/655-7725 www.dumondchemicals.com



SAFETY DATA SHEET

Safe n Easy All Purpose Cleaner

Section 1 Identification

Product Name: Safe n Easy All Purpose Cleaner

Recommended use: Masonry Cleaner

Restrictions on use: Use only as directed

Manufactured by:

DUMOND CHEMICALS, INC
83 General Warren Blvd.
Suite 190
Malvern, Pennsylvania 19355
(609)-655-7700

Emergency phone number: (800)457-4280 (InfoTrac) #79363

SDS Date of Preparation: 8/14/15

Section 2. Hazard(S) Identification

Classification:

Physical	Health
Not Hazardous	Skin Corrosion Category 1C Eye Damage Category 1 Specific Target Organ Toxicity Repeat Exposure Category 2

Label Requirements:

Danger!



Hazard statement(s)

Causes severe skin burns and eye damage.
May cause damage to respiratory tract through prolonged or repeated exposure by inhalation.

Precautionary statement(s)

Do not breathe mist, vapors or spray.
Wash thoroughly after handling.
Wear protective gloves, protective clothing, eye protection and face protection.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Immediately call a POISON CENTER or doctor.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with soap and water.
Wash contaminated clothing before reuse.

Immediately call a POISON CENTER or doctor.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or doctor.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor.
Get medical attention if you feel unwell.
Store locked up.
Dispose of contents and container in accordance with local and national regulations.

Section 3. Composition / Information on Ingredients

Chemical name	CAS No.	Concentration
Sodium Metasilicate	6834-92-0	1-5%
Tetrasodium EDTA	64-02-8	1-5%
Potassium Hydroxide	1310-58-3	1-5%

The specific identity and/or exact percentage has been withheld as a trade secret.

Section 4. First-Aid Measures

Eye Contact: Immediately flush eye with water for at least 20 minutes while lifting the upper and lower lids. Get immediate medical attention.

Skin Contact: Immediately flush skin with large amounts of water for 15 minutes. Wash skin with soap and water to remove any traces of the chemical. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes and other items that cannot be decontaminated. Get immediate medical attention.

Inhalation: Remove victim to fresh air. If breathing has stopped give artificial respiration. If breathing is difficult have qualified personnel administer oxygen. Get immediate medical attention.

Ingestion: If conscious, rinse mouth with water. Do not induce vomiting unless directed by emergency personnel. Never give anything by mouth to a person who is unconscious or convulsing. Get immediate medical attention.

Most important symptoms/effects, acute and delayed: Corrosive. Causes severe irritation or burns to the eyes and skin. May cause permanent eye damage. Mist and vapors may cause mucous membrane and upper respiratory tract irritation with coughing, sore throat and difficulty in breathing. Swallowing may cause burns to the mouth, throat and stomach. May cause reproductive and developmental effects based on animal data.

Indication of immediate medical attention and special treatment, if necessary: Get immediate medical attention for all routes of exposure.

Section 5. Fire-Fighting Measures

Suitable extinguishing media: Use any media appropriate for surrounding fire.

Specific hazards arising from the chemical: Combustion may produce carbon, potassium and sodium oxides.

Special protective equipment and precautions for fire-fighters: Firefighters should wear full emergency equipment and NIOSH approved positive pressure self-contained breathing apparatus. Cool exposed intact containers with water spray.

Section 6. Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures: Wear appropriate protective clothing to prevent eye and skin contact. Evacuate and ventilate area.

Environmental hazards: Prevent runoff to storm sewers and ditches leading to natural waterways. Report spill as required by local and federal regulations.

Methods and materials for containment and cleaning up: Collect spilled material with inert material and place into a closable container for disposal. Wash spill area with water.

Section 7. Handling and Storage

Precautions for safe handling: Prevent eye and skin contact. Do not breathe vapors or mists. Use only with adequate ventilation and appropriate protective clothing (See Section 8). Immediately remove and launder contaminated clothing before re-use. Discard contaminated shoes and other items that cannot be decontaminated. Wash thoroughly after handling.

Empty containers retain product residues. Follow all SDS precautions in handling empty containers.

Conditions for safe storage, including any incompatibilities: Store in a cool, well ventilated area away. Protect containers from physical damage.

Section 8. Exposure Controls / Personal Protection

Exposure guidelines:

Sodium Metasilicate	None Established
Tetrasodium EDTA	None Established
Potassium Hydroxide	2 mg/m3 STEL ACGIH TLV

Appropriate engineering controls: Good general room ventilation (equivalent to outdoors) should be adequate under normal conditions. If the recommended exposure limit is exceeded increased mechanical ventilation such as local exhaust may be required.

Individual protection measures, such as personal protective equipment:

Respiratory Protection: If the exposure limits are exceeded, an approved full facepiece particulate respirator, supplied air respirator (with escape bottle if required) or self-contained breathing apparatus may be required. Selection of respiratory protection depends on the contaminant type, form and concentration. Select in accordance with OSHA 1910.134 and good Industrial Hygiene practice.

Skin protection: Chemical resistant, impervious gloves such as Viton are recommended to prevent skin contact.

Eye protection: Wear chemical safety goggles and/or faceshield to prevent eye contact unless a full facepiece respirator is used. Do not wear contact lenses.

Other: Impervious apron, boots and other clothing are recommended if needed to prevent contact or if splashing is possible. A safety shower and an eye wash facility should be available in the immediate work area.

Section 9. Physical and Chemical Properties

Appearance (physical state, color, etc.): Clear water white liquid

Odor: Mild soapy odor

Odor threshold: Not available	pH: 12.3
Melting point/freezing point: Not available	Boiling point: 212°F (100°C)
Flash point: Not flammable	Evaporation rate: Same as Water
Flammability (solid, gas): Not applicable	
Flammable limits: LEL: Not applicable	UEL: Not applicable
Vapor pressure: Same as water	Vapor density: Not available
Relative density: 1.045	Solubility in Water: Complete
Partition coefficient: n-octanol/water: Not applicable	Auto-ignition temperature: Not applicable
Decomposition temperature: Not available	Viscosity: Not available

Section 10. Stability and Reactivity

Reactivity: Reacts with metals.

Chemical stability: This material is stable.

Possibility of hazardous reactions: Contact with metals for a prolonged period may release flammable hydrogen gas.

Conditions to avoid: None known.

Incompatible materials Avoid oxidizing agents and acids.

Hazardous decomposition products: Thermal decomposition may produce oxides of carbon, sodium and potassium.

Section 11. Toxicological Information

Likely routes of exposure:

Inhalation: Mist and vapors may cause respiratory irritation with coughing and labored breathing. High vapor concentrations may cause lung damage.

Skin Contact: Contact may cause severe irritation or burns to the skin. Burns may not be immediately painful or visible. Treat all contact immediately and get medical attention.

Eye Contact: Contact may cause severe irritation or burns with redness, pain, and swelling. Permanent damage may occur.

Ingestion: Swallowing may cause irritation of the mouth, throat or stomach.

Chronic Effects of Overexposure: Prolonged overexposure to sodium metasilicate may cause lung damage by inhalation.

Sensitization: None of the components are known to cause sensitization in animals or humans.

Reproductive Toxicity: None of the components have been shown to cause reproductive and developmental effects based on animal studies.

Mutagenicity: None of the components have been found to be mutagenic.

Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.

Acute Toxicity:

Acute Toxicity Estimate: Oral 5319, Inhalation: 390 mg/L/4 hr

Sodium Metasilicate: Oral rat LD50 1152 mg/kg, Inhalation rat LC50 >2.06 mg/L/4 hr, Dermal rabbit LD50 >5000 mg/kg

Tetrasodium EDTA; Oral rat LD50 1913 mg/kg

Potassium Hydroxide: Oral rat LD50 333 mg/kg

Section 12. Ecological Information

Ecotoxicity:

Sodium Metasilicate: 96 hr LC50 Danio rerio 210 mg/L, 48 hr EC50 daphnia magna 180 mg/L, 72 hr EC50

Desmodesmus subspicatus 207 mg/L

Tetrasodium EDTA: 96 hr LC50 Lepomis macrochirus 121 mg/L, 24 hr EC50 daphnia magna 625 mg/L, 72 hr EC50 Pseudokirchnerella subcapitata >100 mg/L

Potassium Hydroxide: No data available

Persistence and degradability: Tetrasodium EDTA is inherently biodegradable.

Bioaccumulative potential: This product is not expected to bioaccumulate in aquatic organisms.

Mobility in soil: No data available

Other adverse effects: None known.

Section 13. Disposal Considerations

Dispose in accordance with all local, state and federal regulations.

Section 14. Transport Information

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
DOT	UN1760	Corrosive Liquid n.o.s. (sodium metasilicate, potassium hydroxide and tetrasodium EDTA)	8	PG III	
TDG	UN1760	Corrosive Liquid n.o.s. (sodium metasilicate, potassium hydroxide and tetrasodium EDTA)	8	PG III	
IMDG	UN1760	Corrosive Liquid n.o.s. (sodium metasilicate, potassium hydroxide and tetrasodium EDTA)	8	PG III	
IATA	UN1760	Corrosive Liquid n.o.s. (sodium metasilicate, potassium hydroxide and tetrasodium EDTA)	8	PG III	

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable – product is transported only in packaged form.

Special precautions: None Known

Section 15. Regulatory Information

Safety, health, and environmental regulations specific for the product in question.

CERCLA Hazardous Substances (Section 103)/RQ: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Potassium Hydroxide (5% maximum) of 1,000 lbs, is 20,000 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

EPA SARA 302: This product does not contain chemicals regulated under SARA Section 302.

EPA SARA 311 Hazard Classification: Acute health, Chronic health

EPA SARA 313: This product contains the following chemicals regulated under SARA Title III, section 313: None

Toxic Substances Control Act: All of the components of this product are listed on the TSCA inventory.

California Proposition 65: This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity: None

Canadian Environmental Protection Act: All of the components of this product are listed on the Canadian Domestic Substances List (DSL).

Section 16. Other Information

NFPA Rating: Health = 3 Flammability = 0 Instability = 0
HMIS Rating: Health = 3 Flammability = 0 Physical Hazard = 0

SDS Revision History: New Formula, Converted to GHS format, all sections revised.

Date of preparation: August 14, 2015

Date of last revision: May 18, 2011



Safe n Easy® Ultimate Stone & Masonry Cleaner

Tech Data Sheet

Product Description & Use: Safe n Easy® Ultimate Masonry Restoration Cleaner is a gelled formulation that is powerful, environmentally friendly, VOC free, non-toxic, biodegradable, better alternative than conventional muriatic and hydrofluoric formulations. **Safe n Easy® Ultimate Masonry Restoration Cleaner** can be used on most dense types of masonry surfaces to remove even the most severe cases of environmental staining.

Features & Benefits:

- Safer and More Effective than Conventional Muriatic and Hydrofluoric Formulations.
- Zero VOC, Biodegradable, Non-Toxic and Bleach Free.
- Gelled Formulation for Better Cling. Will not Frost Glass.
- Restores Surface to its Natural Appearance.

Limitations: Safe n Easy® Ultimate Masonry Restoration Cleaner can be used on the following masonry surfaces: brick, masonry, non-polished marble and granite, limestone, sandstone, bluestone, flagstone, travertine and most other masonry surfaces after testing is done. **Safe n Easy® Ultimate Masonry Restoration Cleaner** should be used in temperatures between 40° and 95° Fahrenheit. Not recommended for the use on copper, zinc, aluminum, drywall, plywood, wood surfaces, gypsum, veneer, and most plastics.

Test Patch: Always prepare a test area on each type of surface. Testing before beginning the project is the best way to ensure product suitability and efficacy. This will also teach the user how to handle the product, gauge how to apply, and, determine how long it must remain in place (dwell time) before removing. Applying incorrectly, or, removing too quickly, may result in the need for more than one application, increasing your labor and material costs.

Recommended Substrates: Safe n Easy® Ultimate Masonry Restoration Cleaner can be used on the following masonry surfaces: brick, masonry, limestone, sandstone, flagstone, concrete pavers, travertine and most other non-polished masonry surfaces after testing is done.

Preparation: Cover and protect areas where cleaning is not desired, including adjoining surfaces where overspray may travel; keep protection in place during removal process. Polyethylene plastic and masking tape create an effective barrier. Nearby plants and other foliage should be covered during application and removal. On hot and humid days, or when working in direct sunlight, dampen the surfaces with water prior to applying **Safe n Easy® Ultimate Masonry Restoration Cleaner** to keep the product from evaporating too quickly.

Surface and Air Temperatures: To avoid product from freezing and reducing effectiveness do not use below 40° degrees Fahrenheit. For best results, use product in temperatures above 50° degrees Fahrenheit and below 90° degrees Fahrenheit. Product effectiveness is increased in warmer temperatures.

Application & Spread Rate: Apply **Safe n Easy® Ultimate Masonry Restoration Cleaner** with a Brush, Roller, pump-up sprayer or trigger spray bottle. It is important to apply bottom to top to avoid any streaking. Leave on for a minimum of 15 – 30 minutes or the time determined during testing, depending on the contaminants present agitate with a nylon bristle brush if necessary. **Safe n Easy® Ultimate Masonry Restoration Cleaner** provides an average spread rate of about 200 - 250 sq. ft. per gallon; results may vary. **Dumond Chemicals** recommends working in smaller manageable areas that can be rinsed before the product can dry to the surface.

Spray Application: Low pressure sprayer or garden sprayer recommended.

Removal & Clean Up: Remove **Safe n Easy® Ultimate Masonry Restoration Cleaner** by either high pressure washing, a minimum of 1500 PSI, or using a scrub brush to agitate the surface then rinsing with a hose. Thoroughly wash the surface, from top to bottom again to avoid any streaking, until the foaming action stops to remove all remaining product. Before beginning, especially when power washing, use polyethylene plastic to protect adjacent surfaces from splash back and run down. Collect material removed and dispose of in compliance with Federal, State and local regulations. Allow surface to dry completely before re-coating. Rinse with water from top to bottom again to avoid any streaking.

Best Practices:

- Always test patch each type of surface for efficacy and dwell times.
- Always apply **Safe n Easy® Ultimate Masonry Restoration Cleaner** from bottom to top and rinse from top to bottom to avoid streaking.
- Do not work in large areas and allow product to dry to the surface before you can rinse it off.

Availability & Cost: Dumond® Chemicals products are available through a nationwide network of paint stores, hardware stores and safety supply distributors. For outlet nearest you please visit www.dumondchemicals.com once on the website type your zip code or postal code into the dealer locator to find addresses and phone numbers of your nearest dealer.

Regulatory Information: Safety, health, and environmental regulations specific for the product in question.

CERCLA Hazardous Substances (Section 103)/RQ: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Potassium Hydroxide (5% maximum) of 1,000 lbs, is 20,000 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

EPA SARA 302: This product does not contain chemicals regulated under SARA Section 302.

EPA SARA 311 Hazard Classification: Acute health, chronic health.

EPA SARA 313: This product does not contain chemicals regulated under SARA Section 313.

Toxic Substances Control Act: All of the components of this product are listed on the TSCA inventory.

California Proposition 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Canadian Environmental Protection Act: All of the components of this product are listed on the Canadian Domestic Substances List (DSL).

Dispose in accordance with all local, state and federal regulations.

Health & Safety Requirements: Not for internal consumption. While **Safe n Easy® Ultimate Masonry Restoration Cleaner** is formulated to be safe for the user, surface and environment, proper safety procedures should be followed at all times when handling this product. Read the full label and MSDS for precautionary instructions before use.

24-Hour Emergency Information:

1-800-535-5053 **North America** or 1-325-323-3500 **International**

Warranty: Dumond® Chemicals, Inc. warrants all of its products to be free from defects, and makes no other warranties with respect to its products, express or implied, including without limitation the implied warranties of MERCHANTABILITY OF FITNESS FOR PARTICULAR PURPOSE. Dumond® Chemicals, Inc. liability shall be limited in all Events to supplying sufficient products to re-treat the specific areas to which defective product have been applied. Dumond® Chemicals, Inc. shall have no other liability, including liability for incidental, consequential or resultant damages whether due to breach of warranty or negligence. This warranty may not be modified or extended by representatives of Dumond® Chemicals, Inc. or its distributors, and dealers.

Technical Services: Dumond's expert staff is available to answer technical questions and provide product-specific information. On-site assistance is available at no additional cost. Call 800-245-1191, email info@dumondglobal.com or visit www.dumondchemicals.com with product or technical questions.

Technical Data:

- **Form** – Clear gel
- **Wt. /Gal** – 10 lbs.
- **Flash Point** - None
- **pH** – 1.5
- **VOC** - 0
- **Freeze Point** – 32 Degrees
- **Shelf Life** - 3 years



83 General Warren Blvd, Suite 190 Phone: 609/655-7700 email: info@dumondglobal.com
Malvern, PA 19355 Fax: 609/655-7725 www.dumondchemicals.com



SAFETY DATA SHEET

Safe n' Easy Ultimate Restoration Cleaner

Section 1 Identification

Product Name: Safe n' Easy Ultimate Restoration Cleaner

Recommended use: Stone and Masonry Cleaner

Restrictions on use: Use only as directed

Manufactured by:

DUMOND CHEMICALS, INC
83 General Warren Blvd, Suite 190
Malvern, PA 19355
(609)-655-7700

Emergency phone number: (800)457-4280 (InfoTrac) #79363

SDS Date of Preparation: 7/27/15

Section 2. Hazard(S) Identification

Classification:

Physical	Health
Corrosive to Metals Category 1	Skin Corrosion Category 1C Eye Damage Category 1 Toxic to Reproduction Category 1B

Label Requirements:

Danger!



Hazard statement(s)

Causes severe skin burns and eye damage.
May damage fertility or the unborn child.

Precautionary statement(s)

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep only in original container
Do not breathe dusts or mists.
Wash thoroughly after handling.
Wear protective gloves, protective clothing, eye protection and face protection.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Immediately call a POISON CENTER or doctor.
IF ON SKIN (or hair): Take off immediately all contaminated

clothing. Rinse skin with soap and water.
Wash contaminated clothing before reuse.
Immediately call a POISON CENTER or doctor.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or doctor.
IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor.
IF exposed or concerned: Get medical attention.
Absorb spillage to prevent material damage.
Store locked up.
Store in corrosive resistant container with a corrosive resistant inner liner
Dispose of contents and container in accordance with local and national regulations.

Section 3. Composition / Information On Ingredients

Chemical name	CAS No.	Concentration
Organic Acid Salt	Proprietary	10-20%
Proprietary Ingredient #1	Proprietary	10-20%
Proprietary Ingredient #2	Proprietary	10-20%
2-Butoxyethanol	111-76-2	1-5%

The specific identity and/or exact percentage has been withheld as a trade secret.

Section 4. First-Aid Measures

Eye Contact: Immediately flush eye with water for at least 20 minutes while lifting the upper and lower lids. Get immediate medical attention.

Skin Contact: Immediately flush skin with large amounts of water for 15 minutes. Wash skin with soap and water to remove any traces of the chemical. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes and other items that cannot be decontaminated. Get immediate medical attention.

Inhalation: Remove victim to fresh air. If breathing has stopped give artificial respiration. If breathing is difficult have qualified personnel administer oxygen. Get immediate medical attention.

Ingestion: If conscious, rinse mouth with water. Do not induce vomiting unless directed by emergency personnel. Never give anything by mouth to a person who is unconscious or convulsing. Get immediate medical attention.

Most important symptoms/effects, acute and delayed: Corrosive. Causes severe irritation or burns to the eyes and skin. May cause permanent eye damage. Mist and vapors may cause mucous membrane and upper respiratory tract irritation with coughing, sore throat and difficulty in breathing. Swallowing may cause burns to the mouth, throat and stomach. May cause reproductive and developmental effects based on animal data.

Indication of immediate medical attention and special treatment, if necessary: Get immediate medical attention for all routes of exposure.

Section 5. Fire-Fighting Measures

Suitable extinguishing media: Use any media appropriate for surrounding fire.

Specific hazards arising from the chemical: Heating above 100°C may result in decomposition and release of carbon dioxide and hydrofluoric acid.

Special protective equipment and precautions for fire-fighters: Firefighters should wear full emergency equipment and NIOSH approved positive pressure self-contained breathing apparatus. Cool exposed intact containers with water spray.

Section 6. Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures: Wear appropriate protective clothing to prevent eye and skin contact. Evacuate and ventilate area.

Environmental hazards: Prevent runoff to storm sewers and ditches leading to natural waterways. Report spill as required by local and federal regulations.

Methods and materials for containment and cleaning up: Collect spilled material with inert material and place into a closable container for disposal. Wash spill area with water.

Section 7. Handling And Storage

Precautions for safe handling: Prevent eye and skin contact. Do not breathe vapors or mists. Use only with adequate ventilation and appropriate protective clothing (See Section 8). Immediately remove and launder contaminated clothing before re-use. Discard contaminated shoes and other items that cannot be decontaminated. Wash thoroughly after handling.

Empty containers retain product residues. Follow all SDS precautions in handling empty containers.

Conditions for safe storage, including any incompatibilities: Store in a cool, well ventilated area away. Do not store above 35°F (95°C). Do not store in containers made of aluminum or zinc. Protect containers from physical damage.

Section 8. Exposure Controls / Personal Protection

Exposure guidelines:

Organic Acid Salt	None Established
Proprietary Ingredient #1	None Established
Proprietary Ingredient #2	None Established
2-Butoxyethanol	50 ppm, skin TWA OSHA PEL 20 ppm TWA ACGIH TLV

Appropriate engineering controls: Good general room ventilation (equivalent to outdoors) should be adequate under normal conditions. If the recommended exposure limit is exceeded increased mechanical ventilation such as local exhaust may be required.

Individual protection measures, such as personal protective equipment:

Respiratory Protection: If the exposure limits are exceeded, an approved full facepiece particulate respirator, supplied air respirator (with escape bottle if required) or self-contained breathing apparatus may be required. Selection of respiratory protection depends on the contaminant type, form and concentration. Select in accordance with OSHA 1910.134 and good Industrial Hygiene practice.

Skin protection: Chemical resistant, impervious gloves are recommended to prevent skin contact.

Eye protection: Wear chemical safety goggles and/or faceshield to prevent eye contact unless a full facepiece respirator is used. Do not wear contact lenses.

Other: Impervious apron, boots and other clothing are recommended if needed to prevent contact or if splashing is possible. A safety shower and an eye wash facility should be available in the immediate work area.

Section 9. Physical And Chemical Properties

Appearance (physical state, color, etc.): Clear liquid

Odor: No odor

Odor threshold: Not available	pH: 1.5
Melting point/freezing point: -10°F (14°C)	Boiling point: 212°F (100°C)
Flash point: Not flammable	Evaporation rate: Same as Water
Flammability (solid, gas): Not applicable	
Flammable limits: LEL: Not applicable	UEL: Not applicable
Vapor pressure: Same as water	Vapor density: Not available
Relative density: 1.063	Solubility in Water: Complete
Partition coefficient: n-octanol/water: Not applicable	Auto-ignition temperature: Not applicable
Decomposition temperature: >212°F (>100°C)	Viscosity: Not available

Section 10. Stability And Reactivity

Reactivity: Reacts with metals and acids.

Chemical stability: This material is stable

Possibility of hazardous reactions: Contact with metals and alkalis may release flammable hydrogen gas.

Conditions to avoid: Do not heat above 110°C as this will result in an exothermic decomposition with rapid release of carbon dioxide and hazardous hydrofluoric acid. High concentrations will react with carbonate scales which may carry vapor so care must be taken to avoid inhalation.

Incompatible materials Avoid oxidizing agents, aluminum and zinc. Contact with hypochlorites and alkaline materials may produce toxic gases. Do not mix with dehydrating agents.

Hazardous decomposition products: Thermal decomposition may yield toxic hydrogen fluoride, nitric oxides and ammonia.

Section 11. Toxicological Information

Likely routes of exposure:

Inhalation: Mist and vapors may cause respiratory irritation with coughing and labored breathing. Inhalation of decomposition products may be hazardous.

Skin Contact: Contact may cause severe irritation or burns to the skin. Burns may not be immediately painful or visible. Treat all contact immediately and get medical attention.

Eye Contact: Contact may cause severe irritation or burns with redness, pain and swelling. Permanent damage may occur.

Ingestion: Swallowing may cause irritation of the mouth, throat or stomach.

Chronic Effects Of Overexposure: Organic acid has been shown to cause reproductive and developmental effects based on animal studies.

Sensitization: None of the components are known to cause sensitization in animals or humans.

Reproductive Toxicity: Organic acid has been shown to cause reproductive and developmental effects based on animal studies.

Mutagenicity: None of the components have been found to be mutagenic.

Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.

Acute Toxicity:

Acute Toxicity Estimate: Oral 5319, Inhalation: 390 mg/L/4 hr

Organic Acid Salt: Oral rat LD50 798.1 mg/kg

2-Butoxyethanol: Oral guinea pig LD50 1414 mg/kg, Skin rabbit LD50 >2000 mg/kg, Inhalation rat LC50 >3.9 mg/L/ 4 hr

Section 12. Ecological Information

Ecotoxicity:

Organic Acid Salt: No data available

Butoxyethanol: 96 hr LC50 Oncorhynchus mykiss 1474 mg/L, 48 hr EC50 daphnia magna 1550 mg/L,

Surfactant: 96 LC50 fish 36.9 mg/L, 48 hr EC50 daphnia magna 37.9 mg/L, 72 hr EC50 Pseudokirchnerella subcapitata 911 mg/L

Persistence and degradability: 2-Butoxyethanol is readily biodegradable.

Bioaccumulative potential: No data available

Mobility in soil: No data available

Other adverse effects: None known.

Section 13. Disposal Considerations

Dispose in accordance with all local, state and federal regulations.

Section 14. Transport Information

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
DOT	UN1760	Corrosive Liquid n.o.s. (Acid Salts)	8	PG III	
TDG	UN1760	Corrosive Liquid n.o.s. (Acid Salts)	8	PG III	
IMDG	UN1760	Corrosive Liquid n.o.s. (Acid Salts)	8	PG III	
IATA	UN1760	Corrosive Liquid n.o.s. (Acid Salts)	8	PG III	

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable – product is transported only in packaged form.

Special precautions: None Known

Section 15. Regulatory Information

Safety, health, and environmental regulations specific for the product in question.

CERCLA Hazardous Substances (Section 103)/RQ: This product is not subject to CERCLA reporting requirements as it is sold. Many states have more stringent release reporting requirements. Report spills as required under federal, state and local regulations.

EPA SARA 302: This product does not contain chemicals regulated under SARA Section 302.

EPA SARA 311 Hazard Classification: Acute health, Chronic health

EPA SARA 313: This product contains the following chemicals regulated under SARA Title III, section 313:

Glycol Ethers 111-76-2 1-5%

2-Butoxyethanol

Toxic Substances Control Act: All of the components of this product are listed on the TSCA inventory.

California Proposition 65: This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity:

Methanol	67-56-1	37.5 ppm	developmental
1,4 Dioxane	123-91-1	<0.05 ppm	cancer

Canadian Environmental Protection Act: All of the components of this product are listed on the Canadian Domestic Substances List (DSL).

Section 16. Other Information

NFPA Rating: Health = 3	Flammability = 0	Instability = 0
HMIS Rating: Health = 3*	Flammability = 0	Physical Hazard = 0

SDS Revision History: New Formula, Converted to GHS format, all sections revised.

Date of preparation: July 27, 2015

Date of last revision: May 18, 2011



Safe n Easy® Heavy Duty Restoration Cleaner

Tech Data Sheet

Product Description & Use: Safe n Easy® Heavy Duty Restoration Cleaner is a powerful, environmentally friendly, VOC free, non-toxic, biodegradable, better alternative than conventional muriatic and hydrofluoric formulations. Safe n Easy® Heavy Duty Restoration Cleaner can be used on most dense types of masonry surfaces to remove even the most severe cases of environmental staining.

Features & Benefits:

- Safer and More Effective than Conventional Muriatic and Hydrofluoric Formulations.
- Zero VOC, Biodegradable, Non-Toxic and Bleach Free.
- Will not Frost Glass.
- Restores Surface to its Natural Appearance.

Limitations: Safe n Easy® Heavy Duty Restoration Cleaner can be used on the following masonry surfaces: brick, masonry, non-polished marble and granite, limestone, sandstone, bluestone, flagstone, travertine and most other masonry surfaces after testing is done. Safe n Easy® Heavy Duty Restoration Cleaner should be used in temperatures between 40° and 95° Fahrenheit. Not recommended for the use on copper, zinc, aluminum, drywall, plywood, wood surfaces, gypsum, veneer, and most plastics.

Test Patch: Always prepare a test area on each type of surface. Testing before beginning the project is the best way to ensure product suitability and efficacy. This will also teach the user how to handle the product, gauge how to apply, and, determine how long it must remain in place (dwell time) before removing. Applying incorrectly, or, removing too quickly, may result in the need for more than one application, increasing your labor and material costs.

Recommended Substrates: Safe n Easy® Heavy Duty Restoration Cleaner can be used on the following masonry surfaces: brick, masonry, limestone, sandstone, flagstone, concrete pavers, travertine and most other non-polished masonry surfaces after testing is done.

Preparation: Cover and protect areas where cleaning is not desired, including adjoining surfaces where overspray may travel; keep protection in place during removal process. Polyethylene plastic and masking tape create an effective barrier. Nearby plants and other foliage should be covered during application and removal. On hot and humid days, or when working in direct sunlight, dampen the surfaces with water prior to applying **Safe n Easy® Heavy Duty Restoration Cleaner** to keep the product from evaporating too quickly.

Surface and Air Temperatures: To avoid product from freezing and reducing effectiveness do not use below 40° degrees Fahrenheit. For best results, use product in temperatures above 50° degrees Fahrenheit and below 90° degrees Fahrenheit. Product effectiveness is increased in warmer temperatures.

Application & Spread Rate: Apply **Safe n Easy® Heavy Duty Restoration Cleaner** with a pump-up sprayer or trigger spray bottle. It is important to apply bottom to top to avoid any streaking. Leave on for a minimum of 15 – 30 minutes or the time determined during testing, depending on the contaminants present agitate with a nylon bristle brush if necessary. **Safe n Easy® Heavy Duty Restoration Cleaner** provides an average spread rate of about 200 - 250 sq. ft. per gallon; results may vary. **Dumond Chemicals** recommends working in smaller manageable areas that can be rinsed before the product can dry to the surface.

Spray Application: Low pressure sprayer or garden sprayer recommended.

Removal & Clean Up: Remove **Safe n Easy® Heavy Duty Restoration Cleaner** by either high pressure washing, a minimum of 1500 PSI, or using a scrub brush to agitate the surface then rinsing with a hose. Thoroughly wash the surface, from top to bottom again to avoid any streaking, until the foaming action stops to remove all remaining product. Before beginning, especially when power washing, use polyethylene plastic to protect adjacent surfaces from splash back and run down. Collect material removed and dispose of in compliance with Federal, State and local regulations. Allow surface to dry completely before re-coating. Rinse with water from top to bottom again to avoid any streaking.

Best Practices:

- Always test patch each type of surface for efficacy and dwell times.
- Always apply **Safe n Easy® Heavy Duty Restoration Cleaner** from bottom to top and rinse from top to bottom to avoid streaking.
- Do not work in large areas and allow product to dry to the surface before you can rinse it off.

Availability & Cost: Dumond® Chemicals products are available through a nationwide network of paint stores, hardware stores and safety supply distributors. For outlet nearest you please visit www.dumondchemicals.com once on the website type your zip code or postal code into the dealer locator to find addresses and phone numbers of your nearest dealer.

Regulatory Information: Safety, health, and environmental regulations specific for the product in question.

CERCLA Hazardous Substances (Section 103)/RQ: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Potassium Hydroxide (5% maximum) of 1,000 lbs, is 20,000 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

EPA SARA 302: This product does not contain chemicals regulated under SARA Section 302.

EPA SARA 311 Hazard Classification: Acute health, chronic health.

EPA SARA 313: This product does not contain chemicals regulated under SARA Section 313.

Toxic Substances Control Act: All of the components of this product are listed on the TSCA inventory.

California Proposition 65: This product does not contain any chemicals known to the State of California to cause cancer or reproductive toxicity.

Canadian Environmental Protection Act: All of the components of this product are listed on the Canadian Domestic Substances List (DSL).

Dispose in accordance with all local, state and federal regulations.

Health & Safety Requirements: Not for internal consumption. While **Safe n Easy® Heavy Duty Restoration Cleaner** is formulated to be safe for the user, surface and environment, proper safety procedures should be followed at all times when handling this product. Read the full label and MSDS for precautionary instructions before use.

24-Hour Emergency Information:

1-800-535-5053 **North America** or 1-325-323-3500 **International**

Warranty: Dumond® Chemicals, Inc. warrants all of its products to be free from defects, and makes no other warranties with respect to its products, express or implied, including without limitation the implied warranties of MERCHANTABILITY OF FITNESS FOR PARTICULAR PURPOSE. Dumond® Chemicals, Inc. liability shall be limited in all Events to supplying sufficient products to re-treat the specific areas to which defective product have been applied. Dumond® Chemicals, Inc. shall have no other liability, including liability for incidental, consequential or resultant damages whether due to breach of warranty or negligence. This warranty may not be modified or extended by representatives of Dumond® Chemicals, Inc. or its distributors, and dealers.

Technical Services: Dumond's expert staff is available to answer technical questions and provide product-specific information. On-site assistance is available at no additional cost. Call 800-245-1191, email info@dumondglobal.com or visit www.dumondchemicals.com with product or technical questions.

Technical Data:

- **Form** – Clear Liquid
- **Wt. /Gal** – 10 lbs.
- **Flash Point** - None
- **pH** – 1.5
- **VOC** - 0
- **Freeze Point** – 32 degrees
- **Shelf Life** – 3 years



83 General Warren Blvd, Suite 190 Phone: 609/655-7700 email: info@dumondglobal.com
Malvern, PA 19355 Fax: 609/655-7725 www.dumondchemicals.com



SAFETY DATA SHEET

Safe n' Easy Heavy Duty Restoration Cleaner

Section 1 Identification

Product Name: Safe n' Easy Heavy Duty Restoration Cleaner

Recommended use: Masonry Restorer and Cleaner

Restrictions on use: Use only as directed

Manufactured by:

DUMOND CHEMICALS, INC
83 General Warren Blvd, Suite 190
Malvern, PA 19355
(609)-655-7700

Emergency phone number: (800)457-4280 (InfoTrac) #79363

SDS Date of Preparation: 7/27/15

Section 2. Hazard(S) Identification

Classification:

Physical	Health
Corrosive to Metals Category 1	Skin Corrosion Category 1C Eye Damage Category 1 Toxic to Reproduction Category 1B

Label Requirements:

Danger!



Hazard statement(s)

Causes severe skin burns and eye damage.
May damage fertility or the unborn child.

Precautionary statement(s)

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep only in original container
Do not breathe dusts or mists.
Wash thoroughly after handling.
Wear protective gloves, protective clothing, eye protection and face protection.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
Immediately call a POISON CENTER or doctor.
IF ON SKIN (or hair): Take off immediately all contaminated

clothing. Rinse skin with soap and water.
Wash contaminated clothing before reuse.
Immediately call a POISON CENTER or doctor.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER or doctor.
IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor.
IF exposed or concerned: Get medical attention.
Absorb spillage to prevent material damage.
Store locked up.
Store in corrosive resistant container with a corrosive resistant inner liner
Dispose of contents and container in accordance with local and national regulations.

Section 3. Composition / Information On Ingredients

Chemical name	CAS No.	Concentration
Organic Acid Salt	Proprietary	10-20%
Proprietary Ingredient #1	Proprietary	10-20%
Proprietary Ingredient #2	Proprietary	10-20%
2-Butoxyethanol	111-76-2	1-5%

The specific identity and/or exact percentage has been withheld as a trade secret.

Section 4. First-Aid Measures

Eye Contact: Immediately flush eye with water for at least 20 minutes while lifting the upper and lower lids. Get immediate medical attention.

Skin Contact: Immediately flush skin with large amounts of water for 15 minutes. Wash skin with soap and water to remove any traces of the chemical. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes and other items that cannot be decontaminated. Get immediate medical attention.

Inhalation: Remove victim to fresh air. If breathing has stopped give artificial respiration. If breathing is difficult have qualified personnel administer oxygen. Get immediate medical attention.

Ingestion: If conscious, rinse mouth with water. Do not induce vomiting unless directed by emergency personnel. Never give anything by mouth to a person who is unconscious or convulsing. Get immediate medical attention.

Most important symptoms/effects, acute and delayed: Corrosive. Causes severe irritation or burns to the eyes and skin. May cause permanent eye damage. Mist and vapors may cause mucous membrane and upper respiratory tract irritation with coughing, sore throat and difficulty in breathing. Swallowing may cause burns to the mouth, throat and stomach. May cause reproductive and developmental effects based on animal data.

Indication of immediate medical attention and special treatment, if necessary: Get immediate medical attention for all routes of exposure.

Section 5. Fire-Fighting Measures

Suitable extinguishing media: Use any media appropriate for surrounding fire.

Specific hazards arising from the chemical: Heating above 100°C may result in decomposition and release of carbon dioxide and hydrofluoric acid.

Special protective equipment and precautions for fire-fighters: Firefighters should wear full emergency equipment and NIOSH approved positive pressure self-contained breathing apparatus. Cool exposed intact containers with water spray.

Section 6. Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures: Wear appropriate protective clothing to prevent eye and skin contact. Evacuate and ventilate area.

Environmental hazards: Prevent runoff to storm sewers and ditches leading to natural waterways. Report spill as required by local and federal regulations.

Methods and materials for containment and cleaning up: Collect spilled material with inert material and place into a closable container for disposal. Wash spill area with water.

Section 7. Handling And Storage

Precautions for safe handling: Prevent eye and skin contact. Do not breathe vapors or mists. Use only with adequate ventilation and appropriate protective clothing (See Section 8). Immediately remove and launder contaminated clothing before re-use. Discard contaminated shoes and other items that cannot be decontaminated. Wash thoroughly after handling.

Empty containers retain product residues. Follow all SDS precautions in handling empty containers.

Conditions for safe storage, including any incompatibilities: Store in a cool, well ventilated area away. Do not store above 35°F (95°C). Do not store in containers made of aluminum or zinc. Protect containers from physical damage.

Section 8. Exposure Controls / Personal Protection

Exposure guidelines:

Organic Acid Salt	None Established
Proprietary Ingredient #1	None Established
Proprietary Ingredient #2	None Established
2-Butoxyethanol	50 ppm, skin TWA OSHA PEL 20 ppm TWA ACGIH TLV

Appropriate engineering controls: Good general room ventilation (equivalent to outdoors) should be adequate under normal conditions. If the recommended exposure limit is exceeded increased mechanical ventilation such as local exhaust may be required.

Individual protection measures, such as personal protective equipment:

Respiratory Protection: If the exposure limits are exceeded, an approved full facepiece particulate respirator, supplied air respirator (with escape bottle if required) or self-contained breathing apparatus may be required. Selection of respiratory protection depends on the contaminant type, form and concentration. Select in accordance with OSHA 1910.134 and good Industrial Hygiene practice.

Skin protection: Chemical resistant, impervious gloves are recommended to prevent skin contact.

Eye protection: Wear chemical safety goggles and/or faceshield to prevent eye contact unless a full facepiece respirator is used. Do not wear contact lenses.

Other: Impervious apron, boots and other clothing are recommended if needed to prevent contact or if splashing is possible. A safety shower and an eye wash facility should be available in the immediate work area.

Section 9. Physical And Chemical Properties

Appearance (physical state, color, etc.): Clear liquid

Odor: No odor

Odor threshold: Not available	pH: 1.5
Melting point/freezing point: -10°F (14°C)	Boiling point: 212°F (100°C)
Flash point: Not flammable	Evaporation rate: Same as Water
Flammability (solid, gas): Not applicable	
Flammable limits: LEL: Not applicable	UEL: Not applicable
Vapor pressure: Same as water	Vapor density: Not available
Relative density: 1.063	Solubility in Water: Complete
Partition coefficient: n-octanol/water: Not applicable	Auto-ignition temperature: Not applicable
Decomposition temperature: 212°F (100°C)	Viscosity: Not available

Section 10. Stability And Reactivity

Reactivity: Reacts with metals and acids.

Chemical stability: This material is stable

Possibility of hazardous reactions: Contact with metals and alkalis may release flammable hydrogen gas.

Conditions to avoid: Do not heat above 110°C as this will result in an exothermic decomposition with rapid release of carbon dioxide and hazardous hydrofluoric acid. High concentrations will react with carbonate scales which may carry vapor so care must be taken to avoid inhalation.

Incompatible materials Avoid oxidizing agents, aluminum and zinc. Contact with hypochlorites and alkaline materials may produce toxic gases. Do not mix with dehydrating agents.

Hazardous decomposition products: Thermal decomposition may yield toxic hydrogen fluoride, nitric oxides and ammonia.

Section 11. Toxicological Information

Likely routes of exposure:

Inhalation: Mist and vapors may cause respiratory irritation with coughing and labored breathing. Inhalation of decomposition products may be hazardous.

Skin Contact: Contact may cause severe irritation or burns to the skin. Burns may not be immediately painful or visible. Treat all contact immediately and get medical attention.

Eye Contact: Contact may cause severe irritation or burns with redness, pain and swelling. Permanent damage may occur.

Ingestion: Swallowing may cause irritation of the mouth, throat or stomach.

Chronic Effects Of Overexposure: Organic acid has been shown to cause reproductive and developmental effects based on animal studies.

Sensitization: None of the components are known to cause sensitization in animals or humans.

Reproductive Toxicity: Organic acid has been shown to cause reproductive and developmental effects based on animal studies.

Mutagenicity: None of the components have been found to be mutagenic.

Carcinogenicity: None of the components are listed as a carcinogen or suspect carcinogen by NTP, IARC or OSHA.

Acute Toxicity:

Acute Toxicity Estimate: Oral 5319, Inhalation: 390 mg/L/4 hr

Organic Acid Salt: Oral rat LD50 798.1 mg/kg

2-Butoxyethanol: Oral guinea pig LD50 1414 mg/kg, Skin rabbit LD50 >2000 mg/kg, Inhalation rat LC50 >3.9 mg/L/ 4 hr

Section 12. Ecological Information

Ecotoxicity:

Organic Acid Salt: No data available

2-Butoxyethanol: 96 hr LC50 Oncorhynchus mykiss 1474 mg/L, 48 hr EC50 daphnia magna 1550 mg/L,

Surfactant: 96 LC50 fish 36.9 mg/L, 48 hr EC50 daphnia magna 37.9 mg/L, 72 hr EC50 Pseudokirchnerella subcapitata 911 mg/L

Persistence and degradability: 2-Butoxyethanol is readily biodegradable.

Bioaccumulative potential: No data available.

Mobility in soil: No data available

Other adverse effects: None known.

Section 13. Disposal Considerations

Dispose in accordance with all local, state and federal regulations.

Section 14. Transport Information

	UN Number	Proper shipping name	Hazard Class	Packing Group	Environmental Hazard
DOT	UN1760	Corrosive Liquid n.o.s. (Acid Salts)	8	PG III	
TDG	UN1760	Corrosive Liquid n.o.s. (Acid Salts)	8	PG III	
IMDG	UN1760	Corrosive Liquid n.o.s. (Acid Salts)	8	PG III	
IATA	UN1760	Corrosive Liquid n.o.s. (Acid Salts)	8	PG III	

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not applicable – product is transported only in packaged form.

Special precautions: None Known

Section 15. Regulatory Information

Safety, health, and environmental regulations specific for the product in question.

CERCLA Hazardous Substances (Section 103)/RQ: This product is not subject to CERCLA reporting requirements as it is sold. Many states have more stringent release reporting requirements. Report spills as required under federal, state and local regulations.

EPA SARA 302: This product does not contain chemicals regulated under SARA Section 302.

EPA SARA 311 Hazard Classification: Acute health, Chronic health

EPA SARA 313: This product contains the following chemicals regulated under SARA Title III, section 313:

Glycol Ethers	111-76-2	1-5%
2-Butoxyethanol		

Toxic Substances Control Act: All of the components of this product are listed on the TSCA inventory.

California Proposition 65: This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity:

Methanol	67-56-1	37.5 ppm	developmental
1,4 Dioxane	123-91-1	<0.05 ppm	cancer

Canadian Environmental Protection Act: All of the components of this product are listed on the Canadian Domestic Substances List (DSL).

Section 16. Other Information

NFPA Rating: Health = 3	Flammability = 0	Instability = 0
HMIS Rating: Health = 3*	Flammability = 0	Physical Hazard = 0

SDS Revision History: New Formula, Converted to GHS format, all sections revised.

Date of preparation: July 27, 2015

Date of last revision: May 18, 2011



CSP Light Duty Cleaner

The CSP Light Duty Cleaner is a gel based cleaner intended for the removal of light staining, dirt, and grime on limestone, marble, concrete, plaster, brick and terra cotta. The product is designed for use on buildings and monuments.

Features and Benefits

- **100% Biodegradable**
- **Brush, roll or spray apply**
- **User Friendly**
- **No Acid or Bases**
- **Won't harm glass**
- **Won't kill plants**
- **No on-site chemistry**

Application Procedures

Test Area

Always prepare a test area prior to full application. This will indicate the time required for project completion and suitability of product for effective cleaning of the substrate. Additionally, specific jobsite consumption rates can be calculated after the test area is completed.

Equipment and Tools

This product can be applied by brush, roll or low pressure spray (>300 psi). Natural bristle brushes work well on most surfaces, while $\frac{3}{4}$ " nap rollers can be used for smooth surfaces, such as brick and marble. When spraying is desired an air driven or low voltage pump can be used. Hudson style sprayers are acceptable for small-scale spray applications. Other equipment required: brushes, masking tape, plastic (polyethylene) sheet can be used for protecting surfaces not to be treated with CSP Light Duty Cleaner.

Preparation

MASKING: Cover / protect areas where cleaning is not desired, including adjoining surfaces where over spray may travel. Plastic (polyethylene) sheets make a very effective barrier. While the product will

not affect most aluminum, glass, or painted surfaces, protection is always recommended. Plants should be covered before and during application.

MIXING: Thoroughly mix the CSP Light Duty Cleaner with a drill DO NOT SHAKE. DO NOT DILUTE.

EQUIPMENT: Ensure application equipment is free of any previously applied products or chemicals or solvents.

Application

Apply a thick, even layer of CSP Light Duty Cleaner onto a Surface Saturated Dry (SSD) substrate. A sprayer is the most effective means of application, however rolling on the cleaner will work as well. The minimum wet film thickness should be **5 mils (500 microns)**. When applying Light Duty Cleaner by brush, try to build a thick uniform layer to ensure the product will be effective. If gel begins to dry another coat of CSP Light Duty Cleaner may be applied directly on top of the existing one. If needed a stiff brush can be used to agitate tough stains. Agitation will cause the product to be more effective. **DO NOT ALLOW PRODUCT TO COMPLETELY DRY ON SUBSTRATE.**

Dwell Time

The time required for the CSP Light Duty Cleaner to adequately clean a substrate will vary depending on temperature. Colder temperatures may require a longer dwell time. Typical dwell time is approximately 20 minutes or until the gel begins to dry.

Removal and Cleanup

After allowing the product to dwell, thoroughly rinse the surface with water (pressure washer). Thoroughly clean and lubricate spray equipment per manufacturers instructions. This process should be done soon after the spraying has been completed.

Safety Requirements

Proper safety procedures should be followed at all times while handling this product. Refer to the Safety Data Sheet for important health/safety information before use.

Limitations

Surface temperatures should be 40° to 95°F (5° to 32°C). The product performs effectively at lower temperatures (even at 40°F, 5°C), but the dwell time increases.

Packaging and Coverage

Packaging: Approximately 5 gallons

CSP Light Duty Cleaner

Page 2

The product is engineered for thick film build up on vertical and overhead surfaces. Minimum wet film thickness should be **5 mils (500 microns)**. **Always test the substrate to ensure accurate coverage rates.** Typical coverage rates on a rough porous surface are between 80 and 120 ft sq. ft. per gallon. Coverage rates on a smooth nonporous surface are typically between 350 and 400 sq. ft. per gallon.

Technical Data

Appearance	Thick clear gel
Specific Gravity	1
Flash Point	No applicable
pH	7-8
VOC content	NO

DO NOT ALLOW PRODUCT TO FREEZE!

Notice: The information contained herein is based on our own research and the research of others, and it is provided solely as a service to help users. It is believed to be accurate to the best of our knowledge. However, no guarantee of its accuracy can be made, and it is not intended to serve as the basis for determining this product's suitability in any particular situation. For this reason, purchasers are responsible to make their own tests and assume all risks associated with using this product.

09/2016

CSP Light Duty Cleaner

Safety Data Sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : CSP Light Duty Cleaner

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Manufacturing

1.3. Details of the supplier of the safety data sheet

Cathedral Stone Products
7266 Park Circle Drive
Hanover, MD 21076
T 410-782-9150

1.4. Emergency telephone number

Emergency number : 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Acute Tox. 4 (Oral) H302
Acute Tox. 4 (Dermal) H312
Acute Tox. 4 (Inhalation) H332
Skin Irrit. 2 H315
Eye Irrit. 2A H319
STOT SE 3 H336
STOT SE 2 H371

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Warning

Hazard statements (GHS-US) :

H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
H371 - May cause damage to organs

Precautionary statements (GHS-US) :

P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P312 - If swallowed: Call a poison center/doctor if you feel unwell
P302 + P352 - If on skin: Wash with plenty of water
P304 + P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P312 - Call a poison center/doctor if you feel unwell
P330 - Rinse mouth
P332+P313 - If skin irritation occurs: Get medical advice/attention
P337+P313 - If eye irritation persists: Get medical advice/attention
P362 - Take off contaminated clothing and wash before reuse
P362+P364 - Take off contaminated clothing and wash it before reuse
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P501 - Dispose of contents/container in accordance with local/regional/national/international

CSP Light Duty Cleaner

Safety Data Sheet

regulations.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
2-Butoxyethanol	(CAS No) 111-76-2	10	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311
Disodium EDTA	(CAS No) 139-33-3	< 8	Not classified
Cellulose, 2-hydroxyethyl ether	(CAS No) 9004-62-0	0.5 - 2	Not classified

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Obtain medical attention if breathing difficulty persists.
- First-aid measures after skin contact : Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the affected area with an emollient. Cold water may be used. Wash clothing and thoroughly clean shoes before reuse. Get medical attention immediately.
- First-aid measures after eye contact : Remove contact lenses immediately. Flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
- First-aid measures after ingestion : Do not induce vomiting. Give water to victim to drink. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause respiratory tract irritation. May affect behavior (analgesia), cause headache, drowsiness, disorientation, stuttering, coma, weakness, ataxia, slurred speech, loss of coordination and judgement, personality changes, analgesia, blurred vision, tremor, excitement, somnolence. Prolonged exposure may cause lung hemorrhage, congestion, bronchopneumonia.
- Symptoms/injuries after skin contact : Causes skin irritation. Penetrates intact skin easily and can cause systemic effects and central nervous system depression.
- Symptoms/injuries after eye contact : Causes eye irritation. Exposure to high vapor concentration may also cause corneal or lens opacity of the eyes.
- Symptoms/injuries after ingestion : Causes gastrointestinal tract irritation with nausea, vomiting, diarrhea. Prolonged exposure may affect the liver, blood, urinary system, endocrine system.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

- suitable extinguishing media : Use extinguishing media for surrounding fire.
- Unsuitable extinguishing media : None.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Not flammable.
- Explosion hazard : None known.

5.3. Advice for firefighters

- Protection during firefighting : Firefighters should wear full protective gear.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

CSP Light Duty Cleaner

Safety Data Sheet

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Stop the flow of material, if this is without risk.
- Methods for cleaning up : Confine spill, dilute with water and soak up with absorbent. Place in an approved container and dispose in accordance with local, state and federal regulations.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Do not breathe vapors, gas, fumes or spray. Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Cellulose, 2-hydroxyethyl ether (9004-62-0)

ACGIH : Not applicable

OSHA : Not applicable

Disodium EDTA (139-33-3)

ACGIH : Not applicable

OSHA : Not applicable

2-Butoxyethanol (111-76-2)

ACGIH : ACGIH TWA (ppm) 20 ppm

OSHA : OSHA PEL (TWA) (mg/m³) 240 mg/m³

OSHA : OSHA PEL (TWA) (ppm) 50 ppm

8.2. Exposure controls

- Hand protection : Wear impervious gloves to minimize skin contact.
- Eye protection : Splash goggles.
- Skin and body protection : Wear suitable working clothes.
- Respiratory protection : If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Color : Colorless
- Odor : Ethereal, pleasant
- Odor threshold : No data available
- pH : 7.4
- Melting point : No data available
- Freezing point : No data available
- Boiling point : 90.3 °C
- Flash point : No data available

CSP Light Duty Cleaner

Safety Data Sheet

Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Specific gravity	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: Miscible in water.
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

Will not occur.

10.4. Conditions to avoid

Keep away from heat, sparks and flame.

10.5. Incompatible materials

Oxidizing agents, alkalis.

10.6. Hazardous decomposition products

Not determined.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Disodium EDTA (139-33-3)	
LD50 oral rat	2 g/kg
2-Butoxyethanol (111-76-2)	
LD50 oral rat	470 mg/kg
LD50 dermal rabbit	99 mg/kg
LC50 inhalation rat (ppm)	450 ppm/4h
ATE US (oral)	470.000 mg/kg body weight
ATE US (dermal)	220.000 mg/kg body weight

Skin corrosion/irritation	: Causes skin irritation. pH: 7.4
Serious eye damage/irritation	: Causes serious eye irritation. pH: 7.4
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified

CSP Light Duty Cleaner

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Carcinogenicity : Not classified

2-Butoxyethanol (111-76-2)

IARC group	3 - Not classifiable
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Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Disodium EDTA (139-33-3)

LC50 fish 1	320 mg/l (Exposure time: 96 h - Species: Poecilia reticulata [semi-static])
-------------	-----------------------------------------------------------------------------

2-Butoxyethanol (111-76-2)

LC50 fish 1	1490 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
-------------	-------------------------------------------------------------------------

EC50 Daphnia 1	> 1000 mg/l (Exposure time: 48 h - Species: Daphnia magna)
----------------	------------------------------------------------------------

LC50 fish 2	2950 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)
-------------	----------------------------------------------------------------

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

2-Butoxyethanol (111-76-2)

Log Pow	0.81 (at 25 °C)
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN2810 Toxic, liquids, organic, n.o.s. (Ethylene Glycol Monobutyl Ether), 6.1, III

UN-No.(DOT) : UN2810

DOT Proper Shipping Name : Toxic, liquids, organic, n.o.s.
(Ethylene Glycol Monobutyl Ether)

Department of Transportation (DOT) Hazard Classes : 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132

Hazard labels (DOT) : 6.1 - Poison inhalation hazard



CSP Light Duty Cleaner

Safety Data Sheet

Packing group (DOT)	: III - Minor Danger
DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 241
DOT Symbols	: G - Identifies PSN requiring a technical name
DOT Special Provisions (49 CFR 172.102)	: IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672). T7 - 4 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling. TP28 - A portable tank having a minimum test pressure of 2.65 bar (265 kPa) may be used provided the calculated test pressure is 2.65 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 153
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 220 L
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.
DOT Vessel Stowage Other	: 40 - Stow "clear of living quarters"

SECTION 15: Regulatory information

15.1. US Federal regulations

Cellulose, 2-hydroxyethyl ether (9004-62-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Disodium EDTA (139-33-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

2-Butoxyethanol (111-76-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. US State regulations

2-Butoxyethanol (111-76-2)

U.S. - Massachusetts - Right To Know List
U.S. - Minnesota - Hazardous Substance List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Full text of H-phrases::

Acute Tox. 3 (Dermal)	Acute toxicity (dermal) Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 4	Flammable liquids Category 4
Skin Irrit. 2	Skin corrosion/irritation Category 2
H227	Combustible liquid
H302	Harmful if swallowed
H311	Toxic in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product



CSP Heavy Duty Cleaner

The CSP Heavy Duty Cleaner is a safe gel based cleaner intended for the removal of severe black carbon staining, dirt, and grime on sandstone, unpolished granite, brick, concrete and brownstone. **When using on limestone, marble or any calcareous stone limit dwell times to 10-15 minutes.** The product is designed for exterior use on buildings and monuments.

Features and Benefits

- Biodegradable
- Short dwell time
- Gel clings to vertical surfaces
- Brush, roll or spray apply
- User friendly
- No on-site mixing

Application Procedures

Test Area

Always prepare a test area prior to full application. This will indicate the time required for project completion and suitability of product for effective cleaning of the substrate. Additionally, specific jobsite consumption rates can be calculated after the test area is completed.

Equipment and Tools

This product can be applied by brush, roll or low-pressure spray (>300 psi). Natural bristle brushes work well on most surfaces while ¾" nap rollers can be used for smooth surfaces such as brick and marble. When spraying is desired an air driven or low voltage pump can be used. Hudson style sprayers are acceptable for small-scale spray applications. Other equipment required: brushes, masking tape, plastic (polyethylene) sheet, can be used for protecting surfaces not to be treated with CSP Heavy Duty Cleaner.

Preparation

MASKING: Cover / protect areas where cleaning is not desired, including adjoining surfaces where over

spray may travel. Plastic (polyethylene) sheets make a very effective barrier. **The CSP Heavy Duty Cleaner will harm most aluminum and some glass surfaces. Protection is required!** Plants should be covered before and during the application. **MIXING:** If the product appears to have separated, thoroughly mix the CSP Heavy Duty Cleaner with a drill until it becomes homogeneous once again. **DO NOT SHAKE. DO NOT DILUTE.**

Application

Apply a thick, even layer of Heavy Duty Cleaner onto a Surface Saturated Dry (SSD) substrate. A sprayer is the most effective means of application, however rolling on the cleaner will work as well. The minimum wet film thickness should be 5 mils. When applying Heavy Duty Cleaner by brush, the agitation will cause the product to be more effective. If gel begins to dry another coat of the cleaner may be applied directly on top of the existing one. If needed a stiff brush can be used to agitate tough stains. **DO NOT ALLOW PRODUCT TO COMPLETELY DRY ON SUBSTRATE.** If product begins to dry mist the substrate with water in a way that adds moisture but does not wash the cleaner off.

Dwell Time

The time required for the CSP Heavy Duty Cleaner to adequately clean a substrate is approximately 5-45 minutes. Apply test panels to determine the dwell time prior to full application of product. **DO NOT ALLOW TO DRY ON SUBSTRATE.**

Removal and Cleanup

After allowing the product to dwell, rinse the surface with copious amounts water (pressure washer). Rinse the substrate well to ensure all cleaner residue is removed. Thoroughly clean and lubricate spray equipment per manufacturers instructions. This process should be done soon after the spraying has been completed

Safety Requirements

Proper safety procedures should be followed at all times while handling this product. Refer to the Material Safety Data Sheet for important health/safety information before use. CSP Heavy Duty Cleaner is an acidic gel. It is essential to wear protective clothing and glasses while using this product.

Limitations

Surface temperatures should be 40° to 95°F (5° to 32°C). The product performs effectively at lower temperatures (even at 40°F, 5°C), but the dwell time increases.

Packaging and Coverage

Packaging: Approximately 5 gallons

The product is engineered for thick film build up on vertical and overhead surfaces. Minimum wet film thickness should be 5 mils. **Always test the substrate to ensure accurate coverage rates.**

Typical coverage rates on a rough porous surface are between 80 and 120 sq. ft. per gallon. Coverage rates on a smooth nonporous surface are typically between 350 and 400 sq. ft. per gallon

Technical Data

Appearance	Clear to light yellow liquid
Specific Gravity	1
Boiling Point	97.2
pH	4.3
VOC content	N/A

DO NOT ALLOW PRODUCT TO FREEZE!

Notice: The information contained herein is based on our own research and the research of others, and it is provided solely as a service to help users. It is believed to be accurate to the best of our knowledge. However, no guarantee of its accuracy can be made, and it is not intended to serve as the basis for determining this product's suitability in any particular situation. For this reason, purchasers are responsible to make their own tests and assume all risks associated with using this product.

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CSP Heavy Duty Cleaner

Safety Data Sheet

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name : CSP Heavy Duty Cleaner

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Manufacturing

1.3. Details of the supplier of the safety data sheet

Cathedral Stone Products
7266 Park Circle Drive
Hanover, MD 21076
T 410-782-9150

1.4. Emergency telephone number

Emergency number : 1-800-424-9300

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Acute Tox. 4 (Oral) H302
Acute Tox. 4 (Inhalation) H332
Skin Corr. 1B H314
Eye Dam. 1 H318

Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05



GHS07

Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H302+H332 - Harmful if swallowed or if inhaled
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage

Precautionary statements (GHS-US) :

P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P301 + P312 - If swallowed: Call a poison center/doctor if you feel unwell
P301 + P330 + P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P303 + P361 + P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304 + P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a poison center/doctor
P312 - Call a poison center/doctor if you feel unwell
P330 - Rinse mouth
P363 - Wash contaminated clothing before reuse
P405 - Store locked up
P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Other hazards

No additional information available

CSP Heavy Duty Cleaner

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2.4. Unknown acute toxicity (GHS-US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Ammonium bifluoride	(CAS No) 1341-49-7	< 8	Acute Tox. 3 (Oral), H301 Skin Corr. 1B, H314 Eye Dam. 1, H318
Hydrochloric acid	(CAS No) 7647-01-0	< 4	Acute Tox. 3 (Inhalation:gas), H331 Skin Corr. 1A, H314
Cellulose, 2-hydroxyethyl ether	(CAS No) 9004-62-0	0.5 - 2	Not classified

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Obtain medical attention if breathing difficulty persists.
First-aid measures after skin contact	: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the affected area with an emollient. Cold water may be used. Wash clothing and thoroughly clean shoes before reuse. Get medical attention immediately.
First-aid measures after eye contact	: Remove contact lenses immediately. Flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
First-aid measures after ingestion	: Do not induce vomiting. Give water to victim to drink. Seek medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	: May be fatal if inhaled. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract. Inhalation of hydrochloric acid fumes produces nose, throat, and laryngeal burning, coughing, sneezing, choking sensation, hoarseness, as well as headache and palpitations.
Symptoms/injuries after skin contact	: Causes severe skin irritation and burns.
Symptoms/injuries after eye contact	: Causes severe eye irritation/conjunctivitis, burns, corneal necrosis.
Symptoms/injuries after ingestion	: May be fatal if swallowed. Causes irritation and burning, ulceration, or perforation of the gastrointestinal tract, nausea, vomiting, and diarrhea.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Use extinguishing media for surrounding fire.
Unsuitable extinguishing media	: None.

5.2. Special hazards arising from the substance or mixture

Fire hazard	: Not flammable.
Explosion hazard	: None known.

5.3. Advice for firefighters

Protection during firefighting	: Firefighters should wear full protective gear.
--------------------------------	--------------------------------------------------

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid release to the environment.

CSP Heavy Duty Cleaner

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6.3. Methods and material for containment and cleaning up

- For containment : Stop the flow of material, if this is without risk.
- Methods for cleaning up : Confine spill and soak up with absorbent. Place in an approved container and dispose in accordance with local, state and federal regulations.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Do not breathe gas, fumes, vapors, or spray. Do not ingest. Avoid contact with skin and eyes. Never add water to this product.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep container tightly closed and in a cool, well-ventilated area. Store in a metallic or coated fiberboard drum using a strong polyethylene inner package.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Hydrochloric acid (7647-01-0)		
ACGIH	ACGIH Ceiling (ppm)	2 ppm
OSHA	OSHA PEL (Ceiling) (mg/m ³)	7 mg/m ³
OSHA	OSHA PEL (Ceiling) (ppm)	5 ppm
Ammonium bifluoride (1341-49-7)		
ACGIH	Not applicable	
OSHA	Not applicable	
Cellulose, 2-hydroxyethyl ether (9004-62-0)		
ACGIH	Not applicable	
OSHA	Not applicable	

8.2. Exposure controls

- Hand protection : Wear impervious gloves to minimize skin contact.
- Eye protection : Splash goggles.
- Skin and body protection : Wear suitable working clothes.
- Respiratory protection : If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
- Color : Colorless to light yellow.
- Odor : Pungent, irritating
- Odor threshold : No data available
- pH : 4.3
- Melting point : <-20 °C
- Freezing point : No data available
- Boiling point : 97.2 °C
- Flash point : No data available
- Relative evaporation rate (butyl acetate=1) : No data available
- Flammability (solid, gas) : No data available
- Explosion limits : No data available
- Explosive properties : No data available

CSP Heavy Duty Cleaner

Safety Data Sheet

Oxidizing properties	: No data available
Vapor pressure	: No data available
Specific gravity	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: Soluble
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

The product is stable at normal handling and storage conditions.

10.3. Possibility of hazardous reactions

Will not occur.

10.4. Conditions to avoid

None

10.5. Incompatible materials

Metal, oxidizing agents, organic materials, alkalis, water.

10.6. Hazardous decomposition products

Not determined

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed. Inhalation: Harmful if inhaled.

MasonRE G	
ATE US (oral)	1625.000 mg/kg body weight
ATE US (gases)	4500.000 ppmV/4h
ATE US (vapors)	11.000 mg/l/4h
ATE US (dust, mist)	1.500 mg/l/4h
Hydrochloric acid (7647-01-0)	
LD50 oral rat	238 - 277 mg/kg
LD50 dermal rabbit	> 5010 mg/kg
LC50 inhalation rat (mg/l)	1.68 mg/l (Exposure time: 1 h)
ATE US (gases)	781.000 ppmV/4h
Ammonium bifluoride (1341-49-7)	
LD50 oral rat	130 mg/kg
ATE US (oral)	130.000 mg/kg body weight

Skin corrosion/irritation	: Causes severe skin burns and eye damage. pH: 4.3
Serious eye damage/irritation	: Causes serious eye damage. pH: 4.3
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified

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Carcinogenicity : Not classified

Hydrochloric acid (7647-01-0)

IARC group : 3 - Not classifiable

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Ammonium bifluoride (1341-49-7)

BCF fish 1 : (completely dissociated in water)

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN1789 Hydrochloric acid, 8, II

UN-No.(DOT) : UN1789

DOT Proper Shipping Name : Hydrochloric acid

Department of Transportation (DOT) Hazard Classes : 8 - Class 8 - Corrosive material 49 CFR 173.136

Hazard labels (DOT) : 8 - Corrosive



Packing group (DOT) : II - Medium Danger

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202

DOT Packaging Bulk (49 CFR 173.xxx) : 242

CSP Heavy Duty Cleaner

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DOT Special Provisions (49 CFR 172.102)	: A3 - For combination packaging, if glass inner packaging (including ampoules) are used, they must be packed with absorbent material in tightly closed metal receptacles before packing in outer packaging. A6 - For combination packaging, if plastic inner packaging are used, they must be packed in tightly closed metal receptacles before packing in outer packaging. B3 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks and DOT 57 portable tanks are not authorized. B15 - Packaging must be protected with non-metallic linings impervious to the lading or have a suitable corrosion allowance. IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized. N41 - Metal construction materials are not authorized for any part of a packaging which is normally in contact with the hazardous material. T8 - 4 178.274(d)(2) Normal..... Prohibited TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively. TP12 - This material is considered highly corrosive to steel.
DOT Packaging Exceptions (49 CFR 173.xxx)	: 154
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 1 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 30 L
DOT Vessel Stowage Location	: C - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel.

SECTION 15: Regulatory information

15.1. US Federal regulations

Hydrochloric acid (7647-01-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on SARA Section 302 (Specific toxic chemical listings)	
Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 302 Threshold Planning Quantity (TPQ)	500 (gas only)
SARA Section 313 - Emission Reporting	1.0 % (acid aerosols including mists, vapors, gas, fog, and other airborne forms of any particle size)
Ammonium bifluoride (1341-49-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Cellulose, 2-hydroxyethyl ether (9004-62-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2. US State regulations

Hydrochloric acid (7647-01-0)	
U.S. - Massachusetts - Right To Know List	
U.S. - Minnesota - Hazardous Substance List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
Ammonium bifluoride (1341-49-7)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	

CSP Heavy Duty Cleaner

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SECTION 16: Other information

Full text of H-phrases::

Acute Tox. 3 (Inhalation:gas)	Acute toxicity (inhalation:gas) Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
Skin Corr. 1B	Skin corrosion/irritation Category 1B
H301	Toxic if swallowed
H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H331	Toxic if inhaled
H332	Harmful if inhaled

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product



PROSOCO®

Sure Klean®

CLEANING & PROTECTIVE TREATMENTS

766 Limestone & Masonry Prewash

Sure Klean® 766 Limestone & Masonry Prewash is a strong alkaline-based cleaning compound formulated for use with Sure Klean® Restoration Cleaner, Limestone & Masonry Afterwash or Limestone Restorer. When used properly, the prewash dissolves and assists in removing heavy carbon encrustations from brick, terra cotta, sandstone, limestone and most other masonry.

Old masonry in high-pollution areas is often blackened by deep-seated carbon and mildew stains. Many of these stains are impervious to standard acidic-based cleaning compounds. Sure Klean® 766 Limestone & Masonry Prewash provides the extra chemical ingredients necessary to clean extremely dirty masonry surfaces.

ADVANTAGES

- Cleans the dirtiest masonry surfaces without sandblasting or extensive labor.
- Ideal for spot-treating heavily stained areas, such as horizontal surfaces under window sills, eaves, etc., where carbon and mildew stains are most severe.
- Does not damage or alter masonry surfaces.
- Easy to apply with brush or roller.
- Will not damage glass.

Limitations

- Treated surfaces must be neutralized with Sure Klean® Limestone & Masonry Afterwash, Restoration Cleaner or Limestone Restorer.
- Extended contact may damage polished marble and polished limestone.
- May damage wood, metal and painted surfaces.

REGULATORY COMPLIANCE

VOC Compliance

Sure Klean® 766 Limestone & Masonry Prewash is compliant with all national, state and district VOC regulations.

TYPICAL TECHNICAL DATA

FORM	Colorless gel liquid Soap odor
SPECIFIC GRAVITY	1.274
pH	13.6 @ 1:5 dilution
WT/GAL	10.6 lbs
ACTIVE CONTENT	not applicable
TOTAL SOLIDS	not applicable
VOC CONTENT	not applicable
FLASH POINT	not applicable
FREEZE POINT	28° F (-2° C)
SHELF LIFE	2 years in tightly sealed, unopened container

SAFETY INFORMATION

Always read full label and SDS for precautionary instructions before use. Use appropriate safety equipment and job site controls during application and handling.

24-Hour Emergency Information:
INFOTRAC at 800-535-5053

Product Data Sheet

Sure Klean® 766 Limestone & Masonry Prewash

PREPARATION

Protect people, vehicles, property, plants, wood, electric and all non masonry surfaces from product, splash, residue, wind drift and fumes. Product may corrode some metals, will darken and damage wood surfaces and will attack and remove paint coatings. Protect and/or divert auto and pedestrian traffic.

Surface and Air Temperatures

Cleaning effectiveness is reduced where surface and air temperature fall below 50° F (10° C). Do not apply at temperatures below 40°F (4°C). If freezing conditions exist before application, let masonry thaw.

Equipment

Apply with deep-napped synthetic roller or nylon brush. Do not use natural fiber.

Recommended for these substrates. Always test. Coverage is in sq.ft./m. per gallon of concentrate.			
Substrate	Type	Use?	Coverage
Architectural Concrete Block	Burnished	yes	75–125 sq.ft. 7–12 sq.m.
	Smooth	yes	
	Split-faced	yes	
	Ribbed	yes	
Concrete	Brick	yes	75–150 sq.ft. 7–14 sq.m.
	Tile	yes	
	Precast Panels	yes	
	Pavers	yes	
Fired Clay	Cast-in-place	yes	
	Brick	yes	75–150 sq.ft. 7–14 sq.m.
	Tile	yes	
	Terra Cotta (unglazed)	yes	
	Pavers	yes	
Marble, Travertine, Limestone	Polished	no	N/A
	Unpolished	yes	75–150 sq.ft. 7–14 sq.m.
Granite	Polished	yes	100–200 sq.ft. 9–19 sq.m.
	Unpolished	yes	100–175 sq.ft. 9–16 sq.m.
Sandstone	Unpolished	yes	75–150 sq.ft. 7–14 sq.m.
Slate	Unpolished	yes	75–175 sq.ft. 7–16 sq.m.
Repeated applications may damage some surfaces. Always test to ensure desired results. Coverage estimates depend on surface texture and porosity.			

Product can be applied with many conventional mechanical sprayers. Sprayers should be equipped with viton, teflon or other caustic-resistant seals and parts. Spray hose should be poly-lined, chemical-resistant and pressure-rated for the spray. Spray tips should have a minimum orifice size of 1/4 inch to prevent tip-fouling. Adjust sprayer to lowest pressure setting to produce an even flow of material.

Do not place in aluminum containers or spray equipment.

For most efficient spray application, use large, airless sprayer with a minimum capacity of 1 gallon per minute. Product may be diluted with water to facilitate spray application.

Rinse with enough water and pressure to flush spent cleaner and dissolved soiling from the masonry surface and surface pores without damage. Inadequate rinsing leaves residues which may stain the cleaned surface.

Masonry-washing equipment generating 400–1000 psi with a water flow rate of 6–8 gallons per minute is the best water/pressure combination for rinsing porous masonry. Use a 15–45° fan spray tip. Heated water (150–180° F [65–82° C]) may improve cleaning efficiency. Use adjustable equipment for reducing water flow-rates and rinsing pressure as needed for sensitive surfaces.

Rinsing pressures greater than 1000 psi and fan spray tips smaller than 15° may permanently damage sensitive masonry. Water flow-rates less than 6 gallons per minute may reduce cleaning productivity and contribute to uneven cleaning results.

Storage and Handling

Store in a cool, dry place with adequate ventilation. Always seal container after dispensing. Do not alter or mix with other chemicals. Published shelf life assumes upright storage of factory-sealed containers in a dry place. Maintain temperature of 45–100° F (7–38° C). Do not double stack pallets. Dispose of unused product and container in accordance with local, state and federal regulations.

Product Data Sheet

Sure Klean® 766 Limestone & Masonry Prewash

APPLICATION

Read "Preparation" and the Safety Data Sheet before use.

ALWAYS TEST a small area of each surface to confirm suitability and desired results before beginning overall application. Test each type of masonry and each type of stain. Test with the same equipment, recommended surface preparation and application procedures planned for general application. Let test area dry 3–7 days before inspection and approval. Make the test panel available for comparison throughout the cleaning project.

Dilution

Use in concentrate during initial testing. If test panels with concentrated material are cleaned effectively, additional tests may be conducted diluting 766 Limestone & Masonry Prewash with up to 3 parts water.

Application Instructions

1. Always prewet the surface with clean water, working from the bottom to the top.
2. Apply a heavy coating of 766 Limestone & Masonry Prewash to the surface from the bottom of the work area up using a brush or roller.
3. Let the product dwell on the surface 30 minutes to 2 hours. *NOTE:* Longer dwell times may be required with lower temperatures. Do not let material dry on surface.
4. Working from the bottom of the work area to the top, pressure rinse, making sure to flush each portion of the masonry surface with concentrated water pressure. If pressure-water rinsing

equipment is not available, reapply 766 Limestone & Masonry Prewash and scrub vigorously with stiff-bristled brush or scrubbing pad. Rinse thoroughly with fresh water.

Cleanup

Clean tools and equipment using fresh water.

Surface Neutralization

Treated surfaces must be neutralized. Failure to properly neutralize treated surfaces with the proper cleaning compound results in an alkaline residue that may cause unsightly white haze and interfere with adhesion of clear sealers or paint coatings.

The second wash down with the appropriate Sure Klean® cleaner is always necessary to completely restore the surface and to neutralize any 766 Limestone & Masonry Prewash which may still be in the surface. The Prewash penetrates into the masonry, and failure to remove the cleaner will result in an unsightly detergent residue.

Application of Sure Klean® Limestone & Masonry Afterwash, Sure Klean® Restoration Cleaner or Sure Klean® Limestone Restorer ensures complete removal of 766 Limestone & Masonry Prewash.

Brick, Terra Cotta, Sandstone and Other Masonry
Immediately apply a solution of Sure Klean® Restoration Cleaner, following the instructions on the product label.

Limestone, Cast Stone, Stucco and Cementitious Materials

Immediately apply a solution of Sure Klean® Limestone & Masonry Afterwash or Sure Klean® Limestone Restorer, following the instructions on the product label.

BEST PRACTICES

Apply with deep-napped synthetic roller or nylon brush. Do not use natural fiber.

Product can be applied with many conventional mechanical sprayers. Sprayers should be equipped with caustic-resistant seals and parts. Spray hose should be poly-lined, chemical-resistant and pressure-rated for the spray. Spray tips should have a minimum orifice size of 1/4 inch to prevent tip-fouling. Do not place in aluminum containers or spray equipment. Adjust sprayer to lowest pressure setting to produce an even flow of material.

Use in concentrate during initial testing. If test panels with concentrated material are cleaned effectively, additional tests may be run diluted with up to 3 parts water to 1 part concentrate.

Treated surfaces must be neutralized. Failure to properly clean and neutralize treated surfaces with the proper cleaning compound results in an alkaline residue that may cause unsightly white haze and interfere with adhesion of clear sealers or paint coatings.

Never go it alone. For problems or questions, contact your local PROSOCO distributor or field representative. Or call PROSOCO technical Customer Care toll-free at 800-255-4255.

Product Data Sheet

Sure Klean® 766 Limestone & Masonry Prewash

WARRANTY

The information and recommendations made are based on our own research and the research of others, and are believed to be accurate. However, no guarantee of their accuracy is made because we cannot cover every possible application of our products, nor anticipate every variation encountered in masonry surfaces, job conditions and methods used. The purchasers shall make their own tests to determine the suitability of such products for a particular purpose.

PROSOCO, Inc. warrants this product to be free from defects. **Where permitted by law, PROSOCO makes no other warranties with respect to this product, express or implied, including without limitation the implied warranties of merchantability or fitness for particular purpose.** The purchaser shall be responsible to make his own tests to determine the suitability of this product for his particular purpose. PROSOCO's liability shall be limited in all events to supplying sufficient product to re-treat the specific areas to which defective

product has been applied. Acceptance and use of this product absolves PROSOCO from any other liability, from whatever source, including liability for incidental, consequential or resultant damages whether due to breach of warranty, negligence or strict liability. This warranty may not be modified or extended by representatives of PROSOCO, its distributors or dealers.

CUSTOMER CARE

Factory personnel are available for product, environment and job-safety assistance with no obligation. Call 800-255-4255 and ask for Customer Care – technical support.

Factory-trained representatives are established in principal cities throughout the continental United States. Call Customer Care at 800-255-4255, or visit our web site at www.prosoco.com, for the name of the PROSOCO representative in your area.



SAFETY DATA SHEET

PROSOCO, Inc.



Issue Date 26-Nov-2014

Revision Date 26-Nov-2014

Version 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Sure Klean® 766 Limestone & Masonry Prewash

Other means of identification

Product Code 20035
UN/ID No UN3266

Recommended use of the chemical and restrictions on use

Recommended Use Restricted to professional users.
Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address
PROSOCO, Inc.
3741 Greenway Circle
Lawrence, Kansas 66046

Emergency telephone number

8:00 AM – 5:00 PM CST Monday-Friday 785-865-4200
NON-BUSINESS HOURS (INFOTRAC) 800-535-5053

2. HAZARDS IDENTIFICATION

Classification

Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1

Label elements

Emergency Overview

Danger

Hazard statements

Causes severe skin burns and eye damage



Appearance gel

Physical state gel Liquid

Odor Soap

Precautionary Statements - Prevention

Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)**Other Information**

1.8994% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Water	7732-18-5	60 - 100	*
Sodium Hydroxide	1310-73-2	10 - 30	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES**First aid measures**

General advice	Immediate medical attention is required.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Immediate medical attention is required.
Skin Contact	Immediate medical attention is required. Wash off immediately with plenty of water while removing contaminated clothing and shoes. Call a physician.
Inhalation	Remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a physician or poison control center immediately.
Ingestion	Drink plenty of water. Do NOT induce vomiting. Remove from exposure, lie down. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.
Self-protection of the first aider	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms Causes severe burns.

Indication of any immediate medical attention and special treatment needed

Note to physicians Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Dam up. Prevent product from entering drains. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Keep out of the reach of children.

Incompatible materials Incompatible with strong acids and bases. Incompatible with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium Hydroxide 1310-73-2	Ceiling: 2 mg/m ³	TWA: 2 mg/m ³ (vacated) Ceiling: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³

NIOSH IDLH *Immediately Dangerous to Life or Health*

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Wash contaminated clothing before reuse. When using do not eat, drink or smoke. Keep away from food, drink and animal feeding stuffs. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	gel Liquid	Odor	Soap
Appearance	gel	Odor threshold	No information available
Color	colorless		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	13.6	@ 1:5 Dilution
Melting point/freezing point	-2 °C / 28 °F	
Boiling point/boiling range	No information available	
Flash point		Not Applicable
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	

Flammability Limits in Air

Upper flammability limits	No information available
Lower flammability limit	No information available
Vapor pressure	No information available
Vapor density	No information available
Specific Gravity	1.274
Water solubility	completely soluble
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Explosive properties	Not Applicable
Oxidizing properties	Not Applicable

10. STABILITY AND REACTIVITY**Reactivity**

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Product Information	Corrosive Harmful by inhalation, in contact with skin and if swallowed
Inhalation	Avoid breathing vapors or mists. Harmful by inhalation.
Eye contact	Corrosive to the eyes and may cause severe damage including blindness.
Skin Contact	Corrosive. Causes severe burns.
Ingestion	Harmful if swallowed. Can burn mouth, throat, and stomach.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Sodium Hydroxide 1310-73-2	-	= 1350 mg/kg (Rabbit)	-

Information on toxicological effects

Symptoms The product causes burns of eyes, skin and mucous membranes.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
Germ cell mutagenicity No information available.
Carcinogenicity This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Chronic toxicity Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.
Target Organ Effects Eyes, Respiratory system, Skin.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 1.8994% of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document . mg/kg
ATEmix (dermal) 5765 mg/kg mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Sodium Hydroxide 1310-73-2	-	45.4: 96 h Oncorhynchus mykiss mg/L LC50 static	-	-

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS**Waste treatment methods**

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

US EPA Waste Number D002

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT	Regulated
UN/ID No	UN3266
Proper shipping name	Corrosive liquid, basic, inorganic, n.o.s. (Sodium Hydroxide)
Hazard Class	8
Packing Group	II

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium Hydroxide 1310-73-2	1000 lb	-	-	X

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Sodium Hydroxide 1310-73-2	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
N,N-Diethanolamine - 111-42-2	Carcinogen
Benzene - 71-43-2	Carcinogen Developmental Male Reproductive
Toluene - 108-88-3	Developmental Female Reproductive

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Sodium Hydroxide 1310-73-2	X	X	X

16. OTHER INFORMATION

NFPA	Health hazards 3	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 3	Flammability 0	Physical hazards 0	Personal protection X

Prepared By Regulatory Department
Issue Date 26-Nov-2014
Revision Date 26-Nov-2014
Revision Note

No information available

Disclaimer

The information contained on the Material Safety Data Sheet has been compiled from data considered accurate. This data is believed to be reliable, but it must be pointed out that values for certain properties are known to vary from source to source. PROSOCO, Inc. expressly disclaims any warranty express or implied as well as any liability for any injury or loss arising from the use of this information or the materials described. This data is not to be construed as absolutely complete since additional data may be desirable when particular conditions or circumstances exist. It is the responsibility of the user to determine the best precautions necessary for the safe handling and use of this product for his unique application. This data relates only to the specific material designated and is not to be used in combination with any other material. Many federal and state regulations pertain directly or indirectly to the product's end use and disposal of containers and unused material. It is the purchaser's responsibility to familiarize himself with all applicable regulations.

End of Safety Data Sheet



PROSOCO®

Sure Klean®

CLEANING & PROTECTIVE TREATMENTS

942 Limestone & Marble Cleaner

Sure Klean® 942 Limestone & Marble Cleaner is a ready-to-use non-acidic cleaning gel. Designed for removing moderate-to-severe atmospheric staining, this low-odor gel cleaner is appropriate for use on exterior or interior masonry surfaces. Safe for use on most polished or unpolished marble and limestone surfaces, 942 Limestone & Marble Cleaner removes surface and subsurface staining, restoring surfaces to their original appearance.

Sure Klean® 942 Limestone & Marble Cleaner dissolves damaging gypsum (calcium sulfate dihydrate) and related atmospheric staining, enabling removal in a safe, controlled manner with a simple water rinse. Special detergents and chelating agents in this easy-to-use product improve the cleaning characteristics of the gel.

When applied to soiled masonry surfaces, 942 Limestone & Marble Cleaner solubilizes oil, dirt, harmful salts and other deep-seated stains. Following a 2 to 24-hour dwell period, the solubilized staining matters are carefully removed with the gel and the treated surfaces flushed with fresh water to restore their natural appearance. No abrasive action is required. Sure Klean® 942 Limestone & Marble Cleaner's gel consistency is suitable for brush or spray application.

SAFETY INFORMATION

Always read full label and SDS for precautionary instructions before use. Use appropriate safety equipment and job site controls during application and handling.

24-Hour Emergency Information:
INFOTRAC at 800-535-5053

ADVANTAGES

- Thoroughly cleans without danger of bleaching.
- Restores the color and surface texture of most polished and unpolished stonework.

- A safe, low-odor, non-acidic cleaning system suitable for interior or exterior applications.
- Will not damage most flooring materials and adjoining surfaces.
- Gel consistency prevents dripping and spilling. Material "clings" to vertical surfaces.

Limitations

- May damage highly polished limestone or marble surfaces. Always test.
- Not for use in subfreezing temperatures. Gel will freeze.
- Surface and air temperatures should be at least 50° F (10° C). Cold temperatures will adversely affect the product's cleaning properties.

REGULATORY COMPLIANCE

VOC Compliance

Sure Klean® 942 Limestone & Marble Cleaner is compliant with all national, state and district VOC regulations.

TYPICAL TECHNICAL DATA

FORM	Clear amber gel Slight ammonia odor
SPECIFIC GRAVITY	1.040
pH	8.3
WT/GAL	8.65 lbs
ACTIVE CONTENT	not applicable
TOTAL SOLIDS	not applicable
VOC CONTENT	not applicable
FLASH POINT	>200° F (>93° C)
FREEZE POINT	25° F (-4° C) ASTM D 1177
SHELF LIFE	2 years in tightly sealed, unopened container

Product Data Sheet

Sure Klean® 942 Limestone & Marble Cleaner

PREPARATION

Protect people, vehicles, property and all non masonry surfaces from product, splash, residue, fumes and wind drift. Protect plants and painted surfaces with polyethylene or other proven protective material. Protect/divert auto and foot traffic.

Surface and Air Temperatures

Best cleaning results are obtained when air and masonry surface temperatures are 40° F (4° C) or above. Cleaning when temperatures are below freezing or will be overnight may harm masonry. If freezing conditions have existed, let masonry thaw.

Equipment

Apply with a soft-bristled brush or airless sprayer.
Rinse with a sponge or pressure-rinsing equipment.

Recommended for these substrates. Always test. Coverage is in sq.ft./m. per gallon of concentrate.			
Substrate	Type	Use?	Coverage
Architectural Concrete Block	Burnished	yes	75–125 sq.ft. 7–12 sq.m.
	Smooth	yes	
	Split-faced	yes	
	Ribbed	yes	
Concrete	Brick	yes	75–150 sq.ft. 7–14 sq.m.
	Tile	yes	
	Precast Panels	yes	
	Pavers	yes	
	Cast-in-place	yes	
Fired Clay	Brick	yes	75–150 sq.ft. 7–14 sq.m.
	Tile	yes	
	Terra Cotta (unglazed)	yes	
	Pavers	yes	
Marble, Travertine, Limestone	Polished	yes	100–200 sq.ft. 9–19 sq.m.
	Unpolished	yes	75–150 sq.ft. 7–14 sq.m.
Granite	Polished	yes	100–200 sq.ft. 9–19 sq.m.
	Unpolished	yes	100–175 sq.ft. 9–16 sq.m.
Sandstone	Unpolished	yes	75–150 sq.ft. 7–14 sq.m.
Slate	Unpolished	yes	75–175 sq.ft. 7–16 sq.m.
Always test to ensure desired results. Coverage estimates depend on surface texture and porosity.			

Storage and Handling

Store in a cool, dry place. Always seal container after dispensing. Do not alter or mix with other chemicals. Published shelf life assumes upright storage of factory-sealed containers in a dry place. Maintain temperature of 45–100° F (7–38° C). Keep from freezing. Do not double stack pallets. Dispose of in accordance with local, state and federal regulations.

APPLICATION

Read “Preparation” and the Safety Data Sheet before use.

ALWAYS TEST a small area of each surface to confirm suitability and desired results before beginning overall application. Test each type of masonry and each type of stain. Test with the same equipment, recommended surface preparation and application procedures planned for general application. Let test area dry 3–7 days before inspection and approval. Make the test panel available for comparison throughout the cleaning project.

Dilution

Apply as packaged. Do not dilute or alter.

Stir or mix well before use.

Application Instructions

1. Apply a thick, uniform coating of 942 Limestone & Marble Cleaner to the surface using a brush or airless spray equipment.
2. Let the cleaner stay on the surface for 2–24 hours. *For long dwell periods*, it may be necessary to cover treated areas with polyethylene to prevent premature drying. **NOTE:** The appropriate dwell period for safe, effective cleaning should be determined through on-site testing, before full-scale cleaning operations.
3. Remove the gel and as much residue from the surface as possible. Rinse the surface thoroughly with fresh water using a sponge, soft cloth or low-pressure/low-volume water rinsing equipment.
4. Repeat application where necessary.

Cleanup

Clean tools and equipment using fresh water.

Maintenance

The freshly cleaned surface may be polished or sealed using appropriate products. No special procedure or treatment is necessary.

Product Data Sheet

Sure Klean® 942 Limestone & Marble Cleaner

WARRANTY

The information and recommendations made are based on our own research and the research of others, and are believed to be accurate. However, no guarantee of their accuracy is made because we cannot cover every possible application of our products, nor anticipate every variation encountered in masonry surfaces, job conditions and methods used. The purchasers shall make their own tests to determine the suitability of such products for a particular purpose.

PROSOCO, Inc. warrants this product to be free from defects. **Where permitted by law, PROSOCO makes no other warranties with respect to this product, express or implied, including without limitation the implied warranties of merchantability or fitness for particular purpose.** The purchaser shall be responsible to make his own tests to determine the suitability of this product for his particular purpose. PROSOCO's liability shall be limited in all events to supplying sufficient product to re-treat the specific areas to which defective product has been applied. Acceptance and use of

this product absolves PROSOCO from any other liability, from whatever source, including liability for incidental, consequential or resultant damages whether due to breach of warranty, negligence or strict liability. This warranty may not be modified or extended by representatives of PROSOCO, its distributors or dealers.

CUSTOMER CARE

Factory personnel are available for product, environment and job-safety assistance with no obligation. Call 800-255-4255 and ask for Customer Care – technical support.

Factory-trained representatives are established in principal cities throughout the continental United States. Call Customer Care at 800-255-4255, or visit our web site at www.prosoco.com, for the name of the PROSOCO representative in your area.

BEST PRACTICES

Best cleaning results are obtained when air and masonry surface temperatures are 40° F (4° C) or above. If freezing conditions have existed, let masonry thaw.

Apply 942 Limestone & Marble Cleaner to the surface using a brush or airless spray equipment. Apply a thick uniform coating.

The appropriate dwell period for safe, effective cleaning should be determined through on-site testing, before full-scale cleaning operations. For long dwell periods, it may be necessary to cover treated areas with polyethylene to prevent premature drying.

Never go it alone. For problems or questions, contact your local PROSOCO distributor or field representative. Or call PROSOCO technical Customer Care toll-free at 800-255-4255.

SAFETY DATA SHEET

PROSOCO, Inc.



PROSOCO
Version 1.02

Issue Date 26-Jan-2015

Revision Date 16-Jul-2015

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Sure Klean® 942 Limestone & Marble Cleaner

Other means of identification

Product Code 20096

Recommended use of the chemical and restrictions on use

Recommended Use Restricted to professional users.

Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address

PROSOCO, Inc.
3741 Greenway Circle
Lawrence, Kansas 66046

Emergency telephone number

8:00 AM – 5:00 PM CST Monday-Friday 785-865-4200
NON-BUSINESS HOURS (INFOTRAC) 800-535-5053

2. HAZARDS IDENTIFICATION

Classification

Serious eye damage/eye irritation

Category 2A

Label elements

Emergency Overview

Warning

Hazard statements

Causes serious eye irritation



Appearance clear amber

Physical state gel

Odor Slight Ammonia

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling

Wear eye/face protection

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

Hazards not otherwise classified (HNOC)**Other Information**

2.61% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Water	7732-18-5	60 - 100	*
Sodium Salt	Proprietary	1 - 5	*
Ammonium Salt	Proprietary	1 - 5	*
Xanthan gum	11138-66-2	1 - 5	*
Tetrasodium EDTA	64-02-8	1 - 5	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES**First aid measures**

General advice	If symptoms persist, call a physician.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin Contact	Wash off immediately with plenty of water. Consult a physician if necessary.
Inhalation	Remove to fresh air. Oxygen or artificial respiration if needed.
Ingestion	Do NOT induce vomiting. Rinse mouth. Drink plenty of water. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms Causes serious eye irritation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

No information available.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Use personal protective equipment as required. Dam up. Cover liquid spill with sand, earth or other non-combustible absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. Soak up with inert absorbent material.

7. HANDLING AND STORAGE**Precautions for safe handling**

Advice on safe handling Ensure adequate ventilation, especially in confined areas.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep tightly closed in a dry and cool place. Keep in properly labeled containers. Keep out of the reach of children.

Incompatible materials Incompatible with oxidizing agents. Acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters**

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering Controls Showers. Eyewash stations.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES**Information on basic physical and chemical properties**

Physical state gel

Appearance	clear amber	Odor	Slight Ammonia
Color	amber	Odor threshold	No information available
Property	Values	Remarks • Method	
pH	8.3	ASTM D 3278	
Melting point/freezing point	-4 °C / 25 °F		
Boiling point/boiling range	No information available		
Flash point	> 93 °C / > 200 °F		
Evaporation rate	No information available		
Flammability (solid, gas)	No information available		
Flammability Limits in Air			
Upper flammability limits	No information available		
Lower flammability limit	No information available		
Vapor pressure	No information available		
Vapor density	No information available		
Specific Gravity	1.04		
Water solubility	completely soluble		
Solubility in other solvents	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		
Decomposition temperature	No information available		
Kinematic viscosity	No information available		
Dynamic viscosity	No information available		

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Heat.

Incompatible materials

Incompatible with oxidizing agents. Acids.

Hazardous Decomposition Products

Carbon oxides. Nitrogen oxides (NOx). Ammonia.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Causes serious eye irritation
Inhalation	Avoid breathing vapors or mists. May be harmful if inhaled.
Eye contact	Avoid contact with eyes. Causes serious eye irritation.
Skin Contact	Avoid contact with skin. May cause irritation.
Ingestion	Do not taste or swallow. May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water	> 90 mL/kg (Rat)	-	-
7732-18-5			
Sodium Salt	= 4220 mg/kg (Rat)	-	-

Ammonium Salt	= 1576 mg/kg (Rat)	-	-
Tetrasodium EDTA 64-02-8	= 10 g/kg (Rat)	-	-

Information on toxicological effects

Symptoms Causes serious eye irritation. May cause respiratory irritation.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
Germ cell mutagenicity No information available.
Carcinogenicity This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 2.61% of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .
ATEmix (oral) 15046 mg/kg mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Sodium Salt	650: 120 h Nitzschia linearis mg/L EC50	8250 - 9000: 96 h Lepomis macrochirus mg/L LC50 static	-	2350: 48 h Daphnia magna mg/L EC50
Ammonium Salt	-	0.16 - 1.1: 96 h Oncorhynchus mykiss mg/L LC50 0.615 - 0.712: 96 h Oncorhynchus mykiss mg/L LC50	-	-
Tetrasodium EDTA 64-02-8	1.01: 72 h Desmodesmus subspicatus mg/L EC50	41: 96 h Lepomis macrochirus mg/L LC50 static 59.8: 96 h Pimephales promelas mg/L LC50 static	-	610: 24 h Daphnia magna mg/L EC50

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Chemical Name	Partition coefficient
Ammonium Salt	-2.4

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS**Waste treatment methods**

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Do not reuse container.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT Not Regulated for all modes of transportation.

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
DSL/NDSL Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Ammonium Salt -	-	1 - 5	1.0

SARA 311/312 Hazard Categories

Acute health hazard Yes
Chronic Health Hazard No
Fire hazard No
Sudden release of pressure hazard No
Reactive Hazard No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Ammonium Salt	5000 lb	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Ammonium Salt	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations**16. OTHER INFORMATION**

<u>NFPA</u>	Health hazards 2	Flammability 0	Instability 0	Physical and Chemical Properties -
<u>HMIS</u>	Health hazards 2	Flammability 0	Physical hazards 0	Personal protection X

Prepared By Regulatory Department

Issue Date 26-Jan-2015

Revision Date 16-Jul-2015

Revision Note

SDS sections updated

7 15

Disclaimer

The information contained on the Material Safety Data Sheet has been compiled from data considered accurate. This data is believed to be reliable, but it must be pointed out that values for certain properties are known to vary from source to source. PROSOCO, Inc. expressly disclaims any warranty express or implied as well as any liability for any injury or loss arising from the use of this information or the materials described. This data is not to be construed as absolutely complete since additional data may be desirable when particular conditions or circumstances exist. It is the responsibility of the user to determine the best precautions necessary for the safe handling and use of this product for his unique application. This data relates only to the specific material designated and is not to be used in combination with any other material. Many federal and state regulations pertain directly or indirectly to the product's end use and disposal of containers and unused material. It is the purchaser's responsibility to familiarize himself with all applicable regulations.

End of Safety Data Sheet



PROSOCO®

Sure Klean®

CLEANING & PROTECTIVE TREATMENTS

Light Duty Restoration Cleaner

Sure Klean® Light Duty Restoration Cleaner removes tough atmospheric soiling and subsurface staining, while minimizing potential for damage to delicate masonry and adjacent substrates. Removes difficult calcium (concrete) stains, white scum and other staining from most window glass.

Sure Klean® Light Duty Restoration Cleaner combines exceptionally low acid concentrations with a revolutionary blend of non acidic cleaners, surface wetting agents and inhibitors. This produces a highly efficient, gelled cleaner which is easily controlled and much safer for the building, the applicator and the environment.

ADVANTAGES

- Highly efficient restoration cleaner for most dense masonry surfaces.
- Reduced potential for damage to adjacent or surrounding surfaces.
- Safer and less corrosive than conventional restoration cleaners based on hydrofluoric acid or ammonium bi-fluoride.
- Removes rust stains and red clay stains from brick.
- Very low odor.
- Restores clarity of most common flush window glass streaked and damaged by pollution and water rundown from adjacent building materials. Always test to ensure desired results.

Limitations

- Mildly acidic. Not for polished marble or polished travertine.
- May damage some non masonry surfaces.
- May have limited effect on highly porous surfaces. Contact PROSOCO Customer Care for product recommendation.
- Not intended for regular maintenance cleaning of glass.
- Not for use on treated low-E glass; acrylic and polycarbonate sheet glazing; and glazing with surface-applied reflective, metallic or other

REGULATORY COMPLIANCE

VOC Compliance

Sure Klean® Light Duty Restoration Cleaner is compliant with all national, state and district VOC regulations.

TYPICAL TECHNICAL DATA

FORM	Clear, colorless paste/gel liquid
SPECIFIC GRAVITY	1.12
pH*	1.5–2.0
WT/GAL	9.34 lbs
ACTIVE CONTENT	not applicable
TOTAL SOLIDS	not applicable
VOC CONTENT	not applicable
FLASH POINT	not applicable
FREEZE POINT	5° F (–15° C)
SHELF LIFE	1 year in tightly sealed, unopened container

*The concentrated product's pH of 1.5–2.0 is comparable to that of common citrus fruits such as lemons and limes. The fluoride content is below that found in many prescription toothpastes.

SAFETY INFORMATION

Always read full label and SDS for precautionary instructions before use. Use appropriate safety equipment and job site controls during application and handling.

24-Hour Emergency Information:
INFOTRAC at 800-535-5053

Product Data Sheet

Sure Klean® Light Duty Restoration Cleaner

PREPARATION

Protect people, vehicles, property, plants, metal, all non masonry and acid-sensitive surfaces from contact with product, rinse residue, fumes and wind drift. Protect/divert auto and foot traffic. Clean when traffic is at a minimum.

Application to surfaces exposed to direct sunlight or high winds may cause rapid drying. When possible, clean when surfaces are shaded from direct sunlight. Wet hot surfaces with fresh water immediately before applying cleaner to remove loose soiling and reduce surface temperature. Do not let cleaner dry on the surface. If drying occurs, lightly wet treated surfaces with fresh water and reapply the cleaner in a gentle scrubbing manner.

Specifier Note: pH of Cleaning Effluent: When applied to building surfaces, a reaction between Sure Klean® Light Duty Restoration Cleaner, surface soiling and rinse waters generally raises the pH of cleaning effluent to a near neutral state.

Recommended for these substrates. Always test. Coverage is in sq.ft./m. per gallon of concentrate.

<i>Substrate</i>	<i>Type</i>	<i>Use?</i>	<i>Coverage</i>
Architectural Concrete Block	Burnished	yes	75–100 sq.ft. 7–9 sq.m.
	Smooth	yes	
	Split-faced	yes	
	Ribbed	yes	
Concrete	Brick	yes	50–125 sq.ft. 5–12 sq.m.
	Tile	yes	
	Precast Panels	yes	
	Pavers	yes	
	Cast-in-place	yes	
Fired Clay	Brick	yes	75–150 sq.ft. 7–14 sq.m.
	Tile	yes	
	Terra Cotta	yes	
	Pavers	yes	
Marble, Travertine, Limestone	Polished	no	N/A
	Unpolished	yes	75–150 sq.ft. 7–14 sq.m.
Granite	Polished♦	yes	150–175 sq.ft. 14–16 sq.m.
	Unpolished	yes	100–150 sq.ft. 9–14 sq.m.
Sandstone	Unpolished	yes	75–125 sq.ft. 7–12 sq.m.
Slate	Unpolished	yes	100–175 sq.ft. 9–16 sq.m.

♦May damage some glass, metal and polished masonry. See Limitations, page 1.

Always test to ensure desired results. Coverage estimates depend on surface texture and porosity.

Effluent generated on job sites employing Light Duty Restoration Cleaner typically measures within the range of pH 5–10. This falls within the acceptable range for discharge to most waste water treatment facilities. Always test to ensure effluent meets local standards for discharge.

Surface and Air Temperatures

Best air and surface temperatures for cleaning: 40° F (4° C) or above. Cleaning when temperatures are below freezing or will be overnight may harm masonry. If freezing conditions have existed, let the masonry thaw before cleaning.

Equipment

Apply with an acid-resistant brush or heavy nap roller. Do not atomize. Scrub heavily soiled surfaces with a nonabrasive brush or synthetic scrubbing pad.

Use only well-maintained staging and scaffolding that is equipped with steel cable. Use polypropylene ropes and safety lines. Use acid-resistant application equipment.

Masonry-washing equipment generating 400–1000 psi with a water flow rate of 6–8 gallons per minute is the best water/pressure combination for rinsing porous masonry. Use a 15–45° fan spray tip. Heated water (150–180° F; 65–82° C) may improve cleaning efficiency. Use adjustable equipment for reducing water flow-rates and rinsing pressure as needed for sensitive surfaces.

Rinsing pressures greater than 1000 psi and fan spray tips smaller than 15° may permanently damage sensitive masonry. Water flow-rates less than 6 gallons per minute may reduce cleaning productivity and contribute to uneven cleaning results.

Storage and Handling

Store in a cool, dry place with adequate ventilation. Always seal container after dispensing. Do not alter or mix with other chemicals. Published shelf life assumes upright storage of factory-sealed containers in a dry place. Maintain temperature of 45–100° F (7–38° C). Do not double stack pallets. Dispose of unused product and container in accordance with local, state and federal regulations.

Product Data Sheet

Sure Klean® Light Duty Restoration Cleaner

APPLICATION

Read "Preparation" and the Safety Data Sheet before use.

ALWAYS TEST a small area of each surface to confirm suitability and desired results before beginning overall application. Test each type of masonry and each type of stain. Test with the same equipment, recommended surface preparation and application procedures planned for general application. Let test area dry 3–7 days before inspection and approval. Make the test panel available for comparison throughout the cleaning project.

Dilution

Apply as packaged. Do not dilute or alter or use for purposes other than specified.

Stir or mix well before use.

Application Instructions

Masonry

1. Working from bottom to top, prewet the surface with clean water.
2. Apply cleaner using a brush or roller. Gently scrub to improve results.
3. Let dwell for 5 to 15 minutes. Gently scrub heavily soiled areas. Do not let product dry on the surface. If drying occurs, lightly wet treated surfaces with fresh water. Reapply the cleaner in a gentle scrubbing manner.
4. Working from bottom to the top, rinse thoroughly with clean water.
5. Repeat steps 1 through 4 above if necessary.

Glass

1. Working from bottom to top, prewet the surface with clean water.
2. Apply cleaner in a gentle, circular scrubbing manner.
3. Let the cleaner dwell for 5 to 15 minutes. Gently scrub heavily soiled areas.
4. Working from bottom to top, rinse thoroughly with clean water.
5. To minimize water spotting, clean window glass using standard window cleaning products. If glass streaking is caused by leaching of salts from concrete, mortar, etc. help prevent further streaking by applying the appropriate Sure Klean® Weather Seal product to the masonry.

Cleanup

Clean brushes and rollers using warm, soapy water.

WARRANTY

The information and recommendations made are based on our own research and the research of others, and are believed to be accurate. However, no guarantee of their accuracy is made because we cannot cover every possible application of our products, nor anticipate every variation encountered in masonry surfaces, job conditions and methods used. The purchasers shall make their own tests to determine the suitability of such products for a particular purpose.

BEST PRACTICES

Regarding pH of Cleaning Effluent: When applied to building surfaces, a reaction between Sure Klean® Light Duty Restoration Cleaner, surface soiling and rinse waters generally raises the pH of cleaning effluent to a near neutral state. Effluent generated on job sites employing Light Duty Restoration Cleaner typically measures within the range of pH 5–10. This falls within the acceptable range for discharge to most waste water treatment facilities. Always test to ensure effluent meets local standards for discharge.

Apply with an acid-resistant brush or heavy nap roller. Do not atomize. Scrub heavily soiled surfaces with a nonabrasive brush or synthetic scrubbing pad.

Application to surfaces exposed to direct sunlight or high winds may cause rapid drying. When possible, clean when surfaces are shaded from direct sunlight. Wet hot surfaces with fresh water immediately before applying cleaner to remove loose soiling and reduce surface temperature.

Do not let cleaner dry on the surface. If drying occurs, lightly wet treated surfaces with fresh water and reapply the cleaner in a gentle scrubbing manner.

Never go it alone. For problems or questions, contact your local PROSOCO distributor or field representative. Or call PROSOCO technical Customer Care toll-free at 800-255-4255.

Product Data Sheet

Sure Klean® Light Duty Restoration Cleaner

PROSOCO, Inc. warrants this product to be free from defects. **Where permitted by law, PROSOCO makes no other warranties with respect to this product, express or implied, including without limitation the implied warranties of merchantability or fitness for particular purpose.**

The purchaser shall be responsible to make his own tests to determine the suitability of this product for his particular purpose. PROSOCO's liability shall be limited in all events to supplying sufficient product to re-treat the specific areas to which defective product has been applied. Acceptance and use of this product absolves PROSOCO from any other liability, from whatever source, including liability for incidental, consequential or resultant damages whether due to breach of warranty, negligence or strict liability. This warranty may not be modified or extended by representatives of PROSOCO, its distributors or dealers.

CUSTOMER CARE

Factory personnel are available for product, environment and job-safety assistance with no obligation. Call 800-255-4255 and ask for Customer Care – technical support.

Factory-trained representatives are established in principal cities throughout the continental United States. Call Customer Care at 800-255-4255, or visit our web site at www.prosoco.com, for the name of the PROSOCO representative in your area.



SAFETY DATA SHEET

PROSOCO, Inc.



PROSOCO
Version 2

Issue Date 25-Nov-2014

Revision Date 22-Sep-2015

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Sure Klean® Light Duty Restoration Cleaner

Other means of identification

Product Code 20039
UN/ID No UN 1760

Recommended use of the chemical and restrictions on use

Recommended Use Restricted to professional users.
Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address

PROSOCO, Inc.
3741 Greenway Circle
Lawrence, Kansas 66046

Emergency telephone number

8:00 AM – 5:00 PM CST Monday-Friday 785-865-4200
NON-BUSINESS HOURS (INFOTRAC) 800-535-5053

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 3
Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1
Reproductive toxicity	Category 1B

Label elements

Emergency Overview

Danger

Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment

Hazard statements

Harmful if swallowed
Toxic in contact with skin
Causes severe skin burns and eye damage
May damage fertility or the unborn child



Appearance clear	Physical state Paste/Gel Liquid	Odor No information available
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Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician
Specific treatment (see TREATMENT FOR HYDROFLUORIC ACID EXPOSURE on this label)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)**Other Information**

1.57148% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Water	7732-18-5	40 - 70	*
Glycolic Acid	79-14-1	10 - 30	*
sulfamic acid	5329-14-6	7 - 13	*
Xanthan gum	11138-66-2	1 - 5	*
Alcohols, C9-11, ethoxylated	68439-46-3	1 - 5	*
quaternary ammonium compounds, coco alkylbis (hydroxyethyl)methyl, ethoxylated, chlorides	61791-10-4	1 - 5	*
Hydrogen Fluoride	7664-39-3	0.1 - 1	*
Methoxyacetic acid	625-45-6	0.1 - 1	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES**First aid measures****General advice**

Immediate medical attention is required. If symptoms persist, call a physician.

Eye contact

Immediate medical attention is required. Keep eye wide open while rinsing. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Rinse the eyes with a calcium gluconate 1% solution. Do not rub affected area.

Skin Contact	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediately apply calcium gluconate gel 2.5% and massage into the affected area using rubber gloves; continue to massage while repeatedly applying gel until 15 minutes after pain is relieved.
Inhalation	Remove to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. Call a physician or poison control center immediately.
Self-protection of the first aider	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms	Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment. The product causes burns of eyes, skin and mucous membranes.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

The product causes burns of eyes, skin and mucous membranes. Keep product and empty container away from heat and sources of ignition. Risk of ignition. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions	Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.
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Environmental precautions

Environmental precautions	Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.
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Methods and material for containment and cleaning up

Methods for containment	Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.
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Methods for cleaning up Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. Do not breathe dust/fume/gas/mist/vapors/spray.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

Incompatible materials Incompatible with strong acids and bases. Incompatible with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hydrogen Fluoride 7664-39-3	TWA: 0.5 ppm F TWA: 2.5 mg/m ³ F S* Ceiling: 2 ppm F	TWA: 3 ppm F TWA: 2.5 mg/m ³ F TWA: 2.5 mg/m ³ dust (vacated) TWA: 3 ppm F (vacated) TWA: 2.5 mg/m ³ (vacated) STEL: 6 ppm F	IDLH: 30 ppm Ceiling: 6 ppm 15 min Ceiling: 5 mg/m ³ 15 min TWA: 3 ppm TWA: 2.5 mg/m ³

NIOSH IDLH *Immediately Dangerous to Life or Health*

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Showers. Eyewash stations. Ventilation systems. Brush on or apply at the lowest practical pressure. Do not atomize during application. Beware of wind drift. Proper work practices and planning should be utilized to avoid contact with workers, passersby, and non-masonry surfaces.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Regular cleaning of equipment, work area and clothing is recommended. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Paste/Gel Liquid	Odor	No information available
Appearance	clear	Odor threshold	No information available
Color	colorless		
<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>	
pH	1.5		
Melting point/freezing point	-15 °C / 5 °F		
Boiling point/boiling range	No information available		
Flash point		Not Applicable	
Evaporation rate	No information available		
Flammability (solid, gas)	No information available		
Flammability Limits in Air			
Upper flammability limits	No information available		
Lower flammability limit	No information available		
Vapor pressure	No information available		
Vapor density	No information available		
Specific Gravity	1.122		
Water solubility	completely soluble		
Solubility in other solvents	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		
Decomposition temperature	No information available		
Kinematic viscosity	No information available		
Dynamic viscosity	No information available		
Explosive properties	Not an explosive		
Oxidizing properties	Not Applicable		

10. STABILITY AND REACTIVITY**Reactivity**

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Strong bases. Heat, flames and sparks. Exposure to air or moisture over prolonged periods.

Incompatible materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Product Information	Corrosive Harmful by inhalation, in contact with skin and if swallowed
Inhalation	Avoid breathing vapors or mists. Harmful by inhalation.
Eye contact	Corrosive to the eyes and may cause severe damage including blindness.
Skin Contact	Corrosive. Causes burns. Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment.

Ingestion

Harmful if swallowed. Can burn mouth, throat, and stomach.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Glycolic Acid 79-14-1	= 1950 mg/kg (Rat)	-	= 7.7 mg/L (Rat) 4 h
sulfamic acid 5329-14-6	= 1450 mg/kg (Rat)	-	-
Alcohols, C9-11, ethoxylated 68439-46-3	= 1378 mg/kg (Rat)	> 2 g/kg (Rabbit)	-
quaternary ammonium compounds, coco alkylbis (hydroxyethyl)methyl, ethoxylated, chlorides 61791-10-4	= 580 mg/kg (Rat)	-	-
Hydrogen Fluoride 7664-39-3	-	-	= 850 mg/m ³ (Rat) 1 h = 1276 ppm (Rat) 1 h

Information on toxicological effects**Symptoms**

The product causes burns of eyes, skin and mucous membranes. Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment.

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Sensitization**

No information available.

Germ cell mutagenicity

No information available.

Carcinogenicity

This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Reproductive toxicity

No information available.

STOT - single exposure

No information available.

STOT - repeated exposure

No information available.

Chronic toxicity

Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.

Aspiration hazard

Risk of serious damage to the lungs (by aspiration).

Numerical measures of toxicity - Product Information**Unknown Acute Toxicity**

1.57148% of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)

598 mg/kg

ATEmix (dermal)

666 mg/kg mg/l

ATEmix (inhalation-dust/mist)

5.9 mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Glycolic Acid 79-14-1	-	5000: 96 h Brachydanio rerio mg/L LC50 static	-	-
sulfamic acid 5329-14-6	-	14.2: 96 h Pimephales promelas mg/L LC50 static	-	-
Hydrogen Fluoride 7664-39-3	-	660: 48 h Leuciscus idus mg/L LC50	-	270: 48 h Daphnia species mg/L EC50

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Chemical Name	Partition coefficient
Glycolic Acid 79-14-1	-1.11
Hydrogen Fluoride 7664-39-3	-1.4

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS**Waste treatment methods**

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Do not reuse container.
US EPA Waste Number	D002

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION**DOT**

UN/ID No

Regulated

Proper shipping name

UN 1760

Hazard Class

Corrosive liquid, n.o.s. (Hydroxyacetic & Sulfamic Acid)

Packing Group

8

II

15. REGULATORY INFORMATION**International Inventories**

TSCA

Complies

DSL/NDL

Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard

Yes

Chronic Health Hazard

Yes

Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Hydrogen Fluoride 7664-39-3	100 lb	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Hydrogen Fluoride 7664-39-3	100 lb	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
sulfamic acid 5329-14-6	X	-	-
Formic acid 64-18-6	X	X	X

16. OTHER INFORMATION

NFPA	Health hazards 3	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 3	Flammability 0	Physical hazards 0	Personal protection X

Prepared By	Regulatory Department
Issue Date	25-Nov-2014
Revision Date	22-Sep-2015
Revision Note	

SDS sections updated

2 3 4 5 11 15

Disclaimer

The information contained on the Safety Data Sheet has been compiled from data considered accurate. This data is believed to be reliable, but it must be pointed out that values for certain properties are known to vary from source to source. PROSOCO, Inc. expressly disclaims any warranty express or implied as well as any liability for any injury or loss arising from the use of this information or the materials described. This data is not to be construed as absolutely complete since additional data may be desirable when particular conditions or circumstances exist. It is the responsibility of the user to determine the best precautions necessary for the safe handling and use of this product for his unique application. This data relates only to the specific material designated and is not to be used in combination with any other material. Many federal and state regulations pertain directly or indirectly to the product's end use and disposal of containers and unused material. It is the purchaser's responsibility to familiarize himself with all applicable regulations.

End of Safety Data Sheet



PROSOCO®

Sure Klean®

CLEANING & PROTECTIVE TREATMENTS

Heavy Duty Restoration Cleaner

Sure Klean® Heavy Duty Restoration Cleaner is a concentrated acidic cleaning compound for the removal of heavy atmospheric staining from unpolished masonry. Used properly, Heavy Duty Restoration Cleaner dissolves heavy carbon and many other stains commonly found on masonry buildings in highly polluted areas. Dilute with water to produce a cost-effective, general-purpose restoration cleaner for brick, granite, sandstone, slate, terra cotta and many other masonry surfaces.

ADVANTAGES

- Cost-effective concentrate reduces shipping, storage and container disposal costs.
- Proven effective for cleaning the dirtiest buildings.
- Safer than sandblasting. Will not damage masonry when properly used.

Limitations

- Repeated application, or use when diluted with less than three parts fresh water, may damage some masonry surfaces. Use Sure Klean® Light Duty Restoration Cleaner or Sure Klean® Restoration Cleaner where possible.
- Not for interior use. Use Sure Klean® Light Duty Restoration Cleaner.
- Not suitable for polished stone surfaces. Use Sure Klean® Light Duty Restoration Cleaner.

REGULATORY COMPLIANCE

VOC Compliance

Sure Klean® Heavy Duty Restoration Cleaner is compliant with all national, state and district VOC regulations.

TYPICAL TECHNICAL DATA

FORM	Clear, colorless liquid
SPECIFIC GRAVITY	1.132
pH	2.2 @ 1:3 dilution
WT/GAL	9.42 lbs
ACTIVE CONTENT	not applicable
TOTAL SOLIDS	not applicable
VOC CONTENT	not applicable
FLASH POINT	not applicable
FREEZE POINT	no data
SHELF LIFE	3 years in tightly sealed, unopened container

SAFETY INFORMATION

Always read full label and SDS for precautionary instructions before use. Use appropriate safety equipment and job site controls during application and handling.

24-Hour Emergency Information:
INFOTRAC at 800-535-5053

Product Data Sheet

Sure Klean® Heavy Duty Restoration Cleaner

PREPARATION

Protect people, vehicles, property, plants and all non masonry surfaces from cleaner, rinse, fumes, and wind drift. Protect and/or divert auto and pedestrian traffic. This product is corrosive, etches glass and architectural aluminum and is harmful to wood, painted surfaces and foliage.

Complete cleaning before installing windows, doors, hardware, light fixtures, roofing materials and any other non masonry items. If such fixtures have been installed, protect before application of cleaner.

All caulking and sealant materials should be in place and thoroughly cured before cleaning begins.

Avoid exposing building occupants to fumes. On occupied buildings, cover all windows, air intakes and exterior air conditioning vents. Shut down air handling equipment during cleaning and until surfaces are thoroughly dry.

Fumes attack glass, metal and all other acid-sensitive surfaces.

Recommended for these substrates. Always test. Coverage is in sq.ft./m. per gallon of concentrate.

<i>Substrate</i>	<i>Type</i>	<i>Use?</i>	<i>Coverage</i>
Architectural Concrete Block	Burnished	no	N/A
	Smooth	no	
	Split-faced	no	
	Ribbed	no	
Concrete	Brick	no	N/A
	Tile	no	
	Precast Panels	no	
	Pavers	no	
	Cast-in-place	no	
Fired Clay	Brick	yes	125–400 sq.ft. 28–47 sq.m.
	Tile	yes	
	Terra Cotta	yes	
	Pavers	yes	
Marble, Travertine, Limestone	Polished	no	N/A
	Unpolished	no	N/A
Granite	Polished	no	N/A
	Unpolished	yes	100–175 sq.ft. 9–16 sq.m.
Sandstone	Unpolished	yes	100–175 sq.ft. 9–16 sq.m.
Slate	Unpolished	yes	100–175 sq.ft. 9–16 sq.m.

Repeated applications may damage some surfaces. Always test to ensure desired results. Coverage estimates depend on surface texture and porosity.

Surface and Air Temperatures

Best cleaning results are obtained when air and masonry surface temperatures are 40° F (4° C) or above. Cleaning when temperatures are below freezing or will be overnight may harm masonry. If freezing conditions exist prior to application, let masonry thaw.

Equipment

Apply using an acid-resistant brush or low-pressure (50 psi max) airless spray equipment. Equipment should be fitted with acid-resistant hoses and gaskets to avoid discoloration. Pressure spray above 50 psi drives the chemicals deep into the surface, making it difficult to rinse completely, and may result in staining.

Rinse with enough water and pressure to flush spent cleaner and dissolved soiling from the masonry surface and surface pores without damage. Inadequate rinsing leaves residues which may stain the cleaned surface.

Masonry-washing equipment generating 400–1000 psi with a water flow rate of 6–8 gallons per minute is the best water/pressure combination for rinsing porous masonry. Use a 15–45° fan spray tip. Heated water (150–180° F; 65–82° C) may improve cleaning efficiency. Use adjustable equipment for reducing water flow-rates and rinsing pressure as needed for sensitive surfaces.

Rinsing pressures greater than 1000 psi and fan spray tips smaller than 15° may permanently damage sensitive masonry. Water flow-rates less than 6 gallons per minute may reduce cleaning productivity and contribute to uneven cleaning results.

Storage and Handling

Store in a cool, dry place with adequate ventilation. Always seal container after dispensing. Do not alter or mix with other chemicals. Published shelf life assumes upright storage of factory-sealed containers in a dry place. Maintain temperature of 45–100° F (7–38° C). Do not double stack pallets. Dispose of unused product and container in accordance with local, state and federal regulations.

APPLICATION

Read “Preparation” and the Safety Data Sheet before use. **ALWAYS TEST** a small area of each surface to confirm suitability and desired results before beginning overall application. Test each type of masonry and each type of stain. Test with the same equipment, recommended surface preparation

Product Data Sheet

Sure Klean® Heavy Duty Restoration Cleaner

and application procedures planned for general application. Let test area dry 3–7 days before inspection and approval. Make the test panel available for comparison throughout the cleaning project.

Dilution

Sure Klean® Heavy Duty Restoration Cleaner must be diluted with fresh water before application. Failure to dilute may result in bleaching of the masonry's natural color.

When diluting, always pour cold water into bucket first, then carefully add product. Acidic materials will attack metal. Use polyethylene or polypropylene buckets only.

- *Porous Masonry*: dilute 1 part concentrate to 3 parts water, depending on test results.
- *Nonporous Masonry (glazed brick, terra cotta)*: dilute 1 part concentrate to 4 to 6 parts water, depending on test results.

Application Instructions

1. Working from the bottom to the top, prewet the surface with clean water.
2. Apply using a brush or low-pressure spray.
3. Let the cleaning solution stay on the surface for 3 to 5 minutes. Reapply. Gently scrub heavily soiled areas. Do not let cleaner dry on the surface. If drying occurs, lightly wet treated surfaces with fresh water and reapply in a gentle scrubbing manner.
4. Rinse with low-pressure flood rinse to remove initial acidic residue with minimum risk of wind drift.
5. Rinse thoroughly using high-pressure spray, from the bottom of the treated area to the top covering each section of the surface with a concentrated stream of water. To avoid streaking, keep wall below wet and rinsed free of cleaner and residues.

Cleanup

Clean tools and equipment using fresh water.

WARRANTY

The information and recommendations made are based on our own research and the research of others, and are believed to be accurate. However, no guarantee of their accuracy is made because we cannot cover every possible application of our products, nor anticipate every variation encountered in masonry surfaces, job conditions and methods used. The purchasers shall make their own tests to determine the suitability of such

products for a particular purpose.

PROSOCO, Inc. warrants this product to be free from defects. **Where permitted by law, PROSOCO makes no other warranties with respect to this product, express or implied, including without limitation the implied warranties of merchantability or fitness for particular purpose.**

The purchaser shall be responsible to make his own tests to determine the suitability of this product for his particular purpose. PROSOCO's liability shall be limited in all events to supplying sufficient product to re-treat the specific areas to which defective product has been applied. Acceptance and use of this product absolves PROSOCO from any other liability, from whatever source, including liability for incidental, consequential or resultant damages whether due to breach of warranty, negligence or strict liability. This warranty may not be modified or extended by representatives of PROSOCO, its distributors or dealers.

CUSTOMER CARE

Factory personnel are available for product, environment and job-safety assistance with no obligation. Call 800-255-4255 and ask for Customer Care – technical support.

Factory-trained representatives are established in principal cities throughout the continental United States. Call Customer Care at 800-255-4255, or visit our web site at www.prosoco.com, for the name of the PROSOCO representative in your area.

BEST PRACTICES

Apply using an acid-resistant brush or low-pressure airless spray equipment fitted with acid-resistant hoses and gaskets to avoid discoloration.

Do not use spray equipment above 50 psi. Pressure spray above 50 psi drives the chemicals deep into the surface, making it difficult to rinse completely, and may result in staining.

Heavy Duty Restoration Cleaner must be diluted with fresh water before application. Failure to dilute may result in bleaching of the masonry's natural color. When diluting, always pour cold water into bucket first, then carefully add product. Acidic materials will attack metal. Use polyethylene or polypropylene buckets only.

Never go it alone. For problems or questions, contact your local PROSOCO distributor or field representative. Or call PROSOCO technical Customer Care toll-free at 800-255-4255.

SAFETY DATA SHEET

PROSOCO, Inc.



PROSOCO
Version 2

Issue Date 24-Nov-2014

Revision Date 14-Jul-2015

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Sure Klean®
Heavy Duty Restoration Cleaner

Other means of identification

Product Code 20032
UN/ID No UN2922

Recommended use of the chemical and restrictions on use

Recommended Use Restricted to professional users.
Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address

PROSOCO, Inc.
3741 Greenway Circle
Lawrence, Kansas 66046

Emergency telephone number

8:00 AM – 5:00 PM CST Monday-Friday 785-865-4200
NON-BUSINESS HOURS (INFOTRAC) 800-535-5053

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Oral	Category 2
Acute toxicity - Dermal	Category 1
Acute toxicity - Inhalation (Gases)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1

Label elements

Emergency Overview

Danger

Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment

Hazard statements

Fatal if swallowed
Fatal in contact with skin
Fatal if inhaled
Causes severe skin burns and eye damage



Appearance clear

Physical state Liquid

Odor Strong

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not get in eyes, on skin, or on clothing
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Wear respiratory protection

Precautionary Statements - Response

Specific treatment is urgent (see TREATMENT FOR HYDROFLUORIC ACID EXPOSURE on this label)
Immediately call a POISON CENTER or doctor/physician
Specific treatment (see TREATMENT FOR HYDROFLUORIC ACID EXPOSURE on this label)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
Immediately call a POISON CENTER or doctor/physician
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Other Information

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Water	7732-18-5	40 - 70	*
Hydrogen Fluoride	7664-39-3	10 - 30	*
Phosphoric Acid	7664-38-2	5 - 10	*
Glycolic Acid	79-14-1	3 - 7	*
Citric acid	77-92-9	1 - 5	*
Nonionic surfactant	Proprietary	1 - 5	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

General advice	Immediate medical attention is required.
Eye contact	Keep eye wide open while rinsing. Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Do not rub affected area. Rinse the eyes with a calcium gluconate 1% solution.
Skin Contact	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediately apply calcium gluconate gel 2.5% and massage into the affected area using rubber gloves; continue to massage while repeatedly applying gel until 15 minutes after pain is relieved.
Inhalation	Remove to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion	Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.
Self-protection of the first aider	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms	Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment. The product causes burns of eyes, skin and mucous membranes.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically. Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Protective equipment and precautions for firefighters

Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Dike far ahead of liquid spill for later disposal. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Keep out of the reach of children.

Incompatible materials Incompatible with strong acids and bases. Incompatible with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hydrogen Fluoride 7664-39-3	TWA: 0.5 ppm F TWA: 2.5 mg/m ³ F S* Ceiling: 2 ppm F	TWA: 3 ppm F TWA: 2.5 mg/m ³ F TWA: 2.5 mg/m ³ dust (vacated) TWA: 3 ppm F (vacated) TWA: 2.5 mg/m ³ (vacated) STEL: 6 ppm F	IDLH: 30 ppm Ceiling: 6 ppm 15 min Ceiling: 5 mg/m ³ 15 min TWA: 3 ppm TWA: 2.5 mg/m ³
Phosphoric Acid 7664-38-2	STEL: 3 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³ (vacated) STEL: 3 mg/m ³	IDLH: 1000 mg/m ³ TWA: 1 mg/m ³ STEL: 3 mg/m ³

NIOSH IDLH *Immediately Dangerous to Life or Health*

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Showers. Eyewash stations. Brush on or apply at the lowest practical pressure. Do not atomize during application. Beware of wind drift. Proper work practices and planning should be utilized to avoid contact with workers, passersby, and non-masonry surfaces. Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face protection	Tight sealing safety goggles. Face protection shield.
Skin and body protection	Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
General Hygiene Considerations	When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Strong
Appearance	clear	Odor threshold	No information available
Color	colorless		
Property	Values	Remarks • Method	
pH	2.2	@ 1:3 Dilution	
Melting point/freezing point	No information available		
Boiling point/boiling range	No information available		
Flash point		Not Applicable	
Evaporation rate	No information available		
Flammability (solid, gas)	No information available		
Flammability Limits in Air			
Upper flammability limits	No information available		
Lower flammability limit	No information available		
Vapor pressure	No information available		
Vapor density	No information available		
Specific Gravity	1.132		
Water solubility	completely soluble		
Solubility in other solvents	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		
Decomposition temperature	No information available		
Kinematic viscosity	No information available		
Dynamic viscosity	No information available		
Explosive properties	Not an explosive		
Oxidizing properties	Not Applicable		

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Hydrogen fluoride.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Corrosive Fatal if inhaled Fatal if swallowed Fatal in contact with skin
Inhalation	Poison - may be fatal if inhaled.
Eye contact	Corrosive to the eyes and may cause severe damage including blindness.
Skin Contact	May be fatal if absorbed through skin.
Ingestion	May be fatal if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Hydrogen Fluoride 7664-39-3	-	-	= 850 mg/m ³ (Rat) 1 h = 1276 ppm (Rat) 1 h
Phosphoric Acid 7664-38-2	= 1530 mg/kg (Rat)	= 2730 mg/kg (Rabbit)	> 850 mg/m ³ (Rat) 1 h
Glycolic Acid 79-14-1	= 1950 mg/kg (Rat)	-	= 7.7 mg/L (Rat) 4 h
Citric acid 77-92-9	= 3000 mg/kg (Rat)	-	-
Nonionic surfactant	= 4190 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms	The product causes burns of eyes, skin and mucous membranes. Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment.
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Chronic toxicity	Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.
Target Organ Effects	Eyes, Respiratory system, Skin.
Aspiration hazard	Risk of serious damage to the lungs (by aspiration).

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	35 mg/kg
ATEmix (dermal)	35 mg/kg
ATEmix (inhalation-gas)	3624 mg/l
ATEmix (inhalation-dust/mist)	0.3 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Hydrogen Fluoride 7664-39-3	-	660: 48 h Leuciscus idus mg/L LC50	-	270: 48 h Daphnia species mg/L EC50
Phosphoric Acid 7664-38-2	-	3 - 3.5: 96 h Gambusia affinis mg/L LC50	-	4.6: 12 h Daphnia magna mg/L EC50
Glycolic Acid 79-14-1	-	5000: 96 h Brachydanio rerio mg/L LC50 static	-	-
Citric acid 77-92-9	-	1516: 96 h Lepomis macrochirus mg/L LC50 static	-	120: 72 h Daphnia magna mg/L EC50

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Chemical Name	Partition coefficient
Hydrogen Fluoride 7664-39-3	-1.4
Glycolic Acid 79-14-1	-1.11
Citric acid 77-92-9	-1.72

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging

Do not reuse container.

US EPA Waste Number

D002

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT

UN/ID No	Regulated UN2922
Proper shipping name	Corrosive liquid, toxic, n.o.s. (Hydrofluoric and Phosphoric Acid)
Hazard Class	8
Subsidiary class	(6.1)

Packing Group

II

15. REGULATORY INFORMATION

International Inventories

TSCA Complies

DSL/NDSL Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Hydrogen Fluoride - 7664-39-3	7664-39-3	10 - 30	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Hydrogen Fluoride 7664-39-3	100 lb	-	-	X
Phosphoric Acid 7664-38-2	5000 lb	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Hydrogen Fluoride 7664-39-3	100 lb	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ
Phosphoric Acid 7664-38-2	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Phosphoric Acid 7664-38-2	X	X	X

16. OTHER INFORMATION

NFPA	Health hazards 3	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 3	Flammability 0	Physical hazards 0	Personal protection X

Prepared By Regulatory Department
Issue Date 24-Nov-2014
Revision Date 14-Jul-2015

Revision Note

SDS sections updated 2 15

Disclaimer

The information contained on the Material Safety Data Sheet has been compiled from data considered accurate. This data is believed to be reliable, but it must be pointed out that values for certain properties are known to vary from source to source. PROSOCO, Inc. expressly disclaims any warranty express or implied as well as any liability for any injury or loss arising from the use of this information or the materials described. This data is not to be construed as absolutely complete since additional data may be desirable when particular conditions or circumstances exist. It is the responsibility of the user to determine the best precautions necessary for the safe handling and use of this product for his unique application. This data relates only to the specific material designated and is not to be used in combination with any other material. Many federal and state regulations pertain directly or indirectly to the product's end use and disposal of containers and unused material. It is the purchaser's responsibility to familiarize himself with all applicable regulations.

End of Safety Data Sheet

SAFETY DATA SHEET

PROSOCO, Inc.



Issue Date 24-Nov-2014

Revision Date 24-Nov-2014

Version 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Sure Klean® Heavy Duty Restoration Cleaner NE

Other means of identification

Product Code 20033
UN/ID No UN2922

Recommended use of the chemical and restrictions on use

Recommended Use Restricted to professional users.
Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address
PROSOCO, Inc.
3741 Greenway Circle
Lawrence, Kansas 66046

Emergency telephone number

8:00 AM – 5:00 PM CST Monday-Friday 785-865-4200
NON-BUSINESS HOURS (INFOTRAC) 800-535-5053

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Oral	Category 2
Acute toxicity - Dermal	Category 1
Acute toxicity - Inhalation (Gases)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 1 Sub-category A
Serious eye damage/eye irritation	Category 1

Label elements

Emergency Overview

Danger

Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment

Hazard statements

Fatal if swallowed
Fatal in contact with skin
Fatal if inhaled
Causes severe skin burns and eye damage



Appearance clear

Physical state Liquid

Odor Irritating

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not get in eyes, on skin, or on clothing
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray
Wear respiratory protection

Precautionary Statements - Response

Specific treatment is urgent (see TREATMENT FOR HYDROFLUORIC ACID EXPOSURE on this label)
Immediately call a POISON CENTER or doctor/physician
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
Immediately call a POISON CENTER or doctor/physician
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Other Information

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Water	7732-18-5	40 - 70	*
Hydrogen Fluoride	7664-39-3	10 - 30	*
Phosphoric Acid	7664-38-2	7 - 13	*
Glycolic Acid	79-14-1	3 - 7	*
Citric acid	77-92-9	1 - 5	*

Nonionic surfactant	Proprietary	1 - 5	*
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* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

General advice	Immediate medical attention is required.
Eye contact	Keep eye wide open while rinsing. Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Do not rub affected area. Rinse the eyes with a calcium gluconate 1% solution.
Skin Contact	Immediate medical attention is required. Wash off immediately with plenty of water while removing contaminated clothing and shoes. Immediately apply calcium gluconate gel 2.5% and massage into the affected area using rubber gloves; continue to massage while repeatedly applying gel until 15 minutes after pain is relieved.
Inhalation	Remove to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion	Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Immediate medical attention is required. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.
Self-protection of the first aider	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms	Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment. The product causes burns of eyes, skin and mucous membranes.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically. Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Protective equipment and precautions for firefighters

Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Dike far ahead of liquid spill for later disposal. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Prevent product from entering drains. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Keep out of the reach of children.

Incompatible materials Incompatible with strong acids and bases. Incompatible with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hydrogen Fluoride 7664-39-3	TWA: 0.5 ppm F TWA: 2.5 mg/m ³ F S* Ceiling: 2 ppm F	TWA: 3 ppm F TWA: 2.5 mg/m ³ dust (vacated) TWA: 3 ppm F (vacated) TWA: 2.5 mg/m ³ (vacated) STEL: 6 ppm F	IDLH: 30 ppm Ceiling: 6 ppm 15 min Ceiling: 5 mg/m ³ 15 min TWA: 3 ppm TWA: 2.5 mg/m ³
Phosphoric Acid 7664-38-2	STEL: 3 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³ (vacated) STEL: 3 mg/m ³	IDLH: 1000 mg/m ³ TWA: 1 mg/m ³ STEL: 3 mg/m ³

NIOSH IDLH Immediately Dangerous to Life or Health

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Showers. Eyewash stations. Brush on or apply at the lowest practical pressure. Do not atomize during application. Beware of wind drift. Application equipment, scaffolding, swing stages and support systems must be constructed of acid resistant materials. Proper work practices and planning should be utilized to avoid contact with workers, passersby, and non-masonry surfaces. Ensure adequate ventilation, especially in confined areas.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Irritating
Appearance	clear	Odor threshold	No information available
Color	colorless		
Property	Values	Remarks • Method	
pH	2.2	@ 1:3 Dilution	
Melting point/freezing point	No information available	Not Applicable	
Boiling point/boiling range	No information available	Not Applicable	
Flash point		Not Applicable	
Evaporation rate	No information available		
Flammability (solid, gas)	No information available		
Flammability Limits in Air			
Upper flammability limits	No information available		
Lower flammability limit	No information available		
Vapor pressure	No information available		
Vapor density	No information available		
Specific Gravity	1.18		
Water solubility	completely soluble		
Solubility in other solvents	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		
Decomposition temperature	No information available		
Kinematic viscosity	No information available		
Dynamic viscosity	No information available		

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Strong bases.

Incompatible materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Hydrogen fluoride.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Corrosive Fatal if inhaled Fatal if swallowed Fatal in contact with skin
Inhalation	Poison - may be fatal if inhaled.
Eye contact	Corrosive to the eyes and may cause severe damage including blindness.
Skin Contact	May be fatal if absorbed through skin.
Ingestion	May be fatal if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Hydrogen Fluoride 7664-39-3	-	-	= 850 mg/m ³ (Rat) 1 h = 1276 ppm (Rat) 1 h
Phosphoric Acid 7664-38-2	= 1530 mg/kg (Rat)	= 2730 mg/kg (Rabbit)	> 850 mg/m ³ (Rat) 1 h
Glycolic Acid 79-14-1	= 1950 mg/kg (Rat)	-	= 7.7 mg/L (Rat) 4 h
Citric acid 77-92-9	= 3000 mg/kg (Rat)	-	-
Nonionic surfactant	= 4190 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms The product causes burns of eyes, skin and mucous membranes. Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.

Germ cell mutagenicity	No information available.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Chronic toxicity	Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.
Target Organ Effects	Eyes, Respiratory system, Skin.
Aspiration hazard	No information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	31 mg/kg
ATEmix (dermal)	31 mg/kg
ATEmix (inhalation-gas)	3233 mg/l
ATEmix (inhalation-dust/mist)	0.3 mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Hydrogen Fluoride 7664-39-3	-	660: 48 h Leuciscus idus mg/L LC50	-	270: 48 h Daphnia species mg/L EC50
Phosphoric Acid 7664-38-2	-	3 - 3.5: 96 h Gambusia affinis mg/L LC50	-	4.6: 12 h Daphnia magna mg/L EC50
Glycolic Acid 79-14-1	-	5000: 96 h Brachydanio rerio mg/L LC50 static	-	-
Citric acid 77-92-9	-	1516: 96 h Lepomis macrochirus mg/L LC50 static	-	120: 72 h Daphnia magna mg/L EC50

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Chemical Name	Partition coefficient
Hydrogen Fluoride 7664-39-3	-1.4
Glycolic Acid 79-14-1	-1.11
Citric acid 77-92-9	-1.72

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Do not reuse container.
US EPA Waste Number	D002

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT	Regulated
UN/ID No	UN2922
Proper shipping name	Corrosive liquid, toxic, n.o.s. (Hydrofluoric and Phosphoric Acid)
Hazard Class	8
Subsidiary class	(6.1)
Packing Group	II

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Hydrogen Fluoride - 7664-39-3	7664-39-3	10 - 30	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Hydrogen Fluoride 7664-39-3	100 lb	-	-	X
Phosphoric Acid 7664-38-2	5000 lb	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Hydrogen Fluoride 7664-39-3	100 lb	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ
Phosphoric Acid 7664-38-2	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Phosphoric Acid 7664-38-2	X	X	X
Sulfuric Acid 7664-93-9	X	X	X

16. OTHER INFORMATION

NFPA	Health hazards 3	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 3	Flammability 0	Physical hazards 0	Personal protection X

Prepared By Regulatory Department
Issue Date 24-Nov-2014
Revision Date 24-Nov-2014
Revision Note

No information available

Disclaimer

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End of Safety Data Sheet



PROSOCO®

Sure Klean®

CLEANING & PROTECTIVE TREATMENTS

Heavy Duty Restoration Cleaner NE

Sure Klean® Heavy Duty Restoration Cleaner NE is a concentrated acidic cleaner specifically made to attack and wipe out the heaviest atmospheric staining the Northeast U.S. urban and industrial environment can produce on brick, terra cotta, granite, sandstone and more.

Used carefully, this ultra-powerful formulation breaks loose and dissolves the decades of dirt, paint oxidation, carbon buildup and other atmospheric pollutants that can prove too difficult for other cleaners. A simple cold-water rinse removes these unsightly, stubborn stains, revealing the masonry's original beauty.

ADVANTAGES

- Specially formulated to clean the worst carbon staining and grime the Northeast urban environment can produce.
- Proven effective on the dirtiest masonry.
- Safer than sandblasting. Will not damage masonry when properly used.

Limitations

- Repeated application, or dilutions with less than three parts fresh water, may damage some masonry surfaces. Use Sure Klean® Light Duty Restoration Cleaner or Sure Klean® Restoration Cleaner where possible.
- Not for interior use. Use Sure Klean® Light Duty Restoration Cleaner.
- Not suitable for polished stone and glazed surfaces. Use Sure Klean® Light Duty Restoration Cleaner.
- May etch window glass.

REGULATORY COMPLIANCE

VOC Compliance

Sure Klean® Heavy Duty Restoration Cleaner NE is compliant with all national, state and district VOC regulations.

TYPICAL TECHNICAL DATA

FORM	Clear, colorless liquid
SPECIFIC GRAVITY	1.18
pH	2.2 @ 1:3 dilution
WT/GAL	9.78 lbs
ACTIVE CONTENT	not applicable
TOTAL SOLIDS	not applicable
VOC CONTENT	not applicable
FLASH POINT	not applicable
FREEZE POINT	no data
SHELF LIFE	3 years in tightly sealed, unopened container

SAFETY INFORMATION

Always read full label and SDS for precautionary instructions before use. Use appropriate safety equipment and job site controls during application and handling.

24-Hour Emergency Information:
INFOTRAC at 800-535-5053

Product Data Sheet

Sure Klean® Heavy Duty Restoration Cleaner NE

PREPARATION

Protect people, vehicles, property, plants, metal, glass, wood, and all non masonry and acid-sensitive surfaces from product, splash, residue, fumes and wind drift. Protect and/or divert auto and pedestrian traffic.

Avoid exposing building occupants to fumes. On occupied buildings, cover all windows, air intakes and exterior air conditioning vents. Shut down air handling equipment during cleaning and until surfaces are thoroughly dry. Fumes attack glass, metal and all other acid-sensitive surfaces.

Finish cleaning before installing windows, doors, hardware, light fixtures, roofing materials and other non masonry items that may be damaged by cleaner. If already installed, protect before cleaning.

All caulking and sealant materials should be in place and thoroughly cured before cleaning begins.

Recommended for these substrates. Always test. Coverage is in sq.ft./m. per gallon of concentrate.

<i>Substrate</i>	<i>Type</i>	<i>Use?</i>	<i>Coverage</i>
Architectural Concrete Block	Burnished	no	N/A
	Smooth	no	
	Split-faced	no	
	Ribbed	no	
Concrete	Brick	no	N/A
	Tile	no	
	Precast Panels	no	
	Pavers	no	
	Cast-in-place	no	
Fired Clay	Brick	yes	125–400 sq.ft. 28–47 sq.m.
	Tile	yes	
	Terra Cotta	yes	
	Pavers	yes	
Marble, Travertine, Limestone	Polished	no	N/A
	Unpolished	no	N/A
Granite	Polished	no	N/A
	Unpolished	yes	300–600 sq.ft. 37–56 sq.m.
Sandstone	Unpolished	yes	250–500 sq.ft. 28–47 sq.m.
Slate	Unpolished	yes	300–600 sq.ft. 37–56 sq.m.

Repeated applications may damage some surfaces. Always test to ensure desired results. Coverage estimates depend on surface texture and porosity.

Surface and Air Temperatures

Best air and masonry surface temperatures for cleaning are 40° F (4° C) or above. Cleaning when temperatures are below freezing or will be overnight may harm masonry. If freezing conditions existed before application, let masonry thaw.

Equipment

Use an acid-resistant brush or low-pressure (50 psi max) airless spray equipment. Fit equipment with acid-resistant hoses and gaskets to avoid discoloration. Do not apply with pressure spray above 50 psi. Higher pressure drives the chemicals deep into the surface, making complete rinse difficult. Staining may result.

Rinse with enough water and pressure to flush spent cleaner and dissolved soiling from the masonry surface and surface pores without damage. Inadequate rinsing leaves residues which may stain the cleaned surface.

Masonry-washing equipment generating 400–1000 psi with a water flow rate of 6–8 gallons per minute is the best water/pressure combination for rinsing porous masonry. Use a 15–45° fan spray tip. Heated water (150–180° F; 65–82° C) may improve cleaning efficiency. Use adjustable equipment for reducing water flow-rates and rinsing pressure as needed for sensitive surfaces. Rinsing pressures greater than 1000 psi and fan spray tips smaller than 15° may permanently damage sensitive masonry. Water flow-rates less than 6 gallons per minute may reduce cleaning productivity and contribute to uneven cleaning results.

Storage and Handling

Store in a cool, dry place with adequate ventilation. Always seal container after dispensing. Do not alter or mix with other chemicals. Published shelf life assumes upright storage of factory-sealed containers in a dry place. Maintain temperature of 45–100° F (7–38° C). Do not double stack pallets. Dispose of unused product and container in accordance with local, state and federal regulations.

APPLICATION

Read “Preparation” and the Safety Data Sheet before use.

ALWAYS TEST a small area of each surface to confirm suitability and desired results before beginning overall application. Test each type of masonry and each type of stain. Test with the same equipment, recommended surface preparation and application

Product Data Sheet

Sure Klean® Heavy Duty Restoration Cleaner NE

procedures planned for general application. Let test area dry 3–7 days before inspection and approval. Make the test panel available for comparison throughout the cleaning project.

Dilution

Heavy Duty Restoration Cleaner NE must be diluted with fresh water before application. Failure to dilute this high-powered cleaner may result in bleaching of the masonry's natural color.

Dilute 1 part concentrate to 3 parts water, depending on test results. When diluting, always pour water into bucket first, then carefully add product. Acidic materials attack metal. Use polyethylene or polypropylene buckets only.

Application Instructions

1. Working from bottom to top, prewet the surface with clean water.
2. Apply cleaner using a brush or low-pressure spray.
3. Leave the cleaner on the surface for 3 to 5 minutes. Reapply. Gently scrub heavily soiled areas. Do not let cleaner dry on the surface. If drying occurs, lightly wet treated surfaces with fresh water and reapply, gently scrubbing.
4. Rinse with a low-pressure flood rinse to remove initial acidic residue with minimum risk of wind drift.
5. Rinse thoroughly using high-pressure spray, from the bottom of the treated area to the top covering each section of the surface with a concentrated stream of water. To avoid streaking, keep wall below wet and rinsed free of cleaner and residues.

Cleanup

Clean tools and equipment using fresh water.

WARRANTY

The information and recommendations made are based on our own research and the research of others, and are believed to be accurate. However, no guarantee of their accuracy is made because we cannot cover every possible application of our products, nor anticipate every variation encountered in masonry surfaces, job conditions and methods used. The purchasers shall make their own tests to determine the suitability of such products for a particular purpose.

PROSOCO, Inc. warrants this product to be free from defects. **Where permitted by law, PROSOCO makes no other warranties with respect to this product, express or implied, including**

without limitation the implied warranties of merchantability or fitness for particular purpose.

The purchaser shall be responsible to make his own tests to determine the suitability of this product for his particular purpose. PROSOCO's liability shall be limited in all events to supplying sufficient product to re-treat the specific areas to which defective product has been applied. Acceptance and use of this product absolves PROSOCO from any other liability, from whatever source, including liability for incidental, consequential or resultant damages whether due to breach of warranty, negligence or strict liability. This warranty may not be modified or extended by representatives of PROSOCO, its distributors or dealers.

CUSTOMER CARE

Factory personnel are available for product, environment and job-safety assistance with no obligation. Call 800-255-4255 and ask for Customer Care – technical support.

Factory-trained representatives are established in principal cities throughout the continental United States. Call Customer Care at 800-255-4255, or visit our web site at www.prosoco.com, for the name of the PROSOCO representative in your area.

BEST PRACTICES

Do not apply with pressure spray above 50 psi. Higher pressure drives the chemicals deep into the surface, making complete rinse difficult. Staining may result.

Heavy Duty Restoration Cleaner NE must be diluted with fresh water before application. Failure to dilute this high-powered cleaner may result in bleaching of the masonry's natural color.

Rinse with enough water and pressure to flush spent cleaner and dissolved soiling from the masonry surface and surface pores without damage. Inadequate rinsing leaves residues which may stain the cleaned surface.

Never go it alone. For problems or questions, contact your local PROSOCO distributor or field representative. Or call PROSOCO technical Customer Care toll-free at 800-255-4255.



PROSOCO®

Sure Klean®

CLEANING & PROTECTIVE TREATMENTS

Restoration Cleaner

Sure Klean® Restoration Cleaner is a concentrated compound formulated as a carbon solubilizer. Used properly, it cleans brick, granite, sandstone, terra cotta, many exposed aggregate surfaces and other masonry except limestone, marble or concrete. This product has been safely and effectively used to clean historic structures throughout the United States and Canada.

When properly used, Sure Klean® Restoration Cleaner is safer and less expensive than sandblasting or steam cleaning. Application to masonry surfaces loosens and dissolves dirt, paint oxidation, carbon buildup and other atmospheric pollutants. A simple cold-water rinse removes unsightly stains.

ADVANTAGES

- Proven effective for cleaning dirty and heavily carboned buildings.
- Safer than sandblasting. Will not pit or damage the masonry when properly applied.

Limitations

- May etch window glass.
- Not suitable for cleaning of limestone, concrete or marble surfaces. See Sure Klean® Limestone Restorer or Sure Klean® 766 Limestone & Masonry Prewash literature for these applications.
- Not recommended for interior use. Contact PROSOCO's Customer Care (800-255-4255) for recommendations for the most appropriate Sure Klean® or Enviro Klean® interior cleaning system.

REGULATORY COMPLIANCE

VOC Compliance

Sure Klean® Restoration Cleaner is compliant with all national, state and district VOC regulations.

TYPICAL TECHNICAL DATA

FORM	Clear, colorless liquid
SPECIFIC GRAVITY	1.050
pH	2.2 @ 1:3 dilution
WT/GAL	8.75 lbs
ACTIVE CONTENT	not applicable
TOTAL SOLIDS	not applicable
VOC CONTENT	not applicable
FLASH POINT	not applicable
FREEZE POINT	no data
SHELF LIFE	3 years in tightly sealed, unopened container

SAFETY INFORMATION

Always read full label and SDS for precautionary instructions before use. Use appropriate safety equipment and job site controls during application and handling.

24-Hour Emergency Information:
INFOTRAC at 800-535-5053

Product Data Sheet

Sure Klean® Restoration Cleaner

PREPARATION

Protect people, vehicles, property, plants, metal, and all non masonry and acid-sensitive surfaces from contact with cleaner, rinse residue, fumes and wind drift. Protect/divert auto and foot traffic. Clean when traffic is at a minimum.

Maintain sufficient ventilation to avoid buildup of potentially damaging fumes. Avoid exposing building occupants to fumes. On occupied buildings, cover all windows, air intakes and exterior air conditioning vents. Shut down air handling equipment during cleaning and until surfaces are thoroughly dry. Fumes attack glass, metal and all other acid-sensitive surfaces.

Clean masonry before installing windows, doors, finished flooring, metal fixtures, hardware, light fixtures, roofing materials and other non masonry items. If already installed, protect with Sure Klean® Strippable Masking or polyethylene before application.

Recommended for these substrates. Always test. Coverage is in sq.ft./m. per gallon of concentrate.			
Substrate	Type	Use?	Coverage
Architectural Concrete Block	Burnished	no	N/A
	Smooth	no	
	Split-faced	no	
	Ribbed	no	
Concrete	Brick	no	N/A
	Tile	no	
	Precast Panels	no	
	Pavers	no	
	Cast-in-place	no	
Fired Clay	Brick	yes	125–400 sq.ft. 12–37 sq.m.
	Tile	yes	
	Terra Cotta	yes	
	Pavers	yes	
Marble, Travertine, Limestone	Polished	no	N/A
	Unpolished	no	N/A
Granite	Polished	no	N/A
	Unpolished	yes	200–500 sq.ft. 19–47 sq.m.
Sandstone	Unpolished	yes	125–400 sq.ft. 12–37 sq.m.
Slate	Unpolished	yes	200–500 sq.ft. 19–47 sq.m.
Always test to ensure desired results. Coverage estimates depend on surface texture and porosity.			

All caulking and sealant materials should be in place and thoroughly cured before cleaning.

Restoration Cleaner is corrosive, etches glass and architectural aluminum and is harmful to wood, painted surfaces and foliage. Inspect glazed terra cotta and tile carefully. Where glaze has been partially weathered away or etched, cleaning may cause additional loss of glaze.

Surface and Air Temperatures

Best cleaning temperatures are 40° F (4° C) or above for air and masonry. Cleaning when temperatures are below freezing or will be overnight may harm masonry. If freezing conditions have existed, let the masonry thaw before cleaning.

Equipment

Apply using low pressure (50 psi max) spray, roller or densely filled (tampico) masonry washing brush. Do not apply with high pressure spray. This drives the chemicals deep into the surface, making rinse difficult. Discoloration may result.

Rinse with enough water and pressure to flush spent cleaner and dissolved soiling from the masonry surface and surface pores without damage. Inadequate rinsing leaves residues which may stain the cleaned surface.

Masonry-washing equipment generating 400–1000 psi with a water flow rate of 6–8 gallons per minute is the best water/pressure combination for rinsing porous masonry. Use a 15–45° fan spray tip. Heated water (150–180° F; 65–82° C) may improve cleaning efficiency. Use adjustable equipment for reducing water flow-rates and rinsing pressure as needed for sensitive surfaces.

Rinsing pressures greater than 1000 psi and fan spray tips smaller than 15° may permanently damage sensitive masonry. Water flow-rates less than 6 gallons per minute may reduce cleaning productivity and contribute to uneven cleaning results.

Storage and Handling

Store in a cool, dry place with adequate ventilation. Always seal container after dispensing. Do not alter or mix with other chemicals. Published shelf life assumes upright storage of factory-sealed containers in a dry place. Maintain temperature of 45–100° F (7–38° C). Do not double stack pallets. Dispose of unused product and container in accordance with local, state and federal regulations.

Product Data Sheet

Sure Klean® Restoration Cleaner

APPLICATION

Read “Preparation” and the Safety Data Sheet before use.

ALWAYS TEST a small area of each surface to confirm suitability and desired results before beginning overall application. Test each type of masonry and each type of stain. Test with the same equipment, recommended surface preparation and application procedures planned for general application. Let test area dry 3–7 days before inspection and approval. Make the test panel available for comparison throughout the cleaning project.

Dilution

Always pour water into empty bucket first, then carefully add concentrate. Handle in polypropylene or polyethylene buckets only. Acidic liquids and fumes attack metal.

Porous Masonry: Use concentrate during initial testing. If concentrate cleans effectively, run tests with diluted solutions of up to 3 parts water to 1 part concentrate. Use the mildest effective solution based on test results.

Nonporous Masonry (glazed brick & terra cotta): Dilute with 1 to 3 parts water to 1 part product concentrate, depending on test results. Sure Klean® Restoration Cleaner is an acidic product and may etch polished and glazed surfaces. Etching can be controlled by dilution.

Application Instructions

1. After protecting all non masonry surfaces, thoroughly prewet the area to be cleaned with fresh water, working from the bottom to the top.
2. Apply the cleaning solution liberally.

3. Leave the cleaning solution on the surface for 3–5 minutes. Reapply. Light scrubbing improves cleaning results especially if high-pressure rinsing equipment isn't available. Keep people away from treated surfaces. Do not let the cleaning solution “dry in” to the masonry – bleaching may occur.
4. Water rinse with low-pressure, flood rinse to remove initial acidic residue with minimum risk of wind drift. Then rinse the treated area thoroughly with high-pressure spray. Rinse from the bottom to the top. Flush each section of the surface with a concentrated stream of water. Keep the wall below wet and rinsed free of cleaner and residues to avoid streaks.

On severely stained horizontal surfaces under window sills, eaves, etc., pretreating with Sure Klean® 766 Limestone & Masonry Prewash may prove effective. Read and follow product procedures and recommendations. Pressure rinse, then “afterwash” with Sure Klean® Restoration Cleaner followed by water rinse.

Cleanup

Clean tools and equipment using fresh water.

Maintenance

A breathable water repellent makes the cleaned surface less likely to stain and keeps the surface clean longer. It also makes future cleaning operations faster and easier. For more information about water repellents for masonry, contact PROSOCO's Customer Care (800-255-4255) regarding Sure Klean® Weather Seal products.

BEST PRACTICES

Restoration Cleaner is corrosive, etches glass and architectural aluminum and is harmful to wood, painted surfaces and foliage. Inspect glazed terra cotta and tile carefully. Where glaze has been partially weathered away or etched, cleaning may cause additional loss of glaze.

On severely stained horizontal surfaces, under window sills, eaves, etc., pretreatment with Sure Klean® 766 Limestone & Masonry Prewash may prove effective. Read and follow product procedures and recommendations.

When diluting, always pour water into empty bucket first, then carefully add product

concentrate. Use the mildest effective solution based on test results.

Apply using low pressure spray, 50 psi maximum. Do not apply with high pressure spray. This drives the chemicals deep into the surface, making rinse difficult. Discoloration may result.

A breathable water repellent makes the cleaned surface less likely to stain and keeps the surface clean longer. For more information about water repellents for masonry, contact PROSOCO's Customer Care at 800-255-4255.

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Product Data Sheet

Sure Klean® Restoration Cleaner

WARRANTY

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SAFETY DATA SHEET

PROSOCO, Inc.



Issue Date 25-Nov-2014

Revision Date 25-Nov-2014

Version 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Sure Klean® Restoration Cleaner

Other means of identification

Product Code 20030
UN/ID No UN2922

Recommended use of the chemical and restrictions on use

Recommended Use Restricted to professional users.
Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address
PROSOCO, Inc.
3741 Greenway Circle
Lawrence, Kansas 66046

Emergency telephone number

8:00 AM – 5:00 PM CST Monday-Friday 785-865-4200
NON-BUSINESS HOURS (INFOTRAC) 800-535-5053

2. HAZARDS IDENTIFICATION

Classification

Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 2
Acute toxicity - Inhalation (Gases)	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (repeated exposure)	Category 2

Label elements

Emergency Overview

Danger

Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment

Hazard statements

Toxic if swallowed
Fatal in contact with skin
Toxic if inhaled
Causes severe skin burns and eye damage
May cause damage to organs through prolonged or repeated exposure

**Appearance** clear**Physical state** Liquid**Odor** Irritating**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not get in eyes, on skin, or on clothing
Wear protective gloves/protective clothing/eye protection/face protection
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician
Specific treatment is urgent (see TREATMENT FOR HYDROFLUORIC ACID EXPOSURE on this label)
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
Immediately call a POISON CENTER or doctor/physician
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
Immediately call a POISON CENTER or doctor/physician
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth
Do NOT induce vomiting

Precautionary Statements - Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)**Other Information****3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	CAS No	Weight-%	Trade Secret
Water	7732-18-5	60 - 100	*
Hydrogen Fluoride	7664-39-3	3 - 7	*
Phosphoric Acid	7664-38-2	1 - 5	*
Glycolic Acid	79-14-1	1 - 5	*
Ethylene Glycol	107-21-1	1 - 5	*
Nonionic Surfactant	Proprietary	1 - 5	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

General advice	Immediate medical attention is required.
Eye contact	Keep eye wide open while rinsing. Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Do not rub affected area. Rinse the eyes with a calcium gluconate 1% solution.
Skin Contact	Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediately apply calcium gluconate gel 2.5% and massage into the affected area using rubber gloves; continue to massage while repeatedly applying gel until 15 minutes after pain is relieved.
Inhalation	Remove to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. Call a physician or poison control center immediately.
Self-protection of the first aider	Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms	Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment. The product causes burns of eyes, skin and mucous membranes.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically. Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment.
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5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required. Evacuate personnel to safe areas. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental precautions

Environmental precautions Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE**Precautions for safe handling**

Advice on safe handling Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation, especially in confined areas. In case of insufficient ventilation, wear suitable respiratory equipment.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Keep out of the reach of children.

Incompatible materials Incompatible with strong acids and bases. Incompatible with oxidizing agents. Strong reducing agents. Metals.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hydrogen Fluoride 7664-39-3	TWA: 0.5 ppm F TWA: 2.5 mg/m ³ F S* Ceiling: 2 ppm F	TWA: 3 ppm F TWA: 2.5 mg/m ³ F TWA: 2.5 mg/m ³ dust (vacated) TWA: 3 ppm F (vacated) TWA: 2.5 mg/m ³ (vacated) STEL: 6 ppm F	IDLH: 30 ppm Ceiling: 6 ppm 15 min Ceiling: 5 mg/m ³ 15 min TWA: 3 ppm TWA: 2.5 mg/m ³
Phosphoric Acid 7664-38-2	STEL: 3 mg/m ³ TWA: 1 mg/m ³	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³ (vacated) STEL: 3 mg/m ³	IDLH: 1000 mg/m ³ TWA: 1 mg/m ³ STEL: 3 mg/m ³
Ethylene Glycol 107-21-1	Ceiling: 100 mg/m ³ aerosol only	(vacated) Ceiling: 50 ppm (vacated) Ceiling: 125 mg/m ³	-

NIOSH IDLH *Immediately Dangerous to Life or Health*

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Showers. Eyewash stations. Ventilation systems. Brush on or apply at the lowest practical pressure. Do not atomize during application. Beware of wind drift. Proper work practices and planning should be utilized to avoid contact with workers, passersby, and non-masonry surfaces.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Skin and body protection Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Irritating
Appearance	clear	Odor threshold	No information available
Color	colorless		
<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>	
pH	1.33	@ 1:3 Dilution	
Melting point/freezing point	No information available		
Boiling point/boiling range	No information available		
Flash point		Not Applicable	
Evaporation rate	No information available		
Flammability (solid, gas)	No information available		
Flammability Limits in Air		Not Applicable	
Upper flammability limits	No information available		
Lower flammability limit	No information available		
Vapor pressure	No information available		
Vapor density	No information available		
Specific Gravity	1.050		
Water solubility	completely soluble		
Solubility in other solvents	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		
Decomposition temperature	No information available		
Kinematic viscosity	No information available		
Dynamic viscosity	No information available		

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Heat.

Incompatible materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents. Strong reducing agents. Metals.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Corrosive Fatal if swallowed Fatal in contact with skin May be fatal if inhaled
Inhalation	Avoid breathing vapors or mists. Poison - may be fatal if inhaled.
Eye contact	Corrosive to the eyes and may cause severe damage including blindness.
Skin Contact	May be fatal if absorbed through skin. Causes severe burns.
Ingestion	May be fatal if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Hydrogen Fluoride 7664-39-3	-	-	= 850 mg/m ³ (Rat) 1 h = 1276 ppm (Rat) 1 h
Phosphoric Acid 7664-38-2	= 1530 mg/kg (Rat)	= 2730 mg/kg (Rabbit)	> 850 mg/m ³ (Rat) 1 h
Glycolic Acid 79-14-1	= 1950 mg/kg (Rat)	-	= 7.7 mg/L (Rat) 4 h
Ethylene Glycol 107-21-1	= 4000 mg/kg (Rat)	= 9530 µL/kg (Rabbit)	-
Nonionic Surfactant	= 4190 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms	The product causes burns of eyes, skin and mucous membranes. Burns from this product may not be immediately painful or evident. Exposures require fluoride specific treatment.
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	No information available.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	Target Organs.

Chronic toxicity

Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.

Target Organ Effects

central nervous system, Eyes, Respiratory system, Skin.

Aspiration hazard

No information available.

Numerical measures of toxicity - Product Information**Unknown Acute Toxicity**

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	99 mg/kg
ATEmix (dermal)	99 mg/kg
ATEmix (inhalation-gas)	10335 mg/l
ATEmix (inhalation-dust/mist)	0.8 mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Hydrogen Fluoride 7664-39-3	-	660: 48 h <i>Leuciscus idus</i> mg/L LC50	-	270: 48 h <i>Daphnia</i> species mg/L EC50
Phosphoric Acid 7664-38-2	-	3 - 3.5: 96 h <i>Gambusia</i> <i>affinis</i> mg/L LC50	-	4.6: 12 h <i>Daphnia magna</i> mg/L EC50
Glycolic Acid 79-14-1	-	5000: 96 h <i>Brachydanio rerio</i> mg/L LC50 static	-	-
Ethylene Glycol 107-21-1	6500 - 13000: 96 h <i>Pseudokirchneriella</i> <i>subcapitata</i> mg/L EC50	41000: 96 h <i>Oncorhynchus</i> <i>mykiss</i> mg/L LC50 14 - 18: 96 h <i>Oncorhynchus mykiss</i> mL/L LC50 static 27540: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 40761: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 40000 - 60000: 96 h <i>Pimephales promelas</i> mg/L LC50 static 16000: 96 h <i>Poecilia reticulata</i> mg/L LC50 static	-	46300: 48 h <i>Daphnia magna</i> mg/L EC50

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Chemical Name	Partition coefficient
Hydrogen Fluoride 7664-39-3	-1.4
Glycolic Acid 79-14-1	-1.11
Ethylene Glycol 107-21-1	-1.93

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Do not reuse container.
US EPA Waste Number	D002

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

<u>DOT</u>	Regulated
UN/ID No	UN2922
Proper shipping name	Corrosive liquid, toxic, n.o.s. (Hydrofluoric and Phosphoric Acid)
Hazard Class	8
Subsidiary class	(6.1)
Packing Group	II

15. REGULATORY INFORMATION**International Inventories**

TSCA	Complies
DSL/NDSL	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Hydrogen Fluoride - 7664-39-3	7664-39-3	3 - 7	1.0
Ethylene Glycol - 107-21-1	107-21-1	1 - 5	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Hydrogen Fluoride 7664-39-3	100 lb	-	-	X
Phosphoric Acid 7664-38-2	5000 lb	-	-	X

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Hydrogen Fluoride 7664-39-3	100 lb	100 lb	RQ 100 lb final RQ RQ 45.4 kg final RQ
Phosphoric Acid 7664-38-2	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ
Ethylene Glycol 107-21-1	5000 lb	-	RQ 5000 lb final RQ RQ 2270 kg final RQ

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Phosphoric Acid 7664-38-2	X	X	X
Ethylene Glycol 107-21-1	X	X	X

16. OTHER INFORMATION

NFPA	Health hazards 3	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 3	Flammability 0	Physical hazards 0	Personal protection X

Prepared By Regulatory Department
Issue Date 25-Nov-2014
Revision Date 25-Nov-2014

Revision Note

No information available

Disclaimer

The information contained on the Material Safety Data Sheet has been compiled from data considered accurate. This data is believed to be reliable, but it must be pointed out that values for certain properties are known to vary from source to source. PROSOCO, Inc. expressly disclaims any warranty express or implied as well as any liability for any injury or loss arising from the use of this information or the materials described. This data is not to be construed as absolutely complete since additional data may be desirable when particular conditions or circumstances exist. It is the responsibility of the user to determine the best precautions necessary for the safe handling and use of this product for his unique application. This data relates only to the specific material designated and is not to be used in combination with any other material. Many federal and state regulations pertain directly or indirectly to the product's end use and disposal of containers and unused material. It is the purchaser's responsibility to familiarize himself with all applicable regulations.

End of Safety Data Sheet

A p p e n d i x F
R e c o m m e n d e d P r o d u c t s f o r
B i o l o g i c a l S o i l i n g R e m o v a l

Museo del Barrio
Hecksher Foundation Building
New York, NY



D/2 Biological Solution

Discover the D/2 difference!

D/2 Biological Solution is a biodegradable, easy to use liquid that removes stains from mold, algae, mildew, lichens and air pollutants. It is effective on marble, granite, limestone, brownstone, travertine, masonry, terra cotta, concrete, stucco, wood, and other architectural surfaces including monuments, sculpture and headstones. A contact time of only 10 to 15 minutes followed by scrubbing with a soft nylon or natural bristle brush will loosen most biological and air pollutant staining.

D/2 Biological Solution is effective for removing harmful biological and air pollutant staining from many building materials including masonry, marble, granite, limestone, brownstone, travertine, terra cotta, concrete, stucco, wood, canvas and vinyl & aluminum siding.

Features and Benefits

- **Fast acting:** 10 to 15 minutes contact time for great results.
- **Biodegradable**
- **Contains no acids, salts, or chlorine**
- **pH neutral**
- **Will not etch metals or glass**
- **Safer to use around plantings**
- **Is not a hazardous material and requires no special handling or protection**
- **Use full strength, no in-field mixing required**
- **Shelf life of 5 years**

Application Procedures

Always do a spot test sample before proceeding with project. D/2 works best when air and surface temperatures are 45°F or above. Use D/2 undiluted for best results. In the event of

excessive plant exposure, rinse all plants and water in all planted ground areas.

Immediate Result Method

1. Apply D/2 Biological Solution with a brush, roller, hand pump sprayer (garden style pump sprayer) or low pressure power sprayer.
2. Allow undiluted D/2 to remain on the surface 10-15 minutes.
3. Apply additional D/2 as necessary to maintain a wet surface.
4. Scrub with soft nylon or natural bristle brush. **DO NOT USE METAL BRUSH.**
5. Lightly mist with water and continue scrubbing.
6. Rinse thoroughly with clean, potable water.

No Scrub/No Rinse Method

1. Apply D/2 Biological Solution with a brush or pump sprayer to a dry surface. Do not pre-wet the surface.
2. Allow to dry. Repeat if there are heavy biological deposits.

D/2 works with the elements and results occur within one week to one month depending on severity of growth and weather conditions. The surface will become cleaner over time as the subsurface biological growth dies and releases.

Safety Information

D/2 Biological Solution is non-mutagenic, and contains no carcinogenic compounds as defined by NTP, IARC, or OSHA. It is considered essentially non-toxic by swallowing, as it has an oral LD50 of 2.0 g/kg of body weight. No special ventilation is required during use.

Packaging and Coverage

D/2 Biological Solution is available in 1 gallon and 5 gallon containers, and 55 gallon drums. The area that can be treated with one gallon of D/2 will vary considerably as a function of the nature and extent of biological deposits, as well as the physical characteristics of the surface. Typical coverage to remove medium deposits will vary from 250 to 350 square feet per gallon.

Technical Data

Physical Form Transparent, low viscosity liquid

Color Almost colorless

pH 9.5

Specific Gravity 1.01g/cc

Solubility in Water Complete

Vapor Pressure 25 mm Hg @ 20°C

Notice: The information contained herein is based on our own research and the research of others, and it is provided solely as a service to help users. It is believed to be accurate to the best of our knowledge. However, no guarantee of its accuracy can be made, and it is not intended to serve as the basis for determining this product's suitability in any particular situation. For this reason, purchasers are responsible to make their own tests and assume all risks associated with using this product.

10/2012

Section 1: PRODUCT & COMPANY IDENTIFICATION**Product Name:** D/2 Biological Solution

Manufactured By: D/2 Biological Solution
 PO Box 3746
 Westport, MA 02790
 (917) 693-7441
<http://d2bio.com>

**Emergency Phone:** Chem-Tel 24-Hour Emergency Service: (800) 255-3924

Use of Product: D/2 Biological Solution is a biodegradable, easy to use liquid that removes stains from mold, algae, mildew, lichens and air pollutants. It is effective on marble, granite, limestone, brownstone, travertine, masonry, terra cotta, concrete, stucco, wood, and other architectural surfaces including monuments, sculpture and headstones.

Section 2: HAZARDS IDENTIFICATION

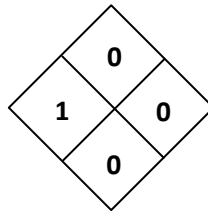
D/2 Biological Solution is a colorless liquid with a very faint detergent-like odor.

It is non-flammable, non-combustible, non-explosive, and non-reactive.

Hazard Rating (NFPA/HMIS)

Health = 1* Reactivity = 0
 Fire = 0 Special = 0

* Mild eye irritant, non-mutagenic and non-carcinogenic

**Rating Scale**

0 = Minimal 1 = Slight 2 = Moderate
 3 = Serious 4 = Severe

Eye Contact: Eye Irritant.

Skin Contact: Prolonged skin contact with D/2 Biological Solution may irritate the skin. Repeated daily application to the skin without rinsing, or continuous contact of D/2 Biological Solution on the skin may lead to irritation.

Ingestion: Essentially non-toxic. May cause stomach or intestinal upset if swallowed.

Inhalation: No adverse effects expected under typical use conditions. Adequate ventilation should be present when using D/2 Biological Solution over a prolonged period of time. Open windows or ventilate via fan or other air-moving equipment if necessary. Mucous membranes may become irritated by concentrate mist.

Carcinogens: No ingredients are listed by OSHA, IARC, or NTP as known or suspected carcinogens.

Medical Conditions: No medical conditions are known to be aggravated by exposure to D/2 Biological Solution.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS**Ingredients**

Surfactants
 Wetting Agents
 Buffers

CAS Number

Proprietary
 Proprietary
 Proprietary

OSHA PEL ACGIH TLV

None established
 None established
 None established

Section 4: FIRST AID MEASURES

- If in Eyes:** Immediately rinse the eye with large quantities of cool water; if present, contact lenses should be removed after 5 minutes of rinsing; continue rinsing 10-15 minutes more. Both upper and lower lids should be lifted to facilitate thorough rinsing.
- If on Skin:** Minimal effects, if any, from diluted product; rinse skin with water, rinse shoes and launder clothing before reuse. Reversible reddening may occur in some dermal-sensitive users; thoroughly rinse area.
- If Inhaled:** Use in well-ventilated area, or use adequate protection from inhaling mist during spray applications. Prolonged exposure of workers to concentrate-mist during spray application may cause mild irritation of nasal passages or throat. If this happens, relocate workers to fresh air.
- If Ingested:** Give several glasses of milk or water to dilute; do not induce vomiting. If stomach upset occurs, consult physician.

Section 5: FIRE FIGHTING MEASURES

- Extinguishing Media:** Not flammable/non-explosive. No special procedures required.
- Special Fire Fighting Procedures:** None required.

Section 6: ACCIDENTAL RELEASE MEASURES

- Personal Precautions:** Avoid contact with eyes. Do not rub eyes with hands during cleanup. No special precautions for dermal contact are needed. Wash hands thoroughly after cleaning up spill or leak.
- Procedure to follow in case of spill or leak:** Evacuate area. Identify source of leak or spill and contain with sand, earth, or containment bin. Then proceed to clean up spill or leak.
- Method for cleaning up:** Recover all usable material. Residual may be removed by wipe or wet mope. Rinse area with plenty of water and mop to sanitary sewer.

Section 7: HANDLING AND STORAGE

No special handling is required. Keep in a closed plastic container. Store at ambient temperature. Avoid contact with eyes. Wash hands thoroughly after handling. **This product is non-hazardous for storage and transport according to the U.S. Department of Transportation Regulations.**

This material does not meet the definition of a hazardous material according to 49 CFR, ICAO, IMDG and the UN Orange Book.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

- Precautionary measures:** No special requirements under normal use conditions.
- Exposure Limits:** The D/2 Biological Solution formulation presents no health hazards to the user, other than mild eye irritancy.
- Eye protection:** Caution, including reasonable eye protection, should always be used to avoid eye contact where splashing may occur, such as during spray applications.
- Respiratory Protection:** No special precautions required.
- Ventilation:** No special ventilation is required during normal use.
- Skin protection:** No special precautions required; rinse completely from skin after contact.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (cont'd)

General hygiene conditions: There are no known hazards associated with this material when used as recommended. The following general hygiene considerations are recognized as common good industrial hygiene practices:

- Avoid breathing vapor or mist.
- Avoid contact with eyes.
- Wash thoroughly after handling and before eating, drinking, or smoking.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear Liquid	Freezing Point:	-9 °C (16 °F)
Odor:	Very faint detergent-like odor	Boiling Point:	98 °C (209 °F)
pH:	9.5	Specific Gravity:	1.011
Evaporation Rate:	0.4 (butyl acetate = 1)	Vapor Pressure:	20.7 mm Hg
Water Solubility:	100%	Vapor Density:	1.3 (air = 1)

Section 10: STABILITY AND REACTIVITY

Stability: Stable.

Materials to Avoid: Contains ammoniated compounds – do not mix with bleach, tub & tile cleaner, mold/mildew removers, or chlorinated compounds.

Hazardous Decomposition Products: None expected

Section 11: TOXICOLOGICAL INFORMATION

Toxicity Data: Available from relevant laboratory testing of ingredients or similar mixtures.

Acute Toxicity: Oral LD50: >2.0 g/kg body weight Dermal LD50: Not estimated

Eye Irritation: With or without rinsing with water, the irritation scores in rabbits at 24 hours did not exceed 17 (mild irritant) on a scale of 110 (extremely irritating); all scores were normal at seven days.

Dermal Irritation: In a standard test on rabbits, mild irritation was found at 72 hours; well-defined reddening was observed at 7 and 14 days after exposure.

Dermal Sensitization: No allergic reactions occurred in guinea pigs treated with D/2 Biological Solution.

Carcinogenicity: D/2 Biological Solution contains no carcinogenic compounds as defined by the National Toxicology Program (NTP), the international Agency for Research on Carcinogens (IARC), or the Occupational Health and Safety Administration (OSHA).

Section 12: ECOLOGICAL INFORMATION

Biodegradability: All components are inherently biodegradable.

Ecotoxicity: Not Tested.

Section 13: DISPOSAL CONSIDERATIONS

Unused Product: Dilute with water 1:10 (1 part D/2 to 10 parts water) and dispose by sanitary sewer.

Used Product: Used product may be hazardous depending on the cleaning application and resulting contaminants.

Empty Containers: Triple-rinse with water and offer for recycling if available. Otherwise, dispose as non-hazardous waste.

Dispose of used or unused product, and empty containers in accordance with the local, State, Provincial, and Federal regulations for your location. Never dispose of used degreasing rinsates into lakes, streams, and open bodies of water or storm drains.

Section 14: TRANSPORT INFORMATION

This product is non-hazardous for storage and transport according to the U.S. Department of Transportation Regulations. D/2 Biological Solution requires no special labeling or placarding to meet U.S. Department of Transportation requirements.

IATA Proper Shipping Name: Detergent solution

Hazard Class: Nonhazardous

UN Number: Not Required

Section 15: REGULATORY INFORMATION

Reportable components: None. The U.S. Environmental Protection Agency (EPA) has determined that propylene glycol ethers are not included within the listed category "glycol ethers" under either EPCRA §313 Toxic Release Inventory or Clean Air Act §112 Hazardous Air Pollutants (both lists include only ethylene glycol ethers). Nor are propylene glycol ethers included in the various EPA Resource Conservation and Recovery Act, and Clean Water Act lists, nor the California Proposition 65 lists.

All components are listed on: EINECS and TSCA Inventory

No components listed under: Clean Air Act Section 112

RCRA Status: Not a hazardous waste.

TSCA TRI Reporting: Not required / Not listed

CERCLA Status: No components listed

CA PROP. 65 Status: No components listed

Section 16: OTHER INFORMATION**Technical information contact:**

D/2 Biological Solution

PO Box 3746

Westport, MA 02790

(917) 693-7441

<http://d2bio.com>

DISCLAIMER: All information appearing herein is based upon data obtained by the manufacturer and recognized technical sources. Judgments as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility. Therefore, although reasonable care has been taken in the preparation of this information, D/2 Biological Solutions, inc. or its distributors extends no warranties, makes no representations and assumes no responsibility as to the suitability of such information for application to purchaser's intended purposes or for consequences of its use.



PROSOCO®

Enviro Klean®

NEXT GENERATION CLEANERS

ReKlaim

Enviro Klean® ReKlaim safely removes biological and atmospheric staining from vertical or horizontal masonry surfaces. Effectively removes light-to-severe staining without damage to the surface or the environment caused by more conventional cleaning methods. Use to clean difficult mold and mildew staining that blackens limestone, marble, concrete and other masonry surfaces in humid environments. The two-component ReKlaim system includes a liquid cleaner and a liquid activator. Treated surfaces are neutralized with a solution of Sure Klean® Limestone & Masonry Afterwash diluted 1:1 with clean water.

ADVANTAGES

- Removes mold and mildew staining, and light to heavy atmospheric soiling from masonry and wood.
- Will not damage masonry when properly used.
- Easy to apply with brush, roller or spray.
- Liquid formulation allows for fast and easy mixing.

Limitations

- Do not apply at temperatures below 40°F (4°C).
- On concrete and architectural concrete block, repeated applications may result in surface etching.
- Metal surfaces must be protected from exposure to cleaning solution.
- Not for use on polished marble, polished travertine or polished limestone.
- Suitable for use on wood and some painted surfaces. ALWAYS TEST.

SAFETY INFORMATION

Always read full label and SDS for precautionary instructions before use. Use appropriate safety equipment and job site controls during application and handling.

24-Hour Emergency Information:
INFOTRAC at 800-535-5053

REGULATORY COMPLIANCE

VOC Compliance

Enviro Klean® ReKlaim Cleaner and ReKlaim Activator are compliant with all national, state and district VOC regulations.

TYPICAL TECHNICAL DATA

ReKlaim Cleaner

FORM	Clear, light yellow liquid Soap odor
SPECIFIC GRAVITY	1.09
pH	13.7
WT/GAL	9.10 lbs
ACTIVE CONTENT	not applicable
TOTAL SOLIDS	not applicable
VOC CONTENT	not applicable
FLASH POINT	>200° F (>93° C)
FREEZE POINT	14° F (-10° C)
SHELF LIFE	1 year in tightly sealed, unopened container

ReKlaim Activator

FORM	Clear, colorless liquid Slight odor
SPECIFIC GRAVITY	1.10
pH	2.40
WT/GAL	9.57 lbs
ACTIVE CONTENT	not applicable
TOTAL SOLIDS	not applicable
VOC CONTENT	not applicable
FLASH POINT	not applicable
FREEZE POINT	no data
SHELF LIFE	1 year in tightly sealed, unopened container

Product Data Sheet

Enviro Klean® ReKlaim

PREPARATION

Protect people, vehicles, property, plants, metal and all non masonry and acid-sensitive surfaces from cleaner, rinse, residue, fumes and wind drift. Protect and/or divert auto and pedestrian traffic.

Surface and Air Temperatures

Cleaning effectiveness is reduced when surface and air temperatures fall below 50°F (10°C). Do not apply at temperatures below 40°F (4°C). If freezing conditions exist prior to application, let masonry thaw.

Equipment

Apply using a synthetic roller, soft-bristled brush or spray applicator. Rinse with enough water and pressure to flush spent cleaner and dissolved soiling from the masonry surface and surface pores without damage. Inadequate rinsing leaves residues which may stain the cleaned surface.

Masonry-washing equipment generating 400–1000 psi with a water flow rate of 6–8 gallons per minute is the best water/pressure combination for rinsing porous masonry. Use a 15–45° fan spray tip. Heated water (150–180°F; 65–82°C) may improve cleaning efficiency.

Use adjustable equipment for reducing water flow rates and rinsing pressure as needed for sensitive surfaces. Rinsing pressures greater than 1000 psi and fan spray tips smaller than 15° may permanently damage sensitive masonry. Water flow rates less than 6 gpm may reduce cleaning productivity and contribute to uneven cleaning results.

Storage and Handling

Store in a cool, dry place with adequate ventilation. Always seal container after dispensing. Do not alter or mix with other chemicals. Published shelf life assumes upright storage of factory-sealed containers in a dry place. Maintain temperature of 45–100°F (7–38°C). Do not double stack pallets. Dispose of unused product and container in accordance with local, state and federal regulations.

APPLICATION

Read “Preparation” and the Safety Data Sheet before use.

ALWAYS TEST a small area of each surface to confirm suitability, coverage rate and desired results before beginning overall application. Test

with the same equipment, recommended surface preparation and application procedures planned for general application. Let surface dry thoroughly before inspection.

Mixing Instructions

ReKlaim

For 5-gallons of prepared solution, add 3 gallons clean water to a plastic container. Carefully add 1-gallon of ReKlaim Cleaner, followed by 1-gallon of ReKlaim Activator. Stir thoroughly with a nonmetallic tool. *Prepared solutions must be used immediately.*

Limestone & Masonry Afterwash

Add 1 part clean water to a plastic container. Carefully add 1 part Limestone & Masonry Afterwash to the clean water. Never pour water into cleaner.

Typical Coverage Rates

- *Porous Surfaces:* 85–125 sq.ft. / 8–12 sq.m.
- *Semi-Porous Surfaces:* 85–150 sq.ft. / 8–14 sq.m.
- *Non-Porous Surfaces:* 85–200 sq.ft. / 8–19 sq.m.

Application Instructions

1. Working from the bottom to the top, apply prepared ReKlaim solution to a dry surface.
2. Leave solution on the surface for 5–20 minutes. If solution begins to dry, reapply.
3. Gently scrub heavily soiled areas.
4. Rinse thoroughly with clean water. If using a sponge or string mop to rinse, change rinse water often. Pressure-rinse porous surfaces to remove heavy soiling.
5. Immediately after rinsing ReKlaim from masonry surface, apply the prepared Limestone & Masonry Afterwash to the wet surface.
6. Let the Afterwash dwell for three to five minutes.
7. Pressure rinse from the bottom of the treated area to the top. Make sure to cover each portion of the masonry surface with a concentrated stream of water. To avoid streaking, keep wall surfaces immediately below area being cleaned running wet and free of cleaner rundown and residues.

Cleanup

Clean tools and equipment using fresh water.

Product Data Sheet

Enviro Klean® ReKlaim

WARRANTY

The information and recommendations made are based on our own research and the research of others, and are believed to be accurate. However, no guarantee of their accuracy is made because we cannot cover every possible application of our products, nor anticipate every variation encountered in masonry surfaces, job conditions and methods used. The purchasers shall make their own tests to determine the suitability of such products for a particular purpose.

PROSOCO, Inc. warrants this product to be free from defects. **Where permitted by law, PROSOCO makes no other warranties with respect to this product, express or implied, including without limitation the implied warranties of merchantability or fitness for particular purpose.** The purchaser shall be responsible to make his own tests to determine the suitability of this product for his particular purpose. PROSOCO's liability shall be limited in all events to supplying sufficient product to re-treat the specific areas to which defective product has been applied. Acceptance and use of this product absolves PROSOCO from any other liability, from whatever source, including liability

for incidental, consequential or resultant damages whether due to breach of warranty, negligence or strict liability. This warranty may not be modified or extended by representatives of PROSOCO, its distributors or dealers.

CUSTOMER CARE

Factory personnel are available for product, environment and job-safety assistance with no obligation. Call 800-255-4255 and ask for Customer Care – technical support.

Factory-trained representatives are established in principal cities throughout the continental United States. Call Customer Care at 800-255-4255, or visit our web site at www.prosoco.com, for the name of the PROSOCO representative in your area.

BEST PRACTICES

To avoid streaking, keep wall surfaces immediately below area being cleaned running wet and free of cleaner rundown and residues.

Masonry-washing equipment generating 400–1000 psi with a water flow rate of 6–8 gallons per minute is the best water/pressure combination for rinsing porous masonry. Use a 15–45° fan spray tip. Heated water (150–180°F; 65–82°C) may improve cleaning efficiency.

Repeated applications to concrete or architectural concrete block may result in surface etching.

Prepared ReKlaim solutions must be used immediately.

Never go it alone. If you have problems or questions, contact your local PROSOCO distributor or field representative. Or call PROSOCO technical Customer Care, toll-free, at 800-255-4255.

SAFETY DATA SHEET

PROSOCO, Inc.



PROSOCO
Version 2

Issue Date 06-Jan-2015

Revision Date 19-Aug-2015

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Enviro Klean® ReKlaim Activator

Other means of identification

Product Code 41042
UN/ID No UN2984

Recommended use of the chemical and restrictions on use

Recommended Use Restricted to professional users.
Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address

PROSOCO, Inc.
3741 Greenway Circle
Lawrence, Kansas 66046

Emergency telephone number

8:00 AM – 5:00 PM CST Monday-Friday 785-865-4200
NON-BUSINESS HOURS (INFOTRAC) 800-535-5053

2. HAZARDS IDENTIFICATION

Classification

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 3
Oxidizing liquids	Category 3

Label elements

Emergency Overview

Danger

Hazard statements

Causes skin irritation
Causes serious eye damage
May cause respiratory irritation
May intensify fire; oxidizer



Appearance clear

Physical state Liquid

Odor Slight

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep/Store away from clothing/ /combustible materials
Take any precaution to avoid mixing with combustibles

Precautionary Statements - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
In case of fire: Use CO₂, dry chemical, or foam for extinction

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed
Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)**Other Information**

No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Water	7732-18-5	60 - 100	*
Hydrogen Peroxide	7722-84-1	10 - 30	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES**First aid measures**

General advice	Do not get in eyes, on skin, or on clothing. Avoid breathing vapors or mists. Immediate medical attention is required.
Eye contact	Immediate medical attention is required. Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes.
Skin Contact	Rinse immediately with plenty of water and seek medical advice.
Inhalation	Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Call a physician or poison control center immediately.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately.

Self-protection of the first aider Use personal protective equipment as required.

Most important symptoms and effects, both acute and delayed

Symptoms Causes serious eye damage. Causes skin irritation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

The product causes burns of eyes, skin and mucous membranes. May intensify fire; oxidizer.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Other Information Combustible materials exposed to hydrogen peroxide should be thoroughly rinsed to remove all hydrogen peroxide.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas. Prevent further leakage or spillage if safe to do so. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Dike far ahead of liquid spill for later disposal. Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Dam up. Cover liquid spill with sand, earth or other non-combustible absorbent material. Pick up and transfer to properly labeled containers. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use personal protective equipment as required. Avoid breathing vapors or mists. Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

Packaging materials Keep only in original container.

Incompatible materials Incompatible with strong acids and bases. Keep combustibles (wood, paper, oil, etc) away from spilled material.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hydrogen Peroxide 7722-84-1	TWA: 1 ppm	TWA: 1 ppm TWA: 1.4 mg/m ³ (vacated) TWA: 1 ppm (vacated) TWA: 1.4 mg/m ³	IDLH: 75 ppm TWA: 1 ppm TWA: 1.4 mg/m ³

NIOSH IDLH Immediately Dangerous to Life or Health

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles. Face protection shield.

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Keep away from food, drink and animal feeding stuffs. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Slight
Appearance	clear	Odor threshold	No information available
Color	colorless		
Property	Values	Remarks • Method	
pH	2.4	pH range 1 - 4 (Apparent pH)	
Melting point/freezing point	-26 °C / -15 °F		
Boiling point/boiling range	104 °C / 219 °F		
Flash point		Not Applicable	
Evaporation rate	> 0.23	(Butyl Acetate=1)	
Flammability (solid, gas)	No information available		
Flammability Limits in Air			
Upper flammability limits	No information available		
Lower flammability limit	No information available		

Vapor pressure	No information available
Vapor density	No information available
Specific Gravity	1.025 - 1.070
Water solubility	completely soluble
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Oxidizing properties	May intensify fire; oxidizer

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Heat. Contamination. Exposure to air or moisture over prolonged periods.

Incompatible materials

Incompatible with strong acids and bases. Keep combustibles (wood, paper, oil, etc) away from spilled material.

Hazardous Decomposition Products

Oxygen. Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Causes serious eye damage Irritating to skin
Inhalation	Avoid breathing vapors or mists.
Eye contact	Avoid contact with eyes.
Skin Contact	Avoid contact with skin.
Ingestion	Do not taste or swallow.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Hydrogen Peroxide 7722-84-1	= 801 mg/kg (Rat)	= 4060 mg/kg (Rat) = 2000 mg/kg (Rabbit)	= 2 mg/L (Rat) 4 h

Information on toxicological effects

Symptoms Causes serious eye damage. Causes skin irritation.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Hydrogen Peroxide	A3	Group 3	-	-

7722-84-1				
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ACGIH (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC (International Agency for Research on Cancer)

Not classifiable as a human carcinogen

Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Chronic toxicity	Avoid repeated exposure.
Target Organ Effects	Eyes, Respiratory system, Skin.
Aspiration hazard	No information available.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	6162 mg/kg
ATEmix (dermal)	15385 mg/kg mg/l
ATEmix (inhalation-dust/mist)	15 mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Hydrogen Peroxide 7722-84-1	2.5: 72 h Chlorella vulgaris mg/L EC50	16.4: 96 h Pimephales promelas mg/L LC50 18 - 56: 96 h Lepomis macrochirus mg/L LC50 static 10.0 - 32.0: 96 h Oncorhynchus mykiss mg/L LC50 static	-	7.7: 24 h Daphnia magna mg/L EC50 18 - 32: 48 h Daphnia magna mg/L EC50 Static

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS**Waste treatment methods**

Disposal of wastes	Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated packaging	Do not reuse container.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT	Regulated
UN/ID No	UN2984
Proper shipping name	Hydrogen Peroxide, Aqueous Solution

Hazard Class 5.1
Packing Group III

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
DSL/NDL Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Hydrogen Peroxide 7722-84-1	-	1000 lb	-

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Hydrogen Peroxide 7722-84-1	X	X	X

16. OTHER INFORMATION

NFPA	Health hazards 3	Flammability 0	Instability 0	Physical and Chemical Properties OX
HMIS	Health hazards 3	Flammability 0	Physical hazards 0	Personal protection X

Prepared By Regulatory Department
Issue Date 06-Jan-2015
Revision Date 19-Aug-2015

Revision Note
SDS sections updated 2

Disclaimer

The information contained on the Material Safety Data Sheet has been compiled from data considered accurate. This data is believed to be reliable, but it must be pointed out that values for certain properties are known to vary from source to source. PROSOCO, Inc. expressly disclaims any warranty express or implied as well as any liability for any injury or loss arising from the use of this information or the materials described. This data is not to be construed as absolutely complete since additional data may be desirable when particular conditions or circumstances exist. It is the responsibility of the user to determine the best precautions necessary for the safe handling and use of this product for his unique application. This data relates only to the specific material designated and is not to be used in combination with any other material. Many federal and state regulations pertain directly or indirectly to the product's end use and disposal of containers and unused material. It is the purchaser's responsibility to familiarize himself with all applicable regulations.

End of Safety Data Sheet

SAFETY DATA SHEET

PROSOCO, Inc.



PROSOCO
Version 1.01

Issue Date 06-Jan-2015

Revision Date 06-Jul-2015

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Enviro Klean® ReKlaim Cleaner

Other means of identification

Product Code 41040

UN/ID No UN3266

Recommended use of the chemical and restrictions on use

Recommended Use Restricted to professional users.

Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address

PROSOCO, Inc.
3741 Greenway Circle
Lawrence, Kansas 66046

Emergency telephone number

8:00 AM – 5:00 PM CST Monday-Friday

785-865-4200

NON-BUSINESS HOURS (INFOTRAC)

800-535-5053

2. HAZARDS IDENTIFICATION

Classification

Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1

Label elements

Emergency Overview

Danger

Hazard statements

Causes severe skin burns and eye damage



Appearance clear

Physical state Liquid

Odor Soap

Precautionary Statements - Prevention

Do not breathe dust/fume/gas/mist/vapors/spray

Wash face, hands and any exposed skin thoroughly after handling

Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Immediately call a POISON CENTER or doctor/physician

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Immediately call a POISON CENTER or doctor/physician

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)**Other Information**

1.575% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Water	7732-18-5	60 - 100	*
Sodium Hydroxide	1310-73-2	5 - 10	*
ethanol, 2,2'-iminobis-, N - (3-(branched decyloxy)propyl)	68478-65-9	1 - 5	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES**First aid measures****General advice**

Immediate medical attention is required. If symptoms persist, call a physician.

Eye contact

Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. If symptoms persist, call a physician.

Skin Contact

Immediate medical attention is required. Wash off immediately with plenty of water while removing contaminated clothing and shoes. If skin irritation persists, call a physician.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician or poison control center immediately.

Ingestion

Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. Call a physician or poison control center immediately.

Self-protection of the first aider

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed**Symptoms**

Skin corrosion. Corrosive to eyes.

Indication of any immediate medical attention and special treatment needed

Note to physicians

Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating and toxic gases and vapors. In the event of fire and/or explosion do not breathe fumes.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures****Personal precautions**

Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental precautions**Environmental precautions**

Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. See Section 12 for additional ecological information.

Methods and material for containment and cleaning up**Methods for containment**

Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up

Use personal protective equipment as required. Dam up. Cover liquid spill with sand, earth or other non-combustible absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE**Precautions for safe handling****Advice on safe handling**

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation, especially in confined areas. Do not breathe dust/fume/gas/mist/vapors/spray.

Conditions for safe storage, including any incompatibilities**Storage Conditions**

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers. Keep out of the reach of children. Keep away from heat.

Incompatible materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium Hydroxide 1310-73-2	Ceiling: 2 mg/m ³	TWA: 2 mg/m ³ (vacated) Ceiling: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³

NIOSH IDLH Immediately Dangerous to Life or Health

Other Information

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls**Engineering Controls**

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Tight sealing safety goggles. Face protection shield.

Skin and body protection

Wear protective gloves and protective clothing.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations

When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Regular cleaning of equipment, work area and clothing is recommended. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Soap
Appearance	clear	Odor threshold	No information available
Color	light yellow		
Property	Values	Remarks • Method	
pH	13.7		
Melting point/freezing point	-10 °C / 14 °F		
Boiling point/boiling range	No information available		
Flash point		Not Applicable	
Evaporation rate	No information available		
Flammability (solid, gas)	No information available		
Flammability Limits in Air			
Upper flammability limits	No information available		
Lower flammability limit	No information available		
Vapor pressure	No information available		
Vapor density	No information available		
Specific Gravity	1.09		
Water solubility	completely soluble		
Solubility in other solvents	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		

Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Exposure to air or moisture over prolonged periods.

Incompatible materials

Incompatible with strong acids and bases. Incompatible with oxidizing agents.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Corrosive Causes serious eye damage
Inhalation	Avoid breathing vapors or mists. Harmful by inhalation.
Eye contact	Corrosive to the eyes and may cause severe damage including blindness.
Skin Contact	Causes burns. The product causes burns of eyes, skin and mucous membranes.
Ingestion	Do not taste or swallow. Harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Sodium Hydroxide 1310-73-2	-	= 1350 mg/kg (Rabbit)	-

Information on toxicological effects

Symptoms	The product causes burns of eyes, skin and mucous membranes.
-----------------	--------------------------------------------------------------

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No information available.
Germ cell mutagenicity	No information available.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Chronic toxicity	Chronic exposure to corrosive fumes/gases may cause erosion of the teeth followed by jaw necrosis. Bronchial irritation with chronic cough and frequent attacks of pneumonia are common. Gastrointestinal disturbances may also be seen. Avoid repeated exposure. Possible risk of irreversible effects.
Target Organ Effects	Eyes, Respiratory system, Skin.
Aspiration hazard	No information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 1.575% of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document . mg/kg
ATEmix (dermal) 16936 mg/kg mg/l

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Sodium Hydroxide 1310-73-2	-	45.4: 96 h Oncorhynchus mykiss mg/L LC50 static	-	-

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS**Waste treatment methods**

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

US EPA Waste Number D002

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT Regulated
UN/ID No UN3266
Proper shipping name Corrosive liquid, basic, inorganic, n.o.s. (Sodium Hydroxide)
Hazard Class 8
Packing Group II

15. REGULATORY INFORMATION**International Inventories**

TSCA Complies

DSL/NDSL Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium Hydroxide 1310-73-2	1000 lb	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Sodium Hydroxide 1310-73-2	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Sodium Hydroxide 1310-73-2	X	X	X
Isopropyl Alcohol 67-63-0	X	X	X

16. OTHER INFORMATION

NFPA	Health hazards 3	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 3	Flammability 0	Physical hazards 0	Personal protection X

Prepared By Regulatory Department
 Issue Date 06-Jan-2015
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 Revision Note
 SDS sections updated
 15

Disclaimer

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source. PROSOCO, Inc. expressly disclaims any warranty express or implied as well as any liability for any injury or loss arising from the use of this information or the materials described. This data is not to be construed as absolutely complete since additional data may be desirable when particular conditions or circumstances exist. It is the responsibility of the user to determine the best precautions necessary for the safe handling and use of this product for his unique application. This data relates only to the specific material designated and is not to be used in combination with any other material. Many federal and state regulations pertain directly or indirectly to the product's end use and disposal of containers and unused material. It is the purchaser's responsibility to familiarize himself with all applicable regulations.

End of Safety Data Sheet



PROSOCO®

Enviro Klean®

NEXT GENERATION CLEANERS

ReVive

Enviro Klean® ReVive removes mold and mildew staining and atmospheric staining that disfigures and degrades many types of construction materials. ReVive is a highly efficient alternative to aggressive cleaners traditionally used on interior and exterior masonry, stone and tile surfaces.

Simply dilute with clean water as directed, and apply ReVive to the surface. A short contact time, gentle scrubbing and a water rinse are normally enough to remove light-to-moderate soiling and staining typically encountered on building surfaces and monuments. Enviro Klean® ReVive can also be applied safely to non masonry substrates such as wood, painted surfaces, metal, plastic and glass.

ADVANTAGES

- Safe for landscape plantings and grass.
- Safe for interior use in occupied buildings.
- Effective on all types of stone, concrete and brick masonry.
- Non-fuming, low-odor formulation.
- Needs no substrate neutralization.
- Minimal precautions required for handling and storage.
- Easy to apply with brush, roller or coarse spray.
- Biodegradable.
- Concentrated for economy.
- Safe and effective on wood, painted surfaces, metal, glass and plastic.

Limitations

- For removal of heavy biological or atmospheric soiling, consult your PROSOCO representative, or call Customer Care toll-free at (800) 255-4255.

REGULATORY COMPLIANCE

VOC Compliance

Enviro Klean® ReVive is compliant with all national, state and district VOC regulations.

TYPICAL TECHNICAL DATA

FORM	Clear, slight amber liquid Low odor
SPECIFIC GRAVITY	1.00
pH	5.5–6.5
WT/GAL	8.34 lbs
ACTIVE CONTENT	not applicable
TOTAL SOLIDS	not applicable
VOC CONTENT	not applicable
FLASH POINT	not applicable
FREEZE POINT	32° F (0° C)
SHELF LIFE	3 years in tightly sealed, unopened container
SOLUBILITY IN WATER	Complete

SAFETY INFORMATION

Always read full label and SDS for precautionary instructions before use. Use appropriate safety equipment and job site controls during application and handling.

24-Hour Emergency Information:
INFOTRAC at 800-535-5053

Product Data Sheet

Enviro Klean® ReVive

PREPARATION

Protect people, vehicles, property and all surfaces not set for cleaning from product, splash, rinse, residue, fumes and wind drift. Protect and/or divert traffic if needed.

Drain water from architectural structures (such as fountains) before application. Carefully brush or scrape loose surface debris, and heavy growths of moss, ivy, or other contaminants from the dry surface.

Fragile or Deteriorated Surfaces

Fragile or deteriorated stone may require reduced rinsing pressure, or even stone consolidation to avoid further damage.

Severely deteriorated limestone and marble may be strengthened enough for thorough cleaning by treatment with Conservare® HCT. HCT also prolongs the service life of acid-soluble stone by dramatically increasing its resistance to acid rain. Consult your PROSOCO representative, or call Customer Care toll-free at (800) 255-4255 for more information on use of HCT in conjunction with ReVive.

Surface and Air Temperatures

Cleaning effectiveness is reduced when surface and air temperatures fall below 50°F (10°C). Do not apply at temperatures below 40°F (4°C). If freezing conditions exist before application, let masonry thaw.

Equipment

Apply using a soft-bristled brush, roller or coarse spray. Rinse with enough water and pressure to flush spent cleaner and dissolved soiling from the masonry surface and surface pores without damage. Inadequate rinsing leaves residues which may stain the cleaned surface.

Masonry-washing equipment generating 400–1000 psi with a water flow rate of 6–8 gallons per minute is the best water/pressure combination for rinsing porous masonry. Use a 15–45° fan spray tip. Heater water (150–180°F; 65–82°C) may improve cleaning efficiency.

Use adjustable equipment for reducing water flow rates and rinsing pressure as needed for sensitive surfaces. Rinsing pressures greater than 1000 psi and fan spray tips smaller than 15° may permanently damage sensitive masonry. Water flow rates less than 6 gpm may reduce cleaning productivity and contribute to uneven cleaning results.

Storage and Handling

Store in a cool, dry place. Always seal container after dispensing. Do not alter or mix with other chemicals. Published shelf life assumes upright storage of factory-sealed containers in a dry place. Maintain temperature of 45–100°F (7–38°C). Keep from freezing. Do not double stack pallets. Dispose of in accordance with local, state and federal regulations.

APPLICATION

Read “Preparation” and the Safety Data Sheet before use.

ALWAYS TEST a small area of each surface to confirm suitability, coverage rate and desired results before beginning overall application. Test with the same equipment, recommended surface preparation and application procedures planned for general application. Let surface dry thoroughly before inspection.

NOTE: Many types of biological soiling change color when exposed to ReVive. Most surface discoloration will disappear soon after thorough water rinsing and weathering.

Dilution & Mixing

Adjust dilution rate based on testing. Always pour cold water into empty bucket first, then carefully add product.

Type of Soiling *Concentrate : Water*

- Light biological staining 1:10
- Moderate biological staining 1:5
- Heavy biological staining use in concentrate

Typical Coverage Rates

Coverage rates vary based on surface texture, weather conditions at time of application and the severity of soiling.

- 1-gallon of diluted ReVive treats 80–240 sq.ft.
- 1-gallon of diluted ReVive treats 7–22 sq.m.

Application Instructions

1. Working from the bottom to the top, apply generously to dry surface until surface is thoroughly wet.
2. Leave on the surface for 2–3 minutes. If needed, apply more to keep the surface wet.
3. Mist treated surfaces with water and gently scrub with a non-metallic, short-fibered scrub brush to loosen biological soiling.

Product Data Sheet

Enviro Klean® ReVive

4. Working from the bottom to the top, rinse thoroughly with clean water. Reduce rinsing pressure as needed for fragile or deteriorated stone. See Fragile or Deteriorated Surfaces in Preparation section.
5. If used on food-contact surfaces (such as, but not limited to picnic benches or bench-table combos, food-stand counters, eating- or food-preparation surfaces, etc.) a potable water rinse must follow cleaning.

It may take several days for the full cleaning effect to be realized. When practical, allow two or more weeks for biological soiling to disappear. Repeat as necessary to remove remaining biological soiling.

Cleanup

Clean tools and equipment with fresh water.

WARRANTY

The information and recommendations made are based on our own research and the research of others, and are believed to be accurate. However, no guarantee of their accuracy is made because we cannot cover every possible application of our products, nor anticipate every variation encountered in masonry surfaces, job conditions and methods used. The purchasers shall make their own tests to determine the suitability of such products for a particular purpose.

PROSOCO, Inc. warrants this product to be free

from defects. **Where permitted by law, PROSOCO makes no other warranties with respect to this product, express or implied, including without limitation the implied warranties of merchantability or fitness for particular purpose.**

The purchaser shall be responsible to make his own tests to determine the suitability of this product for his particular purpose. PROSOCO's liability shall be limited in all events to supplying sufficient product to re-treat the specific areas to which defective product has been applied. Acceptance and use of this product absolves PROSOCO from any other liability, from whatever source, including liability for incidental, consequential or resultant damages whether due to breach of warranty, negligence or strict liability. This warranty may not be modified or extended by representatives of PROSOCO, its distributors or dealers.

CUSTOMER CARE

Factory personnel are available for product, environment and job-safety assistance with no obligation. Call 800-255-4255 and ask for Customer Care – technical support.

Factory-trained representatives are established in principal cities throughout the continental United States. Call Customer Care at 800-255-4255, or visit our web site at www.prosoco.com, for the name of the PROSOCO representative in your area.

BEST PRACTICES

Drain water from architectural structures (such as fountains) before application. Carefully brush or scrape loose surface debris, and heavy growths of moss, ivy, or other contaminants from the dry surface.

Fragile or deteriorated stone may require reduced rinsing pressure, or even stone consolidation to avoid further damage.

Masonry-washing equipment generating 400–1000 psi with a water flow rate of 6–8 gallons per minute is the best water/pressure combination for rinsing porous masonry. Use a 15–45° fan spray tip. Heater water (150–180°F; 65–82°C) may improve cleaning efficiency.

Many types of biological soiling change color when exposed to ReVive. Most surface discoloration will disappear soon after thorough water rinsing and weathering.

It may take several days for the full cleaning effect to be realized. When practical, allow two or more weeks for biological soiling to disappear. Repeat as necessary to remove remaining biological soiling.

Never go it alone. If you have problems or questions, contact your local PROSOCO distributor or field representative. Or call PROSOCO technical Customer Care, toll-free, at 800-255-4255.

SAFETY DATA SHEET

PROSOCO, Inc.



Issue Date 25-Nov-2014

Revision Date 25-Nov-2014

Version 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name Enviro Klean® ReVive

Other means of identification

Product Code 41055

Recommended use of the chemical and restrictions on use

Recommended Use Restricted to professional users.

Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address

PROSOCO, Inc.
3741 Greenway Circle
Lawrence, Kansas 66046

Emergency telephone number

8:00 AM – 5:00 PM CST Monday-Friday
NON-BUSINESS HOURS (INFOTRAC)

785-865-4200
800-535-5053

2. HAZARDS IDENTIFICATION

Classification

Serious eye damage/eye irritation

Category 2A

Label elements

Emergency Overview

Warning

Hazard statements

Causes serious eye irritation



Appearance clear

Physical state Liquid

Odor Low

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Wear eye/face protection

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention

Hazards not otherwise classified (HNOC)**Other Information**

1.28996% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%	Trade Secret
Water	7732-18-5	60 - 100	*
Nonionic surfactant	Proprietary	1 - 5	*
Alkyl dimethyl benzyl ammonium chloride (C12-16)	68424-85-1	1 - 5	*

* The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES**First aid measures**

Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin Contact	Wash off immediately with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse.
Inhalation	Remove to fresh air. If breathing is difficult, give oxygen. If symptoms persist, call a physician.
Ingestion	Rinse mouth. Drink plenty of water. Do NOT induce vomiting. Call a physician.

Most important symptoms and effects, both acute and delayed

Symptoms Causes serious eye irritation.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

No information available.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Environmental precautions See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Dam up. Cover liquid spill with sand, earth or other non-combustible absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep in a dry, cool and well-ventilated place. Keep out of the reach of children.

Incompatible materials Incompatible with oxidizing agents. Chlorinated compounds.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering Controls Showers. Eyewash stations.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection Wear protective gloves and protective clothing.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Low
Appearance	clear	Odor threshold	No information available
Color	Slight amber		
Property	Values	Remarks • Method	
pH	5.5	pH Range 5.5-6.5	
Melting point/freezing point	0 °C / 32 °F		
Boiling point/boiling range	No information available		
Flash point		Not Applicable	
Evaporation rate	No information available		
Flammability (solid, gas)	No information available		
Flammability Limits in Air			
Upper flammability limits	No information available		
Lower flammability limit	No information available		
Vapor pressure	No information available		
Vapor density	No information available		
Specific Gravity	1.00		
Water solubility	completely soluble		
Solubility in other solvents	No information available		
Partition coefficient	No information available		
Autoignition temperature	No information available		
Decomposition temperature	No information available		
Kinematic viscosity	No information available		
Dynamic viscosity	No information available		

10. STABILITY AND REACTIVITY**Reactivity**

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Extremes of temperature and direct sunlight.

Incompatible materials

Incompatible with oxidizing agents. Chlorinated compounds.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Product Information	Causes serious eye irritation
Inhalation	Avoid breathing vapors or mists. May cause irritation.
Eye contact	Avoid contact with eyes. Causes serious eye irritation.

Skin Contact Avoid contact with skin. May cause irritation.

Ingestion Do not taste or swallow. May be harmful if swallowed.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Water 7732-18-5	> 90 mL/kg (Rat)	-	-
Nonionic surfactant	= 1378 mg/kg (Rat)	> 2 g/kg (Rabbit)	-
Alkyl dimethyl benzyl ammonium chloride (C12-16) 68424-85-1	= 426 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms Causes serious eye irritation.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization No information available.
Germ cell mutagenicity No information available.
Carcinogenicity This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Reproductive toxicity No information available.
STOT - single exposure No information available.
STOT - repeated exposure No information available.
Aspiration hazard No information available.

Numerical measures of toxicity - Product Information

Unknown Acute Toxicity 1.28996% of the mixture consists of ingredient(s) of unknown toxicity
The following values are calculated based on chapter 3.1 of the GHS document .
ATEmix (oral) 28971 mg/kg
ATEmix (dermal) 160000 mg/kg mg/l

12. ECOLOGICAL INFORMATION

Ecotoxicity

Persistence and degradability

No information available.

Bioaccumulation

No information available.

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

14. TRANSPORT INFORMATION

DOT

Not Regulated for all modes of transportation.

15. REGULATORY INFORMATION

International Inventories**TSCA**

Complies

DSL/NDSL

Complies

Legend:*TSCA - United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List***US Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
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Ethanol 64-17-5	X	X	X
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16. OTHER INFORMATION

NFPA	Health hazards 2	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 2	Flammability 0	Physical hazards 0	Personal protection X

Prepared By Regulatory Department
Issue Date 25-Nov-2014
Revision Date 25-Nov-2014
Revision Note

No information available

Disclaimer

The information contained on the Material Safety Data Sheet has been compiled from data considered accurate. This data is believed to be reliable, but it must be pointed out that values for certain properties are known to vary from source to source. PROSOCO, Inc. expressly disclaims any warranty express or implied as well as any liability for any injury or loss arising from the use of this information or the materials described. This data is not to be construed as absolutely complete since additional data may be desirable when particular conditions or circumstances exist. It is the responsibility of the user to determine the best precautions necessary for the safe handling and use of this product for his unique application. This data relates only to the specific material designated and is not to be used in combination with any other material. Many federal and state regulations pertain directly or indirectly to the product's end use and disposal of containers and unused material. It is the purchaser's responsibility to familiarize himself with all applicable regulations.

End of Safety Data Sheet

FMS ID: **PV467WFAC**



**Department of
Design and
Construction**

**THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF PUBLIC BUILDINGS**

30-30 THOMSON AVENUE LONG ISLAND CITY, NEW YORK 11101-3045
TELEPHONE (718) 391-1000 WEBSITE www.nyc.gov/buildnyc

Contract for Furnishing all Labor and Material Necessary and Required for:

CONTRACT NO. 1 GENERAL CONSTRUCTION WORK

The Heckscher Building - Partial Exterior Envelope Upgrade Rebid

LOCATION: 1230 5th Avenue
BOROUGH: Manhattan, NY 10029
CITY OF NEW YORK

Contractor _____

Dated _____, 20____

Entered in the Comptroller's Office _____

First Assistant Bookkeeper _____

Dated _____, 20____

