



**Department of  
Design and  
Construction**

**PROJECT ID:**

**PO79GENER**

**LAW**

**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](http://www.nyc.gov/buildnyc)

**VOLUME 1 OF 3**

**BID BOOKLET**

**FOR FURNISHING ALL LABOR AND MATERIALS  
NECESSARY AND REQUIRED FOR:**

**Replacement of Generators at 2  
NYPD Precincts**

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

**Various  
Manhattan**

**CONTRACT NO. 1**

**ELECTRICAL WORK**

**NYPD**

**Goldman Copeland**



**Date:**

**December 20, 2017**

**18-069**



**Department of  
Design and  
Construction**

Ana Barrio  
Acting Commissioner

Justin Walter  
Chief Administrative Officer  
Administration

May 18, 2018

**CERTIFIED MAIL - RETURN RECEIPT REQUEST**  
**COMMERCE ELECTRICAL CONTRACTING CORP**  
40-12 28th Street  
Long Island City, NY 11101

RE: FMS ID: PO79GENER  
E-PIN: 85017B0108001  
DDC PIN: 8502017PD0006C  
REPLACEMENT OF GENERATORS AT 2  
NYPD PRECINCTS-MANHATTAN

**NOTICE OF AWARD**

Dear Contractor:

You are hereby awarded the above referenced contract based upon your bid in the amount of \$3,312,997.00 submitted at the bid opening on March 20, 2018. Within ten (10) days of your receipt of this notice of award, you are required to take the actions set forth in Paragraphs (1) through (3) below. For your convenience, attached please find a copy of Schedule A of the General Conditions to the Contract, which sets forth the types and amounts of insurance coverage required for this contract.

- (1) Execute two copies of the Agreement in the Contracts Unit, 30-30 Thomson Avenue, 1<sup>st</sup> Floor, Long Island City, New York (IDCNY Building). A Commissioner of Deeds will be available to witness and notarize your signature. The Agreement must be signed by an officer of the corporation or a partner of the firm.
- (2) Submit to the Contracts Unit two properly executed performance and payment bonds. If required for this contract, copies of performance and payment bonds are attached.
- (3) Submit to the Contracts Unit the following insurance documentation: (a) original certificate of insurance for general liability in the amount required by Schedule A, and (b) original certificates of insurance or other proof of coverage for workers' compensation and disability benefits, as required by New York State Law. The insurance documentation specified in this paragraph is required for registration of the contract with the Comptroller's Office.





On or before the contract commencement date, you are required to submit all other certificates of insurance and/or policies in the types and amounts required by Schedule A. Such certificates of Insurance and/or policies must be submitted to the Agency Chief Contracting Office, Attention: Risk Manager, Fourth Floor at the above indicated department address.

Your attention is directed to the section of the Information for Bidders entitled "Failure to Execute Contract". As indicated in this section, in the event you fail to execute the contract and furnish the required bonds within the (10) days of your receipt of this notice of award, your bid security will be retained by the City and you will be liable for the difference between your bid price and the price for which the contract is subsequently awarded, less the amount of the bid security retained.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Shipman", is written over a horizontal line.

Michael Shipman  
Director of Contracts



## **NOTICE TO BIDDERS:**

- ◆ **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 Contract for General Construction Work.

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.

## **SPECIAL NOTICE TO BIDDERS**

**The New York City Department of Small Business Services (SBS), in conjunction with the New York Business Development Corporation (NYBDC), have established a NYC Construction Loan pilot program to provide prime contractors and subcontractors financing for mobilization costs on certain City construction projects.**

**Under this initiative, loans are available for early stage mobilization needs such as insurance, labor, supplies and equipment. Bidders are strongly encouraged to visit “Growing Your Business” at [www.nyc.gov/nycbusiness](http://www.nyc.gov/nycbusiness) to learn more about the loan or contact [constructionloan@sbs.nyc.gov](mailto:constructionloan@sbs.nyc.gov) / (212) 513-6444 to obtain details and to determine preliminary eligibility.**

**A successful loan applicant will be required to make an assignment of its contract (or subcontract) payments to the lender NYBDC until the loan is repaid. If the loan is to a subcontractor, a prime contractor must honor the terms of such an assignment.**

**A prime contractor may not discriminate against a subcontractor or potential subcontractor by reason of the subcontractor’s participation, or nonparticipation, in the NYC Construction Loan program.**

## **PASSPort Disclosure Filing**

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 will replace the paper-VENDEX process. In anticipation of awards, all bidders must create online accounts in the new PASSPort system, and file all disclosure information when the system becomes available. **Paper submissions, including certifications of no changes to existing VENDEX packages will not be accepted in lieu of complete online filings.**

Vendors 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](http://www.nyc.gov/passport). Contact MOCS at [passport@mocs.nyc.gov](mailto:passport@mocs.nyc.gov) for additional information and technical support.

## **PRE BID QUESTIONS (PBQs):**

- ◆ Please be advised that PBQs should be submitted to the Agency Contact Person at least five (5) business days (by 5:00 P.M. EST) prior to the bid opening date as indicated in ATTACHMENT 1 – BID INFORMATION, page 22, VOLUME 1 of 3 of this BID PACKAGE.

**BID BOOKLET  
PART A**



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**PROJECT ID: PO79GENER**

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

**BID BOOKLET**

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

**SPECIAL NOTICE TO BIDDERS**

**BID SUBMISSION REQUIREMENTS**

**THE BID SHALL CONSIST OF TWO (2) SEPARATE, SEALED  
ENVELOPES. THE DOCUMENTS THAT MUST BE COMPLETED AND  
INCLUDED IN EACH SEPARATE ENVELOPE ARE LISTED BELOW.**

**BID ENVELOPE #1:** Bid Envelope #1 shall contain the following items:

- Bid Form, including Affirmation
- Bid Security (if required, see page 22)
- Schedule B: M/WBE Utilization Plan (if participation goals have been established)

**BID ENVELOPE #2:** Bid Envelope #2 shall contain **ONLY** the following item:

- Bidder's Identification of Subcontractors (see pages 16 & 17)

**FAILURE TO SUBMIT THE FOUR ITEMS LISTED ABOVE  
WILL RESULT IN THE DISQUALIFICATION OF THE BID**

**BID ENVELOPE #1:** In addition to the items listed above, Bid Envelope #1 shall also contain the following items: DO NOT Include the items listed below in Bid Envelope #2.

- Bid Breakdown (if required, see page 21)
- Safety Questionnaire
- Construction Employment Report (if bid is \$1,000,000 or more)
- Contract Certificate (if bid is less than \$1,000,000)
- Confirmation of Vendex Compliance
- Bidder's Certification of Compliance with Iran Divestment Act
- Special Experience Requirements Qualification Form (if required, see pages 3, 4)
- Any Addenda issued prior to the receipt of bids

**FAILURE TO SUBMIT THE EIGHT ITEMS LISTED ABOVE  
MAY RESULT IN THE DISQUALIFICATION OF THE BID.**

- NOTES:**
- ( 1 ) All of the above referred to blank forms to be completed and submitted with the bid are included in the BID BOOKLET.
  - ( 2 ) If the bidder has any questions or requires additional information, please contact the Department of Design and Construction by phone (718-391-2601) or by fax (718-391-2627).
  - ( 3 ) **VENDEX QUESTIONNAIRES:** Vendex Questionnaires, as well as detailed instructions, may be obtained at [www.nyc.gov/vendex](http://www.nyc.gov/vendex). The bidder may also obtain Vendex forms and instructions by contacting the Agency Chief Contracting Officer or the contact person for this contract.
  - ( 4 ) **SPECIAL EXPERIENCE REQUIREMENTS:** The Bidder is advised that Special Experience Requirements may apply to this contract. Such requirements are set forth on pages 3 and 4 of this Bid Booklet.
  - ( 5 ) **SPECIAL EXPERIENCE REQUIREMENTS FOR ASBESTOS:** The Bidder is advised that this contract contains strict requirements regarding the prior experience and licensing of the subcontractor who will perform any required asbestos abatement work. These special experience requirements are set forth in the section of the specifications which describes any required asbestos abatement work.

## SPECIAL EXPERIENCE REQUIREMENTS

Bidders are advised that the special experience requirements set forth below apply to the General Construction Contractor if a check mark is indicated before the word "Yes". Compliance with these special experience requirements will be determined solely by the City. Failure to meet these special experience requirements will result in the rejection of the bid as non-responsive.

Electrical Contractor

x

YES

NO

- (A) **SPECIAL EXPERIENCE REQUIREMENTS FOR THE BIDDER IF APPLICABLE:** The Special Experience Requirements set forth below apply to the bidder only if indicated above. Compliance with such Special Experience Requirements will be determined solely by the City prior to an award of contract. Failure to comply with the Special Experience Requirements will result in rejection of the bid as non responsive.
- 1) The bidder must, with the last five (5) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least three (3) projects similar in scope and type to the required work.
- (B) **QUALIFICATION FORM:** For each project submitted to demonstrate compliance with the special experience requirements, the bidder(s) indicated above must complete the Qualification Form included in the Bid Booklet. The City will only evaluate a project if the following criteria are met: (1) the project is described on the Qualification Form, and (2) all information on the Qualification Form is provided. The City will not evaluate any project which does not comply with the criteria set forth herein, including any project which is referred to only on the resume of an individual.
- (C) **CONDITIONS:** The City may, in determining compliance with the special experience requirements set forth above, consider prior projects completed by principal(s) or other employees of the bidder while affiliated with another entity, subject to the conditions set forth below.
- 1) Any principal or other employee on whose prior experience the bidder is relying to demonstrate compliance with this special experience requirement must have held the following: (a) a significant management role in the prior entity with which he/she was affiliated, and (b) a significant management role in the entity submitting the bid for a period of six months or from the inception of the bidding entity.
- 2) The bidder may not rely on the experience of its principals or other employees to demonstrate compliance with any other requirements, including without limitation, financial requirements or requirements for a specified minimum amount of annual gross revenues.
- (D) **JOINT VENTURES:** In the event the bidder is a joint venture, at least one firm in the joint venture must meet the above described experience requirements.
- (E) **COMPLIANCE:** Compliance with the experience requirements set forth herein will be determined solely by the City. The bidder is advised that failure to meet the above described experience will result in the rejection of the bid as non-responsive.

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## Qualification Form

Project ID: PO79GENER

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: COMMERCE ELECTRICAL CONTRACTING CORP.

Name of Project: RIKERS ISLAND GENERATOR REPLACEMENT SAM PERRY BUILDING

Location of Project: RIKERS ISLAND

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

Name: ANDREW BOWIE

Title: DIRECTOR CM UNIT

Phone Number: 347-244-9636

Brief description of work completed: NEW 250 KW GENERATOR, NEW DOCKING STATION, NEW LOAD BANK, CONNECTION TO EXISTING ATS

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

Amount of Contract: \$578,000

Date of Completion: March 2018

\*\*\*\*\*  
Name of Contractor: COMMERCE ELECTRICAL CONTRACTING CORP.

Name of Project: BROOKLYN CHILDREN PSYCHIATRIC CENTER REPLACEMENT OF ATS SWITCHES

Location of Project: 1819 BERGEN ST, BROOKLYN NY 11233

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

Name: NIGEL MCLEAN

Title: ASSISTANT BUILDING ELEC. ENG Phone Number: 914-557-4235

Brief description of work completed: REPLACEMENT OF TWO 1200A ATS SWITCHES, TEMP SHUNTS

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

Amount of Contract: \$182,000

Date of Completion: MAY 2016





## Qualification Form

Project ID: PO79GENER

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: ARCH ELECTRIC INC. (OUR SUB-CONTRACTOR)

Name of Project: NYPD BRONX NARCOTICS UNIT

Location of Project: 500 ABBOT STREET BRONX NY

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

Name: GARY L'HOMMEDIEU

Title: MANAGER Phone Number: 203-895-5874

Brief description of work completed: NEW 150KW GENERATOR, REHABILITATION OF ENTIRE BUILDING FOR NYPD

Was the work performed as a prime or a subcontractor: SUB-CONTRACTOR

Amount of Contract: \$1,500,000.00

Date of Completion: 2000

\*\*\*\*\*  
Name of Contractor: \_\_\_\_\_

Name of Project: \_\_\_\_\_

Location of Project: \_\_\_\_\_

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

Name: \_\_\_\_\_

Title: \_\_\_\_\_ Phone Number: \_\_\_\_\_

Brief description of work completed: \_\_\_\_\_

Was the work performed as a prime or a subcontractor: \_\_\_\_\_

Amount of Contract: \_\_\_\_\_

Date of Completion: \_\_\_\_\_



## Qualification Form

Project ID: PO79GENER

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: ARCH ELECTRIC INC. (OUR SUB-CONTRACTOR)

Name of Project: NYPD BRONX NARCOTICS UNIT

Location of Project: 550 ABBOT STREET BRONX NY

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

Name: GARY L'HOMMEDIEU

Title: MANAGER Phone Number: 203-895-5874

Brief description of work completed: NEW 150KW GENERATOR, REHABILITATION OF ENTIRE BUILDING FOR NYPD

Was the work performed as a prime or a subcontractor: SUB-CONTRACTOR

Amount of Contract: \$1,500,000.00

Date of Completion: 2000

\*\*\*\*\*

Name of Contractor: \_\_\_\_\_

Name of Project: \_\_\_\_\_

Location of Project: \_\_\_\_\_

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

Name: \_\_\_\_\_

Title: \_\_\_\_\_ Phone Number: \_\_\_\_\_

Brief description of work completed: \_\_\_\_\_

Was the work performed as a prime or a subcontractor: \_\_\_\_\_

Amount of Contract: \_\_\_\_\_

Date of Completion: \_\_\_\_\_



## MWBE PROGRAM

### M/WBE UTILIZATION PLAN

**M/WBE Program Requirements:** The requirements for the M/WBE Program are set forth on the following pages of this Bid Booklet, in the section entitled “Notice to All Prospective Contractors”.

**Schedule B: M/WBE Utilization Plan:** Schedule B: M/WBE Utilization Plan for this Contract is set forth in this Bid Booklet on the pages following the section entitled “Notice to All Prospective Contractors”. The M/WBE Utilization Plan (Part I) indicates whether Participation Goals have been established for this Contract. If Participation Goals have been established for this Contract, the bidder must submit an M/WBE Utilization Plan (Part II) with its bid.

**Waiver:** The bidder may seek a full or partial pre-award waiver of the Participation Goals in accordance with the “Notice to All Prospective Contractors” (See Part A, Section 10). The bidder’s request for a waiver must be submitted at least seven (7) calendar days prior to the bid date. Waiver requests submitted after the deadline will not be considered. The form for requesting a waiver of the Participation Goals is set forth in the M/WBE Utilization Plan (Part III).

**Rejection of the Bid:** The bidder must complete Schedule B: M/WBE Utilization Plan (Part II) set forth in this Bid Booklet on the pages following the section entitled “Notice to All Prospective Contractors”. A Schedule B submitted by the bidder 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 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 Required Affirmations, the bidder 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 is non-responsive.

Receipt of notification is defined as the date notice is emailed or faxed (if the bidder has provided an email address or fax number), or no later than five (5) days from the date of mailing or upon delivery, if delivered.

**Impact on LBE Requirements:** If Participation Goals have been established for the participation of M/WBEs, the contractor is not required to comply with the Locally Based Enterprise Program (“LBE”). The LBE Program is set forth in Article 67 of the Contract.

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## NOTICE TO ALL PROSPECTIVE CONTRACTORS

### PARTICIPATION BY MINORITY-OWNED AND WOMEN-OWNED BUSINESS ENTERPRISES IN CITY PROCUREMENT

#### 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 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 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 multi-year contracts, such list shall also be submitted every year thereafter. The Agency may also require the Contractor 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](http://www.nyc.gov/buycertified), by emailing DSBS at [buyer@sbs.nyc.gov](mailto: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](http://www.nyc.gov/getcertified), emailing [MWBE@sbs.nyc.gov](mailto: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 [zhangji@ddc.nyc.gov](mailto:zhangji@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.

Tax ID #: 20-5890295

APT E-

PIN#:

85017B0108

Contract # 1 - Electrical Work

**SCHEDULE B - M/WBE Utilization Plan****Part I: M/WBE Participation Goals**

Part I to be completed by contracting agency

**Contract Overview**

APT E-Pin # 85017B0108 FMS Project ID#: PO79GENER

Project Title/Agency Replacement of Generators in 2 NYPD Precincts

PIN # 8502017PD0006C

Bid/Proposal Response Date: MARCH 8, 2018

Contracting Agency Department of Design and Construction

Agency Address 30-30 Thomson Avenue City Long Island City State NY Zip Code 11101

Contact Person Lisa L. Hawkins Title Senior M/WBE Compliance Analyst

Telephone # (718) 391-2010 Email hawkinsl@ddc.nyc.gov

**Project Description (attach additional pages if necessary)**

This project consists of Replacement of Generators at 2 NYPD Precincts. Additionally, the project will include the modification of switchgear, electrical services, mechanical, architectural and structural components.

**M/WBE Participation Goals for Services**

Enter the percentage amount for each group or for an unspecified goal. Please note that there are no goals for Asian Americans in Professional Services.

Prime Contract Industry: **Construction**

Group	Percentage	
<b>Unspecified *</b>	<b>22</b>	<b>%</b>
or		
Black American	Unspecified	%
Hispanic American	Unspecified	%
Asian American	Unspecified	%
Women	Unspecified	%
<b>Total Participation Goals</b>	<b>22</b>	<b>%</b>

Line 1

\* Note: For this procurement, individual ethnicity and gender goals are not specified. The Total Participation Goals for construction contracts may be met by using Black American, Hispanic American, Asian American or Women certified firms or any combination of such firms.





Tax ID #: 20-5890295

APT E-

PIN#: 85017B0108

**SCHEDULE B - Part II: M/WBE Participation Plan**

Part II to be completed by the bidder/proposer:

Please note: For Non-M/WBE Prime Contractors who will NOT subcontract any services and will self-perform the entire contract, you must obtain a FULL waiver by completing the Waiver Application on pages 9 and 9a and timely submitting it to the contracting agency pursuant to the Notice to Prospective Contractors. Once a FULL WAIVER is granted, it must be included with your bid or proposal and you do not have to complete or submit this form with your bid or proposal.

**Section I: Prime Contractor Contact Information**

Tax ID # 20-5890295 FMS Vendor ID #  
 Business Name COMMERCE ELECTRICAL CONTRACTING CORP. Contact Person DIMITRIOS TOMBORIS  
 Address 23-86 BQE WEST, ASTORIA NY 11103  
 Telephone # 718-233-4955 Email JAMES@COMMERCEELECTRICAL.COM

**Section II: M/WBE Utilization Goal Calculation: Check the applicable box and complete subsection.****PRIME CONTRACTOR ADOPTING AGENCY M/WBE PARTICIPATION GOALS**

<input checked="" type="checkbox"/> For Prime Contractors (including Qualified Joint Ventures and M/WBE firms) adopting Agency M/WBE Participation Goals.	Total Bid/Proposal Value	Agency Total Participation Goals (Line 1, Page 6)	Calculated M/WBE Participation Amount
Calculate the total dollar value of your total bid that you agree will be awarded to M/WBE subcontractors for services and/or credited to an M/WBE prime contractor or Qualified Joint Venture.  Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation.	\$ 3,382,199.00 X	22% 722,259.34	\$ 722,259.34 Line 2

**PRIME CONTRACTOR OBTAINED PARTIAL WAIVER APPROVAL: ADOPTING MODIFIED M/WBE PARTICIPATION GOALS**

<input type="checkbox"/> For Prime Contractors (including Qualified Joint Ventures and M/WBE firms) adopting Modified M/WBE Participation Goals.	Total Bid/Proposal Value	Adjusted Participation Goal (From Partial Waiver)	Calculated M/WBE Participation Amount
Calculate the total dollar value of your total bid that you agree will be awarded to M/WBE subcontractors for services and/or credited to an M/WBE prime contractor or Qualified Joint Venture.  Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation.	\$ X		\$ Line 3



Tax ID #: 20-5890295

APT E-  
PIN#:

85017B0108

**Section III: M/WBE Utilization Plan: How Proposer/Bidder Will Fulfill M/WBE Participation Goals. 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 above, 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 above, 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 above, as applicable.

#### Section IV: 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? % 25%

Enter brief description of the type(s) and dollar value of subcontracts for all services you plan on subcontracting if awarded this contract. For each item, indicate whether the work is designated for participation by MBEs and/or WBEs and the time frame in which such work is scheduled to begin and end. Use additional sheets if necessary.

1. HVAC WORK
2. ELECTRIC LABOR
3. GENERAL CONSTRUCTION WORK
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 16.
- 17.

✓ **Scopes of Subcontract Work**

#### Section V: 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

3/19/19

Print Name DIMITRIOS TOMBORIS

Title

PRESIDENT



N/A

**SCHEDULE B – PART III – REQUEST FOR WAIVER OF M/WBE PARTICIPATION REQUIREMENT**

**Contract Overview**

Tax ID # \_\_\_\_\_ FMS Vendor ID # \_\_\_\_\_  
 Business Name \_\_\_\_\_  
 Contact Name \_\_\_\_\_ Telephone # \_\_\_\_\_ Email \_\_\_\_\_  
 Type of Procurement ☐ Competitive Sealed Bids ☐ Other \_\_\_\_\_ Bid/Response Due Date \_\_\_\_\_  
 AP/E-PIN # (for this procurement) \_\_\_\_\_ Contracting Agency: \_\_\_\_\_

**M/WBE Participation Goals as described in bid/solicitation documents**

\_\_\_\_\_ %  
 Agency M/WBE Participation Goal

**Proposed M/WBE Participation Goal as anticipated by vendor seeking waiver**

\_\_\_\_\_ % of the total contract value anticipated in good faith by the bidder/proposer to be subcontracted for services and/or credited to an M/WBE Prime Contractor or Qualified Joint Venture.

**Basis for Waiver Request: Check appropriate box & explain in detail below (attach additional pages if needed)**

- ☐ Vendor does not subcontract services, and has the capacity and good faith intention to perform all such work itself with its own employees.
- ☐ Vendor subcontracts some of this type of work but at a lower % than bid/solicitation describes, and has the capacity and good faith intention to do so on this contract. (Attach subcontracting plan outlining services that the vendor will self-perform and subcontract to other vendors or consultants.)
- ☐ Vendor has other legitimate business reasons for proposing the M/WBE Participation Goal above. Explain under separate cover.

**References**

List 3 most recent contracts performed for NYC agencies (if any). Include information for each subcontract awarded in performance of such contracts. Add more pages if necessary.

CONTRACT NO.	AGENCY	DATE COMPLETED
Total Contract Amount \$ _____	Total Amount Subcontracted \$ _____	
Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____
CONTRACT NO.	AGENCY	DATE COMPLETED
Total Contract Amount \$ _____	Total Amount Subcontracted \$ _____	
Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____
CONTRACT NO.	AGENCY	DATE COMPLETED
Total Contract Amount \$ _____	Total Amount Subcontracted \$ _____	
Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____	Item of Work Subcontracted and Value of subcontract _____



N/A

List 3 most recent contracts performed for other entities. Include information for each subcontract awarded in performance of such contracts. Add more pages if necessary.

(Complete ONLY if vendor has performed fewer than 3 New York City contracts.)

TYPE OF Contract	ENTITY	DATE COMPLETED
Manager at entity that hired vendor (Name/Phone No./Email)		
Total Contract Amount \$	Total Amount Subcontracted \$	
Type of Work Subcontracted		

TYPE OF Contract	AGENCY/ENTITY	DATE COMPLETED
Manager at agency/entity that hired vendor (Name/Phone No./Email)		
Total Contract Amount \$	Total Amount Subcontracted \$	
Item of Work Subcontracted and Value of subcontract	Item of Work Subcontracted and Value of subcontract	Item of Work Subcontracted and Value of subcontract

TYPE OF Contract	AGENCY/ENTITY	DATE COMPLETED
Manager at entity that hired vendor (Name/Phone No./Email)		
Total Contract Amount \$	Total Amount Subcontracted \$	
Item of Work Subcontracted and Value of subcontract	Item of Work Subcontracted and Value of subcontract	Item of Work Subcontracted and Value of subcontract

VENDOR CERTIFICATION: I hereby affirm that the information supplied in support of this waiver request is true and correct, and that this request is made in good faith.

Signature: \_\_\_\_\_  
Print Name: \_\_\_\_\_

Date: \_\_\_\_\_  
Title: \_\_\_\_\_

Shaded area below is for agency completion only

AGENCY CHIEF CONTRACTING OFFICER APPROVAL

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

CITY CHIEF PROCUREMENT OFFICER APPROVAL

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Waiver Determination

Full Waiver Approved: ☐  
Waiver Denied: ☐  
Partial Waiver Approved: ☐  
Revised Participation Goal: \_\_\_\_\_ %





#1

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

**BID FOR FURNISHING ALL LABOR AND  
MATERIAL NECESSARY AND REQUIRED FOR:**

**PROJECT ID: PO79GENER**

**Replacement of Generators at 2 NYPD Precincts  
Various  
Manhattan**

Name of Bidder: COMMERCE ELECTRICAL CONTRACTING CORP.

Date of Bid Opening: 3/20/2018

Bidder is: (Check one, whichever applies) Individual ( ) Partnership ( ) Corporation (X)

Place of Business of Bidder: 23-86 BQE WEST, ASTORIA NY 11103

Bidder's Telephone Number: 718-233-4955 Bidder's Fax Number: 347-368-4560

Bidder's Email Address: JAMES@COMMERCEELECTRICAL.COM

Residence of Bidder (If Individual): \_\_\_\_\_

If Bidder is a Partnership, fill in the following blanks:

Names of Partners

Residence of Partners

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If Bidder is a Corporation, fill in the following blanks:

Organized under the laws of the State of NY

Name and Home Address of President: DIMITRIOS TOMBORIS, 3 HARRIS CT GREAT NECK NY 11021

Name and Home Address of Secretary: DASHAMIR URUCI, 9 FOXHURST LANE, MANHASSET NY 11030

Name and Home Address of Treasurer: ESSAM HANNA, 21 COUNTRY VILLAGE LANE, NEW HYDE PARK NY 11040

## BID FORM

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The above-named 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 set forth on the Affirmation included as page 17 of this Bid Booklet.

The bidder hereby affirms that it has paid all applicable City income, excise and other taxes for all years it has conducted business activities in New York City.

5. 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).

## 6. 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.

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.

7. 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.

8. 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.

9. 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:

10. **M/WBE UTILIZATION PLAN:** By signing its bid, the bidder agrees to the Vendor Certification and Required Affirmations set forth below, unless a full waiver of the Participation Goals is granted. The Vendor Certification and Required Affirmations will be deemed to satisfy the requirement to complete Section V of Part II of Schedule B: M/WBE Utilization Plan.

### **Section V: Vendor Certification and Required Affirmations:**

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
- 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.

**BID FORM: SITE A (5th NYPD Precinct)**

**PROJECT ID: PO79GENER**

**TOTAL BID PRICE:** In the space provided below, the Bidder shall indicate the total bid price in figures.

- A. LUMP SUM PRICE - Total price for all labor and material for all required work, excluding item (B) set forth below. Total Price shall include all costs and expenses, i.e. labor, material overhead and profit for all the Work, described and shown in the drawings and specifications.

Total Price For  
Labor

\$ 687,731

+

Total Price for Material Sold and  
Delivered

\$ 567,957

Total Price for Item A= \$ 1,255,688

- B. ALLOWANCE for Incidental Asbestos Abatement  
(Section 028013 of the Specifications)

\$15,000.00

C1 TOTAL BID PRICE FOR SITE A ONLY (Add A + B)

\$1,270,688

**BIDDER'S SIGNATURE AND AFFIDAVIT**

- \* **SUBCONTRACTOR IDENTIFICATION:** You MUST complete and submit the form entitled "Bidder's Identification of Subcontractors" (page 17) at the time you submit your bid. You must submit this form in a separate, sealed envelope (BID ENVELOPE #2). In the event an award of contract is not made to the Bidder, the Bidder hereby authorizes the Agency to shred the form entitled "Bidder's Identification of Subcontractors". ☒ Yes ☐ No

Bidder: COMMERCE ELECTRICAL CONTRACTING CORP.

By: 

(Signature of Partner or corporate officer)

Attest:  
(Corporate Seal)

  
Secretary of Corporate Bidder

Affidavit on the following page should be subscribed and sworn to before a Notary Public

**BID FORM: SITE B (25th NYPD Precinct)**

**PROJECT ID: PO79GENER**

**TOTAL BID PRICE:** In the space provided below, the Bidder shall indicate the total bid price in figures.

- A. **LUMP SUM PRICE** - Total price for all labor and material for all required work, excluding item (B) set forth below. Total Price shall include all costs and expenses, i.e. labor, material overhead and profit for all the Work, described and shown in the drawings and specifications.

Total Price For  
Labor

\$ 1,288,433

Total Price for Material Sold and  
Delivered

\$ 738,876

Total Price for Item A = \$ 2,027,309

- B. **ALLOWANCE** for Incidental Asbestos Abatement  
(Section 028013 of the Specifications)

\$15,000.00

**C2 TOTAL BID PRICE FOR SITE B ONLY (Add A + B)**

\$ 2,042,309

**BIDDER'S SIGNATURE AND AFFIDAVIT**

- \* **SUBCONTRACTOR IDENTIFICATION:** You **MUST** complete and submit the form entitled "Bidder's Identification of Subcontractors" (page 17) at the time you submit your bid. You must submit this form in a separate, sealed envelope (BID ENVELOPE #2). In the event an award of contract is not made to the Bidder, the Bidder hereby authorizes the Agency to shred the form entitled "Bidder's Identification of Subcontractors". ☒ Yes ☐ No

Bidder: COMMERCE ELECTRICAL CONTRACTING CORP.

By: \_\_\_\_\_

(Signature of Partner or corporate officer)

Attest:  
(Corporate Seal)

Secretary of Corporate Bidder

Affidavit on the following page should be subscribed and sworn to before a Notary Public

**BID FORM: Replacement of Generators at 2 NYPD Precincts**

**PROJECT ID: PO79GENER**

**TOTAL BID PRICE:** In the space provided below, the Bidder shall indicate the total bid price in figures.

C1 SUBTOTAL BID PRICE from SITE A (5th NYPD Precinct) (Page 13-1) \$ 1,270,688.00

C2 SUBTOTAL BID PRICE from SITE B (25th NYPD Precinct) (Page 13-2) \$2,042,309.00

**TOTAL BID PRICE (Add C1 + C2)**

(a/k/a BID PROPOSAL)

\$ 3,312,997.00

BB 3/20/18

INCLUDING ADDENDUM #1  
AND AN ADDENDUM

**BIDDER'S SIGNATURE AND AFFIDAVIT**

- \* **SUBCONTRACTOR IDENTIFICATION:** You MUST complete and submit the form entitled "Bidder's Identification of Subcontractors" (page 17) at the time you submit your bid. You must submit this form in a separate, sealed envelope (BID ENVELOPE #2). In the event an award of contract is not made to the Bidder, the Bidder hereby authorizes the Agency to shred the form entitled "Bidder's Identification of Subcontractors". ☒ Yes ☐ No

Bidder: COMMERCE ELECTRICAL CONTRACTING CORP.

By: \_\_\_\_\_

(Signature of Partner or corporate officer)

Attest:  
(Corporate Seal)

Secretary of Corporate Bidder

Affidavit on the following page should be subscribed and sworn to before a Notary Public

**BID FORM (TO BE NOTARIZED)**

\*\*\*\*\*

**AFFIDAVIT WHERE BIDDERS IS AN INDIVIDUAL**

STATE OF NEW YORK, COUNTY OF \_\_\_\_\_ ss:

being duly sworn says:

I am the person described in and who executed the foregoing bid, and the several matters therein stated are in all respects true.

\_\_\_\_\_  
(Signature of the person who signed the Bid)

Subscribed and sworn to before me this  
\_\_\_\_ day of \_\_\_\_\_,

\_\_\_\_\_  
Notary Public

\*\*\*\*\*

**AFFIDAVIT WHERE BIDDERS IS A PARTNERSHIP**

STATE OF NEW YORK, COUNTY OF \_\_\_\_\_ ss:

being duly sworn says:

I am a member of \_\_\_\_\_ the firm described in and which executed the foregoing bid  
subscribed the name of the firm thereto on behalf of the firm, and the several matters therein stated are in all respects true.

\_\_\_\_\_  
(Signature of Partner who signed the Bid)

Subscribed and sworn to before me this  
\_\_\_\_ day of \_\_\_\_\_,

\_\_\_\_\_  
Notary Public

\*\*\*\*\*

**AFFIDAVIT WHERE BIDDERS IS A CORPORATION**

STATE OF NEW YORK, COUNTY OF Queens ss:  
DASHAMIR URUCI

being duly sworn says:

I am the SECRETARY of the above named corporation whose name is subscribed to and which executed  
the foregoing bid. I reside at 9 FOXHURST LANE, MANHASSET NY 11030

I have knowledge of the several matters therein stated, and they are in all respects true.

\_\_\_\_\_  
(Signature of Corporate Officer who signed the Bid)

Subscribed and sworn to before me this  
20 day of March, 2018

Roseanne Petrocelli  
Notary Public

ROSEANNE PETROCELLI  
Notary Public State of New York  
No. 01PE6041009  
Qualified in Kings County  
Commission Expires 5/01/20 18

### AFFIRMATION

The undersigned bidder affirms and declares that said bidder is not in arrears to the City of New York upon debt contract or taxes and is not a defaulter, as surety or otherwise, upon obligation to the City of New York, and has not been declared not responsible, or disqualified, by any agency of the City of New York, nor is there any proceeding pending relating to the responsibility or qualification of the bidder to receive public contracts except NONE

(If none, the bidder shall insert the word "None" in the space provided above.)

Full Name of Bidder: COMMERCE ELECTRICAL CONTRACTING CORP.

Address: 23-86 BQE WEST

City: ASTORIA

State: NY

Zip Code: 11103

CHECK ONE BOX AND INCLUDE APPROPRIATE NUMBER:

☐ A - Individual or Sole Proprietorship \*  
SOCIAL SECURITY NUMBER

☐ B - Partnership, Joint Venture or other unincorporated organization  
EMPLOYER IDENTIFICATION NUMBER

☒ C - Corporation  
EMPLOYER IDENTIFICATION NUMBER

20-5890295

By: \_\_\_\_\_

Signature

Title: SECRETARY

If a corporation, place seal here

This affirmation must be signed by an officer or duly authorized representative.

\*Under the Federal Privacy Act the furnishing of Social Security Numbers by bidders on City contracts is voluntary. Failure to provide a Social Security Number will not result in a bidder's disqualification. Social Security Numbers will be used to identify bidders, proposers or vendors to ensure their compliance with laws, to assist the City in enforcement of laws, as well as to provide the City a means of identifying of businesses which seek City contracts.





## **BIDDER'S IDENTIFICATION OF SUBCONTRACTORS**

### **NOTICE TO BIDDERS**

**SUBMISSION:** The Bidder must, at the time of the bid, submit the completed form on the next page ("BIDDER'S IDENTIFICATION OF SUBCONTRACTORS"). This form must be submitted in a separate, sealed envelope (BID ENVELOPE #2). Failure to do so will result in the disqualification of the bid as non-responsive.

\*\*\*\*\*

Please be advised that pursuant to GML § 101(5) the Bidder is required to submit with its bid the names of subcontractors it intends to use to perform the following work on this contract, as well as the agreed-upon amount to be paid to each:

- plumbing and gas fitting;
- steam heating, hot water heating, ventilating and air conditioning apparatus; and
- electric wiring and standard illuminating fixtures.

**NOTE:** This project may not involve all of the above listed subcontractors. Please see the form on the next page which indicates the subcontractors required for this Project.

All listed subcontractors must be used to perform the work identified on this form for the amount listed. The listed subcontractors are not alternatives to each other. The list of subcontractors is to be submitted in a separate sealed envelope by completing the form 'Bidders Identification of Subcontractors' for any subcontractors intended to be used in any of the three trades listed above. If bidder intends to use its own forces for any of the above listed work, bidder should complete this form using its own name.

Failure to submit the completed form on the next page ("Bidder's Identification of Subcontractors") that includes the names of subcontractors and the agreed upon amounts to be paid to such subcontractors will render the bid non-responsive.

PLEASE NOTE: for any contract that is subject to M/WBE Participation Goals under Local Law 129, if the bidder's intention to use its own forces to do any of the above-referenced work would result in Bidder's failure to attain the Target Subcontracting Percentage identified in Schedule B (Subcontractor Utilization Plan), the bid will be non-responsive unless the bidder requests and obtains a Waiver of Target Subcontracting Percentage (Schedule B, Part III) in advance of bid submission. Failure to submit the completed 'BIDDERS IDENTIFICATION OF SUBCONTRACTORS' form that includes the names of subcontractors and the agreed upon amounts to be paid to such subcontractors will render the bid non-responsive.

After the low bid is announced, the sealed list submitted by the low bidder will be opened and the names of the subcontractors will be announced. The sealed lists of subcontractors submitted by all other bidders shall be maintained by the Agency unopened unless such bidder shall become the low bidder (e.g., the initial low bidder is found non-responsive). All unopened lists of subcontractors shall be returned to the bidders unopened after contract award, unless the bidder has given the agency permission to shred the form.

After bid submission, any change of subcontractor or agreed-upon amount to be paid to each shall require approval of the Agency upon a showing of a legitimate construction need which shall include, but not be limited to, a change in project specifications, a change in project material costs, a change to subcontractor status as determined pursuant to §222 (2)(c) of the Labor Law, or if the subcontractor has become otherwise unwilling, unable or unavailable to perform the subcontract.

## BIDDER'S IDENTIFICATION OF SUBCONTRACTORS

Project ID: PO79GENER

**SUBMISSION:** In addition to its Bid (Bid Envelope # 1), the Bidder must, at the time of the bid, complete and submit this form in a separate, sealed envelope (Bid Envelope # 2). To complete this form, the Bidder must identify the subcontractors it intends to use for the work listed below, as well as the dollar amount to be paid to each subcontractor. Failure to complete this form and submit it in a separate, sealed envelope will result in the disqualification of the bid as non-responsive.

The Bidder intends to use the following subcontractors. If the Bidder intends to do any of the work referenced below with its own forces, the Bidder should complete this form using its own name. If multiple subcontractors for any trade are proposed, Bidder may submit multiple copies of this form.

1. **HVAC CONTRACTOR:**

Description of HVAC Work:

CDE AIR CONDITIONING CO. INC.  
(Print Name)

Agreed amount to be paid Subcontractor: \$ 816,928

2. **ELECTRICAL CONTRACTOR**

ARCH ELECTRIC INC.

Agreed amount to be paid Subcontractor: \$ 400,000

**BIDDER'S SIGNATURE:** The Bidder must sign and complete this form in the spaces provided below:

  
(Bidder's Signature)

DASHAMIR URUCI  
(Print Name)

23-86 BQE WEST, ASTORIA NY 11103  
(Address)

<u>SECRETARY</u> (Title)	<u>718-233-4955</u> (Phone #)	<u>347-368-4560</u> (Fax#)	<u>3/19/2018</u> (Date)
-----------------------------	----------------------------------	-------------------------------	----------------------------

**BID BOND 1  
FORM OF BID BOND**

KNOW ALL MEN BY THESE PRESENTS. That we,

COMMERCE ELECTRICAL CONTRACTING CORP.  
23-86 BQE West Suite 201  
Astoria, NY 11103

hereinafter referred to as the "Principal", and

Aegis Security Insurance Company  
4507 North Front Street  
Harrisburg, PA 17110

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 the Amount Bid

(\$ <sup>10% of the</sup> Amount Bid ), 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 \_\_\_\_\_

Replacement of Generators at Two (2) NYPD Precincts; PIN: 8502017PD0006C / E:PIN: 85017B0108

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 15th day of March, 2018.

(Seal)

COMMERCE ELECTRICAL CONTRACTING CORP. (L.S.)

Principal

By:

(Seal)

Aegis Security Insurance Company

Surety

By:

Philip S. Tobey, Attorney-in-Fact

BID BOND 3

ACKNOWLEDGEMENT OF PRINCIPAL IF A CORPORATION

State of NY County of QUEEN ss:  
On this 20 day of MARCH, 2017, before me personally came  
DASHAMIR VECI to me known, who, being by me duly sworn, did depose and say that he  
resides at 9 FOREST LANE, MANHATTAN NY 1030  
that he is the SECRETARY of COMMERCIAL ELECTRIC CONTRACTING CORP  
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.

ROSEANNE PETROCELLI  
Notary Public State of New York  
No. 01PE6041009  
Qualified in Kings County  
Commission Expires 5/01/20 18

Roseanne Petrocelli  
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

## BID BREAKDOWN

**Submission:** Bidders are advised that the requirement to submit a Bid Breakdown applies to each contract for which an "X" is indicated before the word "Yes". If required, the bidder must submit, with its bid, a completed Bid Breakdown. Failure to provide a completed Bid Breakdown may result in rejection of the bid as non-responsive.

X                      YES                      NO

### Limitations on Use of Bid Breakdown:

Bidders are advised that the Bid Breakdown shall be used for bid analysis purposes only and shall not be binding for any other purposes under the Contract, including, without limitation, for payment purposes or in connection with a contractor claim for extra work. If the form for the Bid Breakdown does not include an item of work required by the Contract Documents, such omission shall have no effect whatsoever, nor shall it be used by the contractor in connection with a claim for extra work (i.e., work for which the contractor is entitled to a change order).

### Instructions for Preparing Bid Breakdown:

- (A) The Bid Breakdown is set forth on the following pages of this Bid Booklet and is in accordance with the Construction Specification Institute (CSI) format. For all items of work listed in the Bid Breakdown, the bidder must indicate the price for labor and the price for material, as well as the estimated quantities required.
- (B) In preparing its Bid Breakdown, the bidder shall submit prices that include all costs for overhead and profit. Overhead shall include, without limitation, all costs in connection with the following: administration, management, superintendence, small tools, insurance, bonds, and provision of services or items required by the General Conditions [except for Security/Fire Guard Services and Temporary Heat]. If the Project requires Security/Fire Guard Services and/or Temporary Heat, such service(s) will be included as separate line items in the Bid Breakdown.
- (C) If an item is set forth in the Bid Breakdown, but is not included in the Contract Documents (Drawings, Specifications, General Conditions, and/or Addenda), the bidder is advised to leave the item blank and exclude the cost of the item from its grand total. In an attachment to its Bid Breakdown, the bidder shall provide a list of all items left blank.
- (D) If an item is not set forth in the Bid Breakdown, but is included in the Contract Documents (Drawings, Specifications, General Conditions, and/or Addenda), the bidder is advised to add the item to its Bid Breakdown and include the cost of the item in its grand total. In an attachment to its Bid Breakdown, the bidder shall provide a list of all items added.

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**New York City Department of  
DESIGN + CONSTRUCTION**

Project: Replacement of Generators at 2 NYPD Precincts  
Location: Site A: 25th Precinct : 120 E 119th Street, New York, NY 10035  
Bidder: Commerce Electrical Contracting Inc.

**CONTRACTOR'S BID BREAKDOWN FORM**

**CONTRACT 1 - ELECTRICAL WORK**

DDC ID: P079GENER  
Sponcer Agency: NYPD

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
<b>030000</b>	<b>CONCRETE</b>							
<b>31000</b>	<b>CONCRET FORMWORK</b>							
	Formwork	1	LS	\$1,760.00	\$1,760.00	\$3,480.00	\$3,480.00	\$5,240.00
	Subtotal							\$5,240.00
<b>32100</b>	<b>CONCRETE REINFORCING</b>							
	Rebar	1	LS	\$20,146.00	\$20,146.00	\$15,880.00	\$15,880.00	\$36,026.00
	Subtotal							\$36,026.00
<b>33000</b>	<b>CAST-IN-PLACE CONCRETE</b>							
	Concrete Housekeeping Pad (4" Thick)	80	SF	\$68.00	\$5,440.00	\$112.00	\$8,960.00	\$14,400.00
	Concrete Patchwork at Penetrations & New Walls	1	LS	\$2,400.00	\$2,400.00	\$3,200.00	\$3,200.00	\$5,600.00
	Repair Damaged Slab on Grade as required (Cellar)	140	SF	\$45.00	\$6,300.00	\$69.00	\$9,660.00	\$15,960.00
	Slab Removal, Excavate, pour, slab repairs at For 6" CMU wall Haunch	120	LF	\$58.00	\$6,960.00	\$112.00	\$13,440.00	\$20,400.00
	Conc Spill curb at Door Thresholds	1	LOC	\$680.00	\$680.00	\$1,280.00	\$1,280.00	\$1,960.00
	Subtotal							\$58,320.00
<b>040000</b>	<b>MASONRY</b>							
<b>42000</b>	<b>Unit Masonry</b>							
	Repair and parge extended brick openings	1	LOC	\$2,870.00	\$2,870.00	\$4,432.00	\$4,432.00	\$7,302.00
	Subtotal							\$7,302.00
<b>42200</b>	<b>CONCRETE UNIT MASONRY</b>							
	6" 2 HR Rated Reinforced CMU Block Wall	324	SF	\$28.00	\$9,072.00	\$45.00	\$14,580.00	\$23,652.00
	Subtotal							\$23,652.00
<b>050000</b>	<b>METALS</b>							
	Metal Fastening							
	Shim Plates, welds, nuts, bolts, accessories, etc	1	LS	\$6,280.00	\$6,280.00	\$9,860.00	\$9,860.00	\$16,140.00
	Subtotal							\$16,140.00
<b>051200</b>	<b>STRUCTURAL STEEL</b>							
	STRUCTURAL STEEL	840	LB	\$10.00	\$8,400.00	\$14.00	\$11,760.00	\$20,160.00



**CONTRACTOR'S BID BREAKDOWN FORM**

**CONTRACT 1 - ELECTRICAL WORK**

**Project:** Replacement of Generators at 2 NYPD Precincts  
**Location:** Site A: 25th Precinct : 120 E 119th Street, New York, NY 10035  
**Bidder:** Commerce Electrical Contracting Inc.

DDC ID: P079GENER  
Sponcer Agency: NYPD

[illegible]



**New York City Department of  
DESIGN + CONSTRUCTION**

**CONTRACTOR'S BID BREAKDOWN FORM  
CONTRACT 1 - ELECTRICAL WORK**

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CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
	Remove existing Louvers	1	LS	\$0.00	\$0.00	\$1,165.00	\$1,165.00	\$1,165.00
	Misc Demolition	1	LS	\$0.00	\$0.00	\$3,200.00	\$3,200.00	\$3,200.00
	Chopping, Patching, fire sealing	1	LS	\$0.00	\$0.00	\$1,650.00	\$1,650.00	\$1,650.00
	Equipment handling & material distribution	1	LS	\$0.00	\$0.00	\$2,600.00	\$2,600.00	\$2,600.00
	Various sub Contractor job	1	LS	\$0.00	\$0.00	\$5,400.00	\$5,400.00	\$5,400.00
	<b>Subtotal</b>							<b>\$29,691.00</b>
230529	<b>HANGERS &amp; SUPPORTS FOR HVAC</b>							
	Misc equipment, duct & pipe supports	1	LS	\$2,870.00	\$2,870.00	\$6,800.00	\$6,800.00	\$9,670.00
	<b>Subtotal</b>							<b>\$9,670.00</b>
230548	<b>VIBRATION CONTROLS FOR HVAC PIPING &amp; EQUIPMENT</b>							
	Vibration isolators / seismic restraints	1	LS	\$3,580.00	\$3,580.00	\$2,560.00	\$2,560.00	\$6,140.00
	<b>Subtotal</b>							<b>\$6,140.00</b>
230553	<b>IDENTIFICATION FOR HVAC PIPING &amp; EQUIPMENT</b>							
	Valve Tags, Charts, identification, painting	1	LS	\$4,562.00	\$4,562.00	\$1,200.00	\$1,200.00	\$5,762.00
	<b>Subtotal</b>							<b>\$5,762.00</b>
230593	<b>TESTING, ADJUSTING &amp; BALANCING FOR HVAC</b>							
	Testing, Adjusting & Balancing	1	LS	\$0.00	\$0.00	\$12,800.00	\$12,800.00	\$12,800.00
	<b>Subtotal</b>							<b>\$12,800.00</b>
230711	<b>DUCT &amp; PIPING INSULATION</b>							
	Insulation engine exhaust pipe	70	LF	\$17.00	\$1,190.00	\$20.00	\$1,400.00	\$2,590.00
	1 1/2" insulation discharge duct & 2" sound lining	240	SF	\$33.00	\$7,920.00	\$30.00	\$7,200.00	\$15,120.00
	<b>Subtotal</b>							<b>\$17,710.00</b>
230993	<b>AUTOMATIC TEMPERATUR CONTROL SYSTEM</b>							
	Fuel Oil Pump	1	EA	\$1,266.00	\$1,266.00	\$2,237.00	\$2,237.00	\$3,503.00
	FSD	2	EA	\$1,870.00	\$3,740.00	\$1,680.00	\$3,360.00	\$7,100.00
	Motorized Damper	2	EA	\$2,680.00	\$5,360.00	\$2,260.00	\$4,520.00	\$9,880.00
	Electric unit Heater	1	EA	\$3,600.00	\$3,600.00	\$2,360.00	\$2,360.00	\$5,960.00



DDC ID: P079GENER  
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## CONTRACT 1 - ELECTRICAL WORK

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
	Exhaust Fan - 270 CFM	1	EA	\$990.00	\$990.00	\$654.00	\$654.00	\$1,644.00
	Audio Visual Leak Alarm	1	EA	\$4,380.00	\$4,380.00	\$3,278.00	\$3,278.00	\$7,658.00
	Fill & Leak Alarm controller	1	EA	\$2,655.00	\$2,655.00	\$1,050.00	\$1,050.00	\$3,705.00
	Fume Alarm	1	EA	\$2,977.00	\$2,977.00	\$1,843.00	\$1,843.00	\$4,820.00
	CO Alarm	1	EA	\$476.00	\$476.00	\$1,280.00	\$1,280.00	\$1,756.00
	CO Detection Panel	1	EA	\$3,280.00	\$3,280.00	\$3,875.00	\$3,875.00	\$7,155.00
	CO & Fume detectors	1	LS	\$640.00	\$640.00	\$1,280.00	\$1,280.00	\$1,920.00
	Leak detectors	1	LS	\$540.00	\$540.00	\$870.00	\$870.00	\$1,410.00
	Low Voltage Wiring	1	LS	\$3,650.00	\$3,650.00	\$4,200.00	\$4,200.00	\$7,850.00
	Misc controls reqd.	1	LS	\$1,200.00	\$1,200.00	\$4,500.00	\$4,500.00	\$5,700.00
	Subtotal							\$70,061.00
233113	METAL DUCTS							
	Galvanized steel duct	860	LBS	\$21.50	\$18,490.00	\$22.00	\$18,920.00	\$37,410.00
	Subtotal							\$37,410.00
233300	AIR DUCT ACCESSORIES							
	Air Device							
	Acoustical Louvers 48"x58" & 48"x72"	2	EA	\$2,675.00	\$5,350.00	\$1,270.00	\$2,540.00	\$7,890.00
	Drip Pan	1	EA	\$1,240.00	\$1,240.00	\$1,670.00	\$1,670.00	\$2,910.00
	Duct mounted smoke detector	2	EA	\$670.00	\$1,340.00	\$1,256.00	\$2,512.00	\$3,852.00
	WMS	32	SF	\$17.00	\$544.00	\$48.00	\$1,536.00	\$2,080.00
	Gooseneck 16 guage SS	4	EA	\$670.00	\$2,680.00	\$590.00	\$2,360.00	\$5,040.00
	Access Door	6	EA	\$670.00	\$4,020.00	\$554.00	\$3,324.00	\$7,344.00
	Flexible connection	2	LS	\$1,266.00	\$2,532.00	\$1,650.00	\$3,300.00	\$5,832.00
	Motorized Damper	2	SF	\$1,290.00	\$2,580.00	\$640.00	\$1,280.00	\$3,860.00
	Backdraft Damper	2	SF	\$940.00	\$1,880.00	\$610.00	\$1,220.00	\$3,100.00
	FSD	2	SF	\$680.00	\$1,360.00	\$600.00	\$1,200.00	\$2,560.00
	Subtotal							\$44,468.00



**New York City Department of  
DESIGN + CONSTRUCTION**

Project: Replacement of Generators at 2 NYPD Precincts  
Location: Site A, 25th Precinct : 120 E 119th Street, New York, NY 10035  
Bidder: Commerce Electrical Contracting Inc.

**CONTRACTOR'S BID BREAKDOWN FORM**

**CONTRACT 1 - ELECTRICAL WORK**

DDC ID: P079GENER

Sponcer Agency: NYPD

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
233900	<b>FANS &amp; ACCESSORIES</b>							
	Exhaust Fan - 300 CFM	1	EA	\$1,890.00	\$1,890.00	\$1,270.00	\$1,270.00	\$3,160.00
								<b>\$3,160.00</b>
235300	<b>FUEL HANDLING SYSTEMS</b>							
	Equipment							
	Fuel Oil Pump	1	EA	\$3,650.00	\$3,650.00	\$2,840.00	\$2,840.00	\$6,490.00
	Double Wall Cont Fuel Tank -550 Gal	1	EA	\$24,700.00	\$24,700.00	\$5,400.00	\$5,400.00	\$30,100.00
	Diesel Oil Fill	700	Gal	\$3.50	\$2,450.00	\$2.00	\$1,400.00	\$3,850.00
	Fuel Cooler	1	EA	\$1,760.00	\$1,760.00	\$1,240.00	\$1,240.00	\$3,000.00
	Filtration System	1	LS	\$1,244.00	\$1,244.00	\$480.00	\$480.00	\$1,724.00
	Hookup Equipment	1	LS	\$0.00	\$0.00	\$4,300.00	\$4,300.00	\$4,300.00
	5" Dia exhaust pipe	120	LF	\$22.00	\$2,640.00	\$79.00	\$9,480.00	\$12,120.00
	4" Dia Exhaust Pipe	120	LF	\$18.00	\$2,160.00	\$66.00	\$7,920.00	\$10,080.00
	2" Dia vent pipe	116	LF	\$12.00	\$1,392.00	\$54.00	\$6,264.00	\$7,656.00
	Insulate Muffler	1	EA	\$2,488.00	\$2,488.00	\$2,960.00	\$2,960.00	\$5,448.00
	Tie-in exhaust & vent pipe	1	EA	\$280.00	\$280.00	\$1,240.00	\$1,240.00	\$1,520.00
	Fuel Oil System piping							
	3" Dia pipe	20	LF	\$32.00	\$640.00	\$86.00	\$1,720.00	\$2,360.00
	1" Dia Pipe	60	LF	\$22.00	\$1,320.00	\$86.00	\$5,160.00	\$6,480.00
	Containment (Black Steel pipe							
	6" Dia pipe	50	LF	\$41.00	\$2,050.00	\$84.00	\$4,200.00	\$6,250.00
	2" Dia pipe	30	LF	\$24.00	\$720.00	\$72.00	\$2,160.00	\$2,880.00
	Tie -in Fuel Oil Pipe	1	EA	\$0.00	\$0.00	\$1,260.00	\$1,260.00	\$1,260.00
	Flame arrestor	1	EA	\$840.00	\$840.00	\$940.00	\$940.00	\$1,780.00
	Pipe Flexible connection	1	LS	\$440.00	\$440.00	\$890.00	\$890.00	\$1,330.00
	Spacer for double wall piping	1	LS	\$160.00	\$160.00	\$450.00	\$450.00	\$610.00
	Penetrations & sleeves	1	LS	\$245.00	\$245.00	\$280.00	\$280.00	\$525.00



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**CONTRACTOR'S BID BREAKDOWN FORM**

**CONTRACT 1 - ELECTRICAL WORK**

DDC ID: P079GENER

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CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
	Clean Piping	1	LS	\$0.00	\$0.00	\$390.00	\$390.00	\$390.00
	Welding Req'd	1	LS	\$540.00	\$540.00	\$460.00	\$460.00	\$1,000.00
	Misc. Valves & Sp	1	LS	\$2,480.00	\$2,480.00	\$1,240.00	\$1,240.00	\$3,720.00
	<b>Subtotal</b>							<b>\$114,873.00</b>
238239	<b>UNIT HEATERS</b>							
	Electric unit Heater	1	EA	\$3,400.00	\$3,400.00	\$1,290.00	\$1,290.00	\$4,690.00
	<b>Subtotal</b>							<b>\$4,690.00</b>
238240	<b>FUEL EXHAUST CONDENSATE ACID NEUTRALIZER</b>							
	Acid Neutralizer Tank w/ asso 1/2" SS pipe	1	LS	\$2,400.00	\$2,400.00	\$870.00	\$870.00	\$3,270.00
	<b>Subtotal</b>							<b>\$3,270.00</b>
260000	<b>ELECTRICAL</b>							
260500	<b>Common Work Results for Electrical</b>							
	Demolition (disconnect & make sure only):							
	76KW generator w Asso devices	1	LS	\$0.00	\$0.00	\$16,800.00	\$16,800.00	\$16,800.00
	260 Amp ATS	1	EA	\$0.00	\$0.00	\$6,450.00	\$6,450.00	\$6,450.00
	200 Amp MTS	1	EA	\$0.00	\$0.00	\$2,400.00	\$2,400.00	\$2,400.00
	200 Amp Nema 1 disconnect Sw	1	EA	\$0.00	\$0.00	\$1,280.00	\$1,280.00	\$1,280.00
	201 Amp special purpose receptacle	1	EA	\$0.00	\$0.00	\$1,280.00	\$1,280.00	\$1,280.00
	Wire Trough	1	EA	\$0.00	\$0.00	\$840.00	\$840.00	\$840.00
	Lighting Fixture	1	EA	\$0.00	\$0.00	\$660.00	\$660.00	\$660.00
	Splice Box	1	EA	\$0.00	\$0.00	\$240.00	\$240.00	\$240.00
	200 Amp Feeders	60	LF	\$0.00	\$0.00	\$18.00	\$1,080.00	\$1,080.00
	<b>Mechanical req'd</b>							
	Motorized Damper	2	EA	\$650.00	\$1,300.00	\$452.00	\$904.00	\$2,204.00
	Fuel Leak Alarm Panel (FBO)	1	EA	\$480.00	\$480.00	\$1,290.00	\$1,290.00	\$1,770.00
	CO detector Alarm Panel (FBO)	1	EA	\$320.00	\$320.00	\$1,300.00	\$1,300.00	\$1,620.00
	Remote Audio Visual Alarm	1	EA	\$3,940.00	\$3,940.00	\$1,690.00	\$1,690.00	\$5,630.00



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**CONTRACTOR'S BID BREAKDOWN FORM**

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DDC ID: P079GENER

Sponcer Agency: NYPD

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
	Toggle Switch	2	EA	\$190.00	\$380.00	\$112.00	\$224.00	\$604.00
	Unit Heater	1	EA	\$280.00	\$280.00	\$210.00	\$210.00	\$490.00
	Exhaust Fan	1	EA	\$260.00	\$260.00	\$212.00	\$212.00	\$472.00
	Fuel Oil Pump	1	EA	\$540.00	\$540.00	\$410.00	\$410.00	\$950.00
	Fire Smoke Damper	1	EA	\$360.00	\$360.00	\$450.00	\$450.00	\$810.00
	Lighting	5	EA	\$320.00	\$1,600.00	\$112.00	\$560.00	\$2,160.00
	Lighting Fixture Type A	2	EA	\$360.00	\$720.00	\$115.00	\$230.00	\$950.00
	Emergency Ballast adder	2	EA	\$84.00	\$168.00	\$112.00	\$224.00	\$392.00
	Extend existing active wiring	1	LS	\$650.00	\$650.00	\$820.00	\$820.00	\$1,470.00
	Relocate generator power panel	1	EA	\$240.00	\$240.00	\$1,280.00	\$1,280.00	\$1,520.00
	Re-route existing feeder	1	LS	\$1,200.00	\$1,200.00	\$3,450.00	\$3,450.00	\$4,650.00
	Refeed existing panels	1	EA	\$640.00	\$640.00	\$2,480.00	\$2,480.00	\$3,120.00
	Temporary generator (assume 4 weeks) & feeders	1	LS	\$14,600.00	\$14,600.00	\$8,600.00	\$8,600.00	\$23,200.00
	Shut down/ switch over	1	LS	\$1,280.00	\$1,280.00	\$3,460.00	\$3,460.00	\$4,740.00
	Test existing curcuit breaker & feeders	1	LS	\$0.00	\$0.00	\$860.00	\$860.00	\$860.00
	Vibration isolators / seismic restraints	1	LS	\$1,280.00	\$1,280.00	\$2,480.00	\$2,480.00	\$3,760.00
	Protect existing EQUIPMENT & DEVICES	1	LS	\$450.00	\$450.00	\$840.00	\$840.00	\$1,290.00
	Misc electrical work	1	LS	\$2,000.00	\$2,000.00	\$3,000.00	\$3,000.00	\$5,000.00
	Subtotal							\$98,692.00
260519	LOW VOLTAGE ELECTRICAL POWER CONDUCTORS & CABLES							
	600 MCM	600	Lf	\$5.20	\$3,120.00	\$6.00	\$3,600.00	\$6,720.00
	250 MCM	400	Lf	\$3.40	\$1,360.00	\$4.50	\$1,800.00	\$3,160.00
	#3/0 wire	150	Lf	\$3.00	\$450.00	\$3.00	\$450.00	\$900.00
	#2/0 wire(Grounding)	200	Lf	\$2.60	\$520.00	\$2.70	\$540.00	\$1,060.00
	#1/0 wire(Grounding)	100	Lf	\$2.40	\$240.00	\$2.60	\$260.00	\$500.00
	#1 Wire	200	Lf	\$1.90	\$380.00	\$2.50	\$500.00	\$880.00
	#3 Wire	100	Lf	\$1.60	\$160.00	\$2.00	\$200.00	\$360.00





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	#6 Wire	100	Lf	\$1.30	\$130.00	\$1.95	\$195.00	\$325.00
	#8 Wire	100	Lf	\$1.10	\$110.00	\$1.90	\$190.00	\$300.00
	#10 Wire	1000	Lf	\$0.95	\$950.00	\$1.80	\$1,800.00	\$2,750.00
	#10 Wire (mechanical)	1200	Lf	\$0.95	\$1,140.00	\$1.80	\$2,160.00	\$3,300.00
	#12 Wire (mechanical)	2400	Lf	\$0.80	\$1,920.00	\$1.80	\$4,320.00	\$6,240.00
	#12 Wire (Fire Alarm)	3000	Lf	\$0.80	\$2,400.00	\$1.80	\$5,400.00	\$7,800.00
	#12 Wire (wiring devices & alarm)	2000	Lf	\$0.80	\$1,600.00	\$1.80	\$3,600.00	\$5,200.00
	#12 Wire (Lighting)	1600	Lf	\$0.80	\$1,280.00	\$1.80	\$2,880.00	\$4,160.00
	Control Wiring (generator)	1	LS	\$4,500.00	\$4,500.00	\$7,800.00	\$7,800.00	\$12,300.00
	Subtotal							\$55,955.00
260526	GROUNDING & BONDING FOR ELECTRICAL SYSTEMS							
	Ground Rod	2	EA	\$840.00	\$1,680.00	\$650.00	\$1,300.00	\$2,980.00
	Subtotal							\$2,980.00
260529	HANGERS & SUPPORTS FOR ELECTRICAL SYSTEMS							
	Hangers & Supports	1	LS	\$1,290.00	\$1,290.00	\$820.00	\$820.00	\$2,110.00
	Mounting assemblies (TS)	1	EA	\$840.00	\$840.00	\$660.00	\$660.00	\$1,500.00
	Subtotal							\$3,610.00
260533	RACEWAY & BOXES FOR ELECTRICAL SYSTEM							
	Junction Box	6	EA	\$260.00	\$1,560.00	\$540.00	\$3,240.00	\$4,800.00
	Wire Trough	1	EA	\$640.00	\$640.00	\$1,270.00	\$1,270.00	\$1,910.00
	4" RGS	60	Lf	\$8.90	\$534.00	\$19.60	\$1,176.00	\$1,710.00
	3" RGS	100	Lf	\$6.90	\$690.00	\$18.00	\$1,800.00	\$2,490.00
	2" RGS	30	Lf	\$4.90	\$147.00	\$17.00	\$510.00	\$657.00
	1 1/2" RGS	40	Lf	\$4.40	\$176.00	\$16.90	\$676.00	\$852.00
	1" RGS	150	Lf	\$3.90	\$585.00	\$15.00	\$2,250.00	\$2,835.00
	3/4" RGS	340	Lf	\$3.60	\$1,224.00	\$14.00	\$4,760.00	\$5,984.00
	3/4" RGS(Mechanical)	80	Lf	\$3.60	\$288.00	\$14.00	\$1,120.00	\$1,408.00



New York City Department of  
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CONTRACTOR'S BID BREAKDOWN FORM

**CONTRACT 1 - ELECTRICAL WORK**

DDC ID: P079GENER

Sponcer Agency: NYPD

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
	3/4" RGS (Fire Alarm)	190	Lf	\$3.60	\$684.00	\$14.00	\$2,660.00	\$3,344.00
	3/4" RGS (Wiring Devices & Alarms)	240	Lf	\$3.60	\$864.00	\$14.00	\$3,360.00	\$4,224.00
	3/4" RGS (Lighting)	160	Lf	\$3.60	\$576.00	\$14.00	\$2,240.00	\$2,816.00
	<b>Subtotal</b>							<b>\$33,030.00</b>
260544	<b>SLEEVES SEAL FOR ELECTRICAL SYSTEM RACEWAYS</b>							
	Sleeves / Firestopping	1	LS	\$1,260.00	\$1,260.00	\$840.00	\$840.00	\$2,100.00
	<b>Subtotal</b>							<b>\$2,100.00</b>
260553	<b>IDENTIFICATION OF ELECTRICAL SYSTEMS</b>							
262726	<b>WIRING DEVICES</b>							
	Single pole Light Switch	2	EA	\$112.00	\$224.00	\$54.00	\$108.00	\$332.00
	GFI Duplex Receptacle	2	EA	\$184.00	\$368.00	\$56.00	\$112.00	\$480.00
	<b>Subtotal</b>							<b>\$812.00</b>
262813	<b>FUSES</b>							
	400 Amps Nema 1 Disconnect Switch	1	EA	\$2,180.00	\$2,180.00	\$1,260.00	\$1,260.00	\$3,440.00
	30 Amps Nema 1 Disconnect Switch	2	EA	\$360.00	\$720.00	\$240.00	\$480.00	\$1,200.00
	<b>Subtotal</b>							<b>\$4,640.00</b>
262816	<b>ENCLOSED SWITCHES &amp; CIRCUIT BREAKERS</b>							
	400 Amps Cuircuit Breaker in Nema 1 Encln	1	EA	\$3,460.00	\$3,460.00	\$1,640.00	\$1,640.00	\$5,100.00
	30 Amps 3-Pole circuit Breaker	2	EA	\$165.00	\$330.00	\$360.00	\$720.00	\$1,050.00
	20 Amps 3-Pole circuit Breaker	4	EA	\$125.00	\$500.00	\$340.00	\$1,360.00	\$1,860.00
	<b>Subtotal</b>							<b>\$8,010.00</b>
263213	<b>ENGINE GENERATORS</b>							
	100 KW Generator	1	EA	\$149,600.00	\$149,600.00	\$36,800.00	\$36,800.00	\$186,400.00
	Factory Testing	1	LS	\$0.00	\$0.00	\$2,400.00	\$2,400.00	\$2,400.00
	Fuel for test & Final Fill	1	LS	\$1,280.00	\$1,280.00	\$240.00	\$240.00	\$1,520.00
	Housekeeping concrete Pad	2	EA	\$0.00	\$0.00	\$450.00	\$900.00	\$900.00



## CONTRACTOR'S BID BREAKDOWN FORM

## CONTRACT 1 - ELECTRICAL WORK

## Project: Replacement of Generators at 2 NYPD Precincts

**Location:** Site A: 25th Precinct : 120 E 119th Street, New York, NY 10035

**Bidder: Commerce Electrical Contracting Inc.**

DDC ID: P079GENER

**Sponcer Agency: NYPD**

	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
CSI Number	Generator Remote Annunciator	1	EA	\$1,260.00	\$1,260.00	\$680.00	\$680.00	\$1,940.00
	Rigging	1	LS	\$1,000.00	\$1,000.00	\$4,000.00	\$4,000.00	\$5,000.00
	Unload/unpack Generator & asso	1	LS	\$0.00	\$0.00	\$1,200.00	\$1,200.00	\$1,200.00
	Modify existing distribution Panel	1	LS	\$0.00	\$0.00	\$4,000.00	\$4,000.00	\$4,000.00
	Testing / Comm	1	LS	\$0.00	\$0.00	\$6,500.00	\$6,500.00	\$6,500.00
	400 Amro NEMA 1 Cam Lock Cab	1	EA	\$3,600.00	\$3,600.00	\$1,280.00	\$1,280.00	\$4,880.00
	Subtotal							\$214,740.00
	TRANSFER SWITCHES							
	400 Amps MTS	1	EA	\$12,800.00	\$12,800.00	\$2,600.00	\$2,600.00	\$15,400.00
	401 Amps ATS (By pass Isolation)	1	EA	\$24,890.00	\$24,890.00	\$8,900.00	\$8,900.00	\$33,790.00
	Subtotal							\$49,190.00
310000	EARTHWORK							
	Localization Excavation & Compaction, minute quantity min Charge	1	L5	\$0.00	\$0.00	\$3,000.00	\$3,000.00	\$3,000.00
	Subtotal							\$3,000.00
	SUBTOTAL CONTRACT -1 ELECTRICAL WORK 5TH PRECINCT (SITE A) ONL							\$1,255,688.00

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## CONTRACTOR'S BID BREAKDOWN FORM

**CONTRACT 1 - ELECTRICAL WORK**

**Project:** Replacement of Generators at 2 NYPD Precincts  
**Location:** Site A: 25th Precinct : 120 E 119th Street, New York, NY 10035  
**Bidder:** Commerce Electrical Contracting Inc.

**DDC ID: P079GENER**  
**Sponcer Agency: NYPD**

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
	Contract 1 - Electrical Work							
	SITE A: 25th Precinct							
010000	General Requirements							
	Rigging Requirements							
	Rigging Consultant Master Mechanic & Rental Equip for 1 week	1	LS	\$20,328.00	\$20,328.00	\$79,230.00	\$79,230.00	\$99,558.00
	Mobilization	1	LS	\$7,139.00	\$7,139.00	\$15,342.00	\$15,342.00	\$22,481.00
		Subtotal						\$122,039.00
020000	EXISTING CONDITIONS							
024100	SELECTIVE SITE DEMOLITION							
	Remove Doors	1	EA	\$0.00	\$0.00	\$545.00	\$545.00	\$545.00
	Corning/ Demo for MEP needs	1	LOC	\$0.00	\$0.00	\$508.00	\$508.00	\$508.00
	Protection of existing building structure/equip to remain	1	LS	\$1,500.00	\$1,500.00	\$6,900.00	\$6,900.00	\$8,400.00
	Removal of Disconnected MEP Items	1	LS	\$0.00	\$0.00	\$4,500.00	\$4,500.00	\$4,500.00
		Subtotal						
024119	SELECTIVE STRUCTURAL DEMOLITION							
	Demo & Removal CMU/ Wall partitions	780	SF	\$0.00	\$0.00	\$27.00	\$21,060.00	\$21,060.00
	Sawcut 1st Floor Slab & Roof for Vents	0	LF	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	Demo Floor Slabs	406	SF	\$0.00	\$0.00	\$41.00	\$16,646.00	\$16,646.00
	Demo & Remove Existing Ceiling structure to under slab of floor	80	SF	\$0.00	\$0.00	\$36.00	\$2,880.00	\$2,880.00
		Subtotal						
028213	ASBESTOS ABATEMENT							
	Abestos Abatement	1	LS	\$7,805.00	\$7,805.00	\$32,428.00	\$39,237.00	\$47,042.00
		Subtotal						\$47,042.00
030000	CONCRETE							
31000	CONCRETE FORMWORK							
	Formwork	1	LS	\$2,130.00	\$2,130.00	\$4,211.00	\$4,211.00	\$6,341.00
		Subtotal						\$6,341.00



New York City Department of  
DESIGN + CONSTRUCTION

CONTRACTOR'S BID BREAKDOWN FORM

CONTRACT 1 - ELECTRICAL WORK

Project: Replacement of Generators at 2 NYPD Precincts  
Location: Site A: 25th Precinct : 120 E 119th Street, New York, NY 10035  
Bidder: Commerce Electrical Contracting Inc.

DDC ID: P079GENER  
Sponcer Agency: NYPD

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
32100	CONCRETE REINFORCING							
	Rebar	1	LS	\$20,437.00	\$20,437.00	\$15,190.00	\$15,190.00	\$35,627.00
								\$35,627.00
33000	CAST-IN -PLACE CONCRETE							
	Concrete Housekeeping Pad (4" Thick)	90	SF	\$82.00	\$7,380.00	\$136.00	\$12,240.00	\$19,620.00
	Concrete Patchwork at Penetrations & New Walls	1	LS	\$4,453.00	\$4,453.00	\$5,324.00	\$5,324.00	\$9,777.00
	Concrete Slab	360	SF	\$55.00	\$19,800.00	\$100.00	\$36,000.00	\$55,800.00
	Slab Removal, Excavate, pour, slab repairs at For 6" CMU wall Haunch	327	LF	\$70.00	\$22,890.00	\$136.00	\$44,472.00	\$67,362.00
	Conc Spill curb at Door Thresholds	1	LOC	\$823.00	\$823.00	\$1,549.00	\$1,549.00	\$2,372.00
								\$154,931.00
040000	MASONRY							
42000	Unit Masonry (included w/ 042200)							
42200	CONCRETE UNIT MASONRY							
	6" 2 HR Rated Reinforced CMU Block Wall	585	SF	\$28.00	\$16,380.00	\$45.00	\$26,325.00	\$42,705.00
								\$42,705.00
050000	METALS							
	Metal Fastening							
	Shim Plates, welds, nuts, bolts, accessories, etc	1	LS	\$6,200.00	\$6,200.00	\$9,940.00	\$9,940.00	\$16,140.00
								\$16,140.00
051200	STRUCTURAL STEEL							
	Structural Steel	1640	LB	\$10.00	\$16,400.00	\$14.00	\$22,960.00	\$39,360.00
	Protection, Fire Watch, etc	1	LS	\$0.00	\$0.00	\$54,666.00	\$54,666.00	\$54,666.00
								\$39,360.00
054000	COLD-FORMED METAL FRAMING							
054503	ANCHOR BOLTS, EXPANSION ANCHORS & CONCRETE INSERTS							
	Anchors	1	LS	\$5,600.00	\$5,600.00	\$7,600.00	\$7,600.00	\$13,200.00



**New York City Department of  
DESIGN + CONSTRUCTION**

CONTRACTOR'S BID BREAKDOWN FORM

**CONTRACT 1 - ELECTRICAL WORK**

**Project:** Replacement of Generators at 2 NYPD Precincts  
**Location:** Site A: 25th Precinct : 120 E 119th Street, New York, NY 10035  
**Bidder:** Commerce Electrical Contracting Inc.

**DDC ID:** P079GENER  
**Sponcer Agency:** NYPD

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
080000	<b>OPENINGS</b>							
81102	STEEL DOORS & FRAMES							
	New Single door, frames & Hardware (2 HR rated)	1	EA	\$6,650.00	\$6,650.00	\$3,280.00	\$3,280.00	\$9,930.00
	<b>Subtotal</b>							<b>\$9,930.00</b>
087100	<b>FINISH HARDWARE (Included w /081102)</b>							
090000	<b>FINISHES</b>							
92116	Gypsum Board Systems							
	Minor Repairs at MEP work & General Protection	1	LS	\$4,980.00	\$4,980.00	\$3,960.00	\$3,960.00	\$8,940.00
	<b>Subtotal</b>							<b>\$8,940.00</b>
099101	<b>CONSTRUCTION PAINTING</b>							
	Paint new doors, lintels misc painting, incl epoxy coat on C - Wall	1	LS	\$1,512.00	\$1,512.00	\$5,460.00	\$5,460.00	\$6,972.00
	Intumescent Painting on exposed steel members	1	LS	\$3,845.00	\$3,845.00	\$3,790.00	\$3,790.00	\$7,635.00
	<b>Subtotal</b>							<b>\$6,972.00</b>
230000	<b>HEATING, VENTILATION &amp; AIR-CONDITIONING (HVAC)</b>							
250513	Common Motor Reqd.							
	<b>Demolition - Remedial Work</b>							
	Disconnect & Remove existing generator exhaust & intake duct	1	LS	\$0.00	\$0.00	\$19,400.00	\$19,400.00	\$19,400.00
	Disconnect & Remove existing generator exhaust pipe & muffler	1	LS	\$0.00	\$0.00	\$62,890.00	\$62,890.00	\$62,890.00
	Disconnect & Remove existing Day Tank (10 gal) w asso piping	1	LS	\$0.00	\$0.00	\$1,055.00	\$1,055.00	\$1,055.00
	Disconnect & Remove existing 1 1/4" vent thru brick	1	LS	\$0.00	\$0.00	\$8,990.00	\$8,990.00	\$8,990.00
	Disconnect & Remove existing Fan	1	EA	\$0.00	\$0.00	\$1,005.00	\$1,005.00	\$1,005.00
	Remove Existing Duct w/Asso dampers	1	LS	\$0.00	\$0.00	\$6,890.00	\$6,890.00	\$6,890.00
	Disconnect & cap existing duct	1	EA	\$345.00	\$345.00	\$3,115.00	\$3,115.00	\$3,460.00
	Misc Demolition reqd	1	LS	\$0.00	\$0.00	\$6,890.00	\$6,890.00	\$6,890.00
	Chopping, patching, fire sealing	1	LS	\$0.00	\$0.00	\$9,786.00	\$9,786.00	\$9,786.00
	Removable steel cover for existing fuel tank	1	LS	\$0.00	\$0.00	\$9,863.00	\$9,863.00	\$9,863.00
	Equipment handling and material distribution	1	LS	\$0.00	\$0.00	\$9,866.00	\$9,866.00	\$9,866.00
	Misc (sub-contractor) job expenses	1	LS	\$0.00	\$0.00	\$9,467.00	\$9,467.00	\$9,467.00



**New York City Department of  
DESIGN + CONSTRUCTION**

# CONTRACTOR'S BID BREAKDOWN FORM

**CONTRACT 1 - ELECTRICAL WORK**

### **Project: Replacement of Generators at 2 NYPD Precincts**

**Location:** Site A: 25th Precinct : 120 E 119th Street, New York, NY 10035

**Bidder: Commerce Electrical Contracting Inc.**

DDC ID: P079GENER

**Sponcer Agency: NYPD**

DDC		New York City Department of DESIGN + CONSTRUCTION		CONTRACTOR'S BID BREAKDOWN FORM		CONTRACT 1 - ELECTRICAL WORK		Subtotal		\$120,366.00	
Project: Replacement of Generators at 2 NYPD Precincts Location: Site A: 25th Precinct : 120 E 119th Street, New York, NY 10035 Bidder: Commerce Electrical Contracting Inc.											
DDC ID: P079GENER Sponcer Agency: NYPD											
CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor			
230529	HANGERS & SUPPORTS FOR HVAC	1	LS	\$9,840.00	\$9,840.00	\$9,500.00	\$9,500.00	\$19,340.00			
	Misc equipment, duct & pipe supports							\$19,340.00			
	Subtotal							\$19,340.00			
230548	VIBRATION CONTROLS FOR HVAC PIPING & EQUIPMENT	1	LS	\$12,890.00	\$12,890.00	\$6,480.00	\$6,480.00	\$19,370.00			
	Vibration isolators / seismic restraints							\$19,370.00			
	Subtotal							\$19,370.00			
230553	IDENTIFICATION FOR HVAC PIPING & EQUIPMENT	1	LS	\$6,460.00	\$6,460.00	\$2,840.00	\$2,840.00	\$9,300.00			
	Valve Tags, Charts, Identification, painting							\$9,300.00			
	Subtotal							\$9,300.00			
230593	TESTING, ADJUSTING & BALANCING FOR HVAC	1	LS	\$0.00	\$0.00	\$14,900.00	\$14,900.00	\$14,900.00			
	Testing, Adjusting & Balancing							\$14,900.00			
	Subtotal							\$14,900.00			
230711	DUCT & PIPING INSULATION	160	LF	\$19.00	\$3,040.00	\$24.00	\$3,840.00	\$6,880.00			
	Insulation engine exhaust pipe							\$6,880.00			
	2 hr rating duct insulation	365	LF	\$23.00	\$8,395.00	\$19.00	\$6,935.00	\$15,330.00			
	Duct insulation	365	LF	\$20.00	\$7,300.00	\$16.00	\$5,840.00	\$13,140.00			
	1 1/2" Insulation discharge duct & 1" sound lining w /liner	120	SF	\$34.00	\$4,080.00	\$31.00	\$3,720.00	\$7,800.00			
	Sound attenuators 48" x 48" x 36"	1	EA	\$5,900.00	\$5,900.00	\$12,444.00	\$12,444.00	\$18,344.00			
	Subtotal							\$61,494.00			
230993	AUTOMATIC TEMPERATUR CONTROL SYSTEM	1	pkg	\$3,860.00	\$3,860.00	\$2,460.00	\$2,460.00	\$6,320.00			
	FP-1/FP-2 Duplex fuel pump w/control panel							\$6,320.00			
	Fuel return Pump	1	EA	\$1,280.00	\$1,280.00	\$1,640.00	\$1,640.00	\$2,920.00			
	P-1/P-2 pump (generator cooling system)	1	EA	\$6,450.00	\$6,450.00	\$3,480.00	\$3,480.00	\$9,930.00			
	Exhaust Fan	1	EA	\$1,200.00	\$1,200.00	\$846.00	\$846.00	\$2,046.00			
	Electric unit Heater	1	EA	\$3,600.00	\$3,600.00	\$2,360.00	\$2,360.00	\$5,960.00			
	FSD	2	EA	\$1,870.00	\$3,740.00	\$1,680.00	\$3,360.00	\$7,100.00			
	Motorized Damper	2	EA	\$2,680.00	\$5,360.00	\$2,260.00	\$4,520.00	\$9,880.00			
	Fuel Level & Leak controller	1	EA	\$1,640.00	\$1,640.00	\$1,240.00	\$1,240.00	\$2,880.00			





**Project:** Replacement of Generators at 2 NYPD Precincts  
**Location:** Site A: 25th Precinct : 120 E 119th Street, New York, NY 10035  
**Bidder:** Commerce Electrical Contracting Inc.

CONTRACTOR'S BID BREAKDOWN FORM

**CONTRACT 1 - ELECTRICAL WORK**

DDC ID: P079GENER

**Sponcer Agency: NYPD**

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor	
	Audio Visual fill Alarm	1	EA	\$2,615.00	\$2,615.00	\$1,640.00	\$1,640.00	\$4,255.00	
	Audio Visual CO Alarm	1	EA	\$1,690.00	\$1,690.00	\$1,140.00	\$1,140.00	\$2,830.00	
	Fill & Leak Alarm controller	1	EA	\$2,655.00	\$2,655.00	\$1,050.00	\$1,050.00	\$3,705.00	
	Fume Alarm	1	EA	\$2,977.00	\$2,977.00	\$1,843.00	\$1,843.00	\$4,820.00	
	CO Alarm	1	EA	\$1,126.00	\$1,126.00	\$1,280.00	\$1,280.00	\$2,406.00	
	CO Detection Panel	1	EA	\$3,280.00	\$3,280.00	\$3,875.00	\$3,875.00	\$7,155.00	
	CO & Fume detectors	1	LS	\$1,214.00	\$1,214.00	\$1,280.00	\$1,280.00	\$2,494.00	
	Leak detectors	1	LS	\$1,044.00	\$1,044.00	\$870.00	\$870.00	\$1,914.00	
	Low Voltage Wiring	1	LS	\$3,650.00	\$3,650.00	\$4,200.00	\$4,200.00	\$7,850.00	
	Misc controls reqd.	1	LS	\$1,200.00	\$1,200.00	\$4,500.00	\$4,500.00	\$5,700.00	
		Subtotal							\$53,845.00
	233113	METAL DUCTS							
		Galvanized steel duct	3680	LBS	\$21.50	\$79,120.00	\$22.00	\$80,960.00	\$160,080.00
	Subtotal							\$160,080.00	
233300	AIR DUCT ACCESSORIES								
	Air Device								
	Louvers 36" x 48"	1	EA	\$2,675.00	\$2,675.00	\$1,270.00	\$1,270.00	\$3,945.00	
	Duct mounted smoke detector	2	EA	\$670.00	\$1,340.00	\$1,256.00	\$2,512.00	\$3,852.00	
	Gooseneck 9" dia SS	2	EA	\$670.00	\$1,340.00	\$590.00	\$1,180.00	\$2,520.00	
	Drip Pan	1	EA	\$1,240.00	\$1,240.00	\$1,670.00	\$1,670.00	\$2,910.00	
	Access Door	8	EA	\$670.00	\$5,360.00	\$554.00	\$4,432.00	\$9,792.00	
	Flexible connection	2	LS	\$1,266.00	\$2,532.00	\$1,650.00	\$3,300.00	\$5,832.00	
	Tie-in Duct	2	EA	\$680.00	\$1,360.00	\$450.00	\$900.00	\$2,260.00	
	FSD fire smoke Damper	4	SF	\$1,289.00	\$5,156.00	\$639.00	\$2,556.00	\$7,712.00	
	MD Motorized Damper	2	SF	\$1,290.00	\$2,580.00	\$640.00	\$1,280.00	\$3,860.00	
	Backdraft Damper	2	SF	\$940.00	\$1,880.00	\$610.00	\$1,220.00	\$3,100.00	
	VD Volume Damper	4	SF	\$680.00	\$2,720.00	\$600.00	\$2,400.00	\$5,120.00	
	Subtotal							\$50,903.00	



**New York City Department of  
DESIGN + CONSTRUCTION**

CONTRACTOR'S BID BREAKDOWN FORM

**CONTRACT 1 - ELECTRICAL WORK**

Project: Replacement of Generators at 2 NYPD Precincts  
Location: Site A: 25th Precinct : 120 E 119th Street, New York, NY 10035  
Bidder: Commerce Electrical Contracting Inc.

DDC ID: P079GENER

Sponsor Agency: NYPD

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
233900	<b>FANS &amp; ACCESSORIES</b>							
	Exhaust Fan - 300 CFM	1	EA	\$1,890.00	\$1,890.00	\$1,270.00	\$1,270.00	\$3,160.00
	Exhaust Fan - 5850 CFM	1	EA	\$5,400.00	\$5,400.00	\$3,200.00	\$3,200.00	\$8,600.00
	<b>Subtotal</b>							<b>\$11,760.00</b>
235300	<b>FUEL HANDLING SYSTEMS</b>							
	<b>Equipment</b>							
	FP-1/FP-2 Duplex fuel pump w/control panel	1	pkg	\$5,950.00	\$5,950.00	\$3,920.00	\$3,920.00	\$9,870.00
	Fuel return Pump	1	EA	\$2,900.00	\$2,900.00	\$1,840.00	\$1,840.00	\$4,740.00
	P-1/P-2 pump (generator cooling system)	1	EA	\$6,450.00	\$6,450.00	\$3,480.00	\$3,480.00	\$9,930.00
	Duplex basket strainer	1	EA	\$1,505.00	\$1,505.00	\$860.00	\$860.00	\$2,365.00
	Double Wall Cont Fuel Tank -275 Gal	1	EA	\$12,800.00	\$12,800.00	\$4,500.00	\$4,500.00	\$17,300.00
	Diesel Oil Fill	200	Gal	\$3.50	\$700.00	\$2.00	\$400.00	\$1,100.00
	Fuel Cooler	1	EA	\$2,900.00	\$2,900.00	\$1,660.00	\$1,660.00	\$4,560.00
	Filtration System	1	LS	\$2,840.00	\$2,840.00	\$640.00	\$640.00	\$3,480.00
	Hookup Equipment	1	LS	\$0.00	\$0.00	\$5,800.00	\$5,800.00	\$5,800.00
	6" Dia exhaust pipe	60	LF	\$24.00	\$1,440.00	\$92.00	\$5,520.00	\$6,960.00
	4" Dia Exhaust Pipe	60	LF	\$18.00	\$1,080.00	\$66.00	\$3,960.00	\$5,040.00
	1 1/4" Dia vent pipe	100	LF	\$8.00	\$800.00	\$51.00	\$5,100.00	\$5,900.00
	Insulate Muffler	1	EA	\$2,940.00	\$2,940.00	\$3,260.00	\$3,260.00	\$6,200.00
	Tie-in exhaust & vent pipe	1	EA	\$460.00	\$460.00	\$1,240.00	\$1,240.00	\$1,700.00
	Fuel Oil System piping							
	3/4" Dia Pipe	290	LF	\$20.00	\$5,800.00	\$84.00	\$24,360.00	\$30,160.00
	Containment (Black Steel pipe							
	1 1/2" Dia pipe	190	LF	\$22.00	\$4,180.00	\$65.00	\$12,350.00	\$16,530.00
	Tie -in Fuel Oil Pipe	1	EA	\$0.00	\$0.00	\$1,680.00	\$1,680.00	\$1,680.00
	Flame arrestor	1	EA	\$840.00	\$840.00	\$940.00	\$940.00	\$1,780.00
	Pipe flexible connection	1	LS	\$440.00	\$440.00	\$890.00	\$890.00	\$1,330.00
	Spacer for double wall piping	1	LS	\$160.00	\$160.00	\$450.00	\$450.00	\$610.00
	Penetrations & sleeves	1	LS	\$245.00	\$245.00	\$280.00	\$280.00	\$525.00



**New York City Department of  
DESIGN + CONSTRUCTION**

CONTRACTOR'S BID BREAKDOWN FORM

**CONTRACT 1 - ELECTRICAL WORK**

**Project:** Replacement of Generators at 2 NYPD Precincts  
**Location:** Site A: 25th Precinct : 120 E 119th Street, New York, NY 10035  
**Bidder:** Commerce Electrical Contracting Inc.

**DDC ID:** P079GENER  
**Sponcer Agency:** NYPD

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
	Clean Piping	1	LS	\$0.00	\$0.00	\$390.00	\$390.00	\$390.00
	Welding Req'd	1	LS	\$540.00	\$540.00	\$460.00	\$460.00	\$1,000.00
	Misc. Valves & Sp	1	LS	\$3,900.00	\$3,900.00	\$1,800.00	\$1,800.00	\$5,700.00
	<b>Subtotal</b>							<b>\$120,110.00</b>
238239	<b>UNIT HEATERS</b>							
	Electric unit Heater - 5KW	1	EA	\$4,900.00	\$4,900.00	\$2,400.00	\$2,400.00	\$7,300.00
	<b>Subtotal</b>							<b>\$7,300.00</b>
238240	<b>FUEL EXHAUST CONDENSATE ACID NEUTRALIZER</b>							
	Acid Neutralizer Tank w/ asso 1/2" SS pipe	1	LS	\$2,400.00	\$2,400.00	\$870.00	\$870.00	\$3,270.00
	<b>Subtotal</b>							<b>\$3,270.00</b>
260000	<b>ELECTRICAL</b>							
260500	<b>Common Work Results for Electrical</b>							
	Demolition (disconnect & make sure only):							
	30KW generator w Asso devices	1	LS	\$0.00	\$0.00	\$14,200.00	\$14,200.00	\$14,200.00
	1600 Amp Distribution Board	1	EA	\$0.00	\$0.00	\$6,930.00	\$6,930.00	\$6,930.00
	400 Amp Panel	1	EA	\$0.00	\$0.00	\$2,860.00	\$2,860.00	\$2,860.00
	400 Amp ATS	1	EA	\$0.00	\$0.00	\$1,940.00	\$1,940.00	\$1,940.00
	Feeders	1	LS	\$0.00	\$0.00	\$4,996.00	\$4,996.00	\$4,996.00
	<b>Panel Boards:</b>							
	1600 Amp Distribution Board	1	EA	\$12,860.00	\$12,860.00	\$9,950.00	\$9,950.00	\$22,810.00
	400 Amp Panel	1	EA	\$4,960.00	\$4,960.00	\$4,960.00	\$4,960.00	\$9,920.00
	225 Amp Panel PP-Em	1	EA	\$3,556.00	\$3,556.00	\$3,780.00	\$3,780.00	\$7,336.00
	Lighting Fixture							
	Lighting Fixture Type A	2	EA	\$250.00	\$500.00	\$239.00	\$478.00	\$978.00
	Exit Sign	1	EA	\$360.00	\$360.00	\$240.00	\$240.00	\$600.00
	Remove/ reinstall existing Lighting Fixtures	1	LS	\$0.00	\$0.00	\$680.00	\$680.00	\$680.00
	<b>Mechanical req'd</b>							
	Motorized Damper	2	EA	\$650.00	\$1,300.00	\$452.00	\$904.00	\$2,204.00
	Fuel Leak Alarm Panel (FBO)	1	EA	\$2,480.00	\$2,480.00	\$1,290.00	\$1,290.00	\$3,770.00



New York City Department of  
DESIGN + CONSTRUCTION

Project: Replacement of Generators at 2 NYPD Precincts  
Location: Site A: 25th Precinct : 120 E 119th Street, New York, NY 10035  
Bidder: Commerce Electrical Contracting Inc.

CONTRACTOR'S BID BREAKDOWN FORM

CONTRACT 1 - ELECTRICAL WORK

DDC ID: P079GENER

Sponser Agency: NYPD

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
	CO detector Alarm Panel (FBO)	1	EA	\$2,200.00	\$2,200.00	\$1,300.00	\$1,300.00	\$3,500.00
	Duplex Fuel Pump	1	set	\$1,290.00	\$1,290.00	\$1,040.00	\$1,040.00	\$2,330.00
	Fuel Return Pump	1	EA	\$190.00	\$190.00	\$260.00	\$260.00	\$450.00
	Exhaust Fan	1	EA	\$260.00	\$260.00	\$212.00	\$212.00	\$472.00
	Electric Unit Heater	2	EA	\$340.00	\$680.00	\$440.00	\$880.00	\$1,560.00
	Fire Smoke Damper	2	EA	\$360.00	\$720.00	\$450.00	\$900.00	\$1,620.00
	Heat Detector	1	EA	\$320.00	\$320.00	\$112.00	\$112.00	\$432.00
	Smoke Detector Duct Mounted	2	EA	\$360.00	\$720.00	\$115.00	\$230.00	\$950.00
	Extend existing active wiring	1	LS	\$650.00	\$650.00	\$820.00	\$820.00	\$1,470.00
	Re-route existing feeder	1	LS	\$3,400.00	\$3,400.00	\$6,500.00	\$6,500.00	\$9,900.00
	Refeed existing panels	1	EA	\$2,460.00	\$2,460.00	\$3,480.00	\$3,480.00	\$5,940.00
	Test existing curcuit breaker & feeders	1	LS	\$0.00	\$0.00	\$860.00	\$860.00	\$860.00
	Shut Down /Switchover	1	LS	\$0.00	\$0.00	\$6,200.00	\$6,200.00	\$6,200.00
	Vibration Isolators / seismic restraints	1	LS	\$2,840.00	\$2,840.00	\$3,260.00	\$3,260.00	\$6,100.00
	Protect existing EQUIPMENT & DEVICES	1	LS	\$650.00	\$650.00	\$1,200.00	\$1,200.00	\$1,850.00
	Misc electrical work	1	LS	\$3,000.00	\$3,000.00	\$5,000.00	\$5,000.00	\$8,000.00
	Subtotal							\$130,858.00
260519	LOW VOLTAGE ELECTRICAL POWER CONDUCTORS & CABLES							
	500 MCM	6500	Lf	\$4.20	\$27,300.00	\$6.00	\$39,000.00	\$66,300.00
	#2/o wire(Grounding)	3000	Lf	\$2.60	\$7,800.00	\$2.70	\$8,100.00	\$15,900.00
	#1/o wire	850	Lf	\$2.40	\$2,040.00	\$2.60	\$2,210.00	\$4,250.00
	#1/o wire(Grounding)	650	Lf	\$2.40	\$1,560.00	\$2.60	\$1,690.00	\$3,250.00
	#2 Wire (Grounding)	400	Lf	\$1.80	\$720.00	\$2.50	\$1,000.00	\$1,720.00
	#2 Wire	600	Lf	\$1.80	\$1,080.00	\$2.50	\$1,500.00	\$2,580.00
	#4 Wire (Mechanical)	400	Lf	\$1.60	\$640.00	\$2.10	\$840.00	\$1,480.00
	#8 Wire	300	Lf	\$1.10	\$330.00	\$1.90	\$570.00	\$900.00
	#10 Wire	1000	Lf	\$0.95	\$950.00	\$1.80	\$1,800.00	\$2,750.00
	#10 Wire (mechanical)	1200	Lf	\$0.95	\$1,140.00	\$1.80	\$2,160.00	\$3,300.00
	#12 Wire (mechanical)	2400	Lf	\$0.80	\$1,920.00	\$1.80	\$4,320.00	\$6,240.00



**New York City Department of  
DESIGN + CONSTRUCTION**

**Project:** Replacement of Generators at 2 NYPD Precincts  
**Location:** Site A: 25th Precinct : 120 E 119th Street, New York, NY 10035  
**Bidder:** Commerce Electrical Contracting Inc.

**CONTRACTOR'S BID BREAKDOWN FORM**

**CONTRACT 1 - ELECTRICAL WORK**

**DDC ID:** P079GENER  
**Sponser Agency:** NYPD

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
	#12 Wire (Lighting)	1600	Lf	\$1.00	\$1,600.00	\$1.80	\$2,880.00	\$4,480.00
	#12 Wire (wiring devices & alarm)	2500	Lf	\$0.80	\$2,000.00	\$1.80	\$4,500.00	\$6,500.00
	#12 Wire (Fire Alarm)	3500	Lf	\$0.80	\$2,800.00	\$1.80	\$6,300.00	\$9,100.00
	Control Wiring (generator)	1	LS	\$4,500.00	\$4,500.00	\$7,800.00	\$7,800.00	\$12,300.00
	<b>Subtotal</b>							<b>\$141,050.00</b>
260526	<b>GROUNDING &amp; BONDING FOR ELECTRICAL SYSTEMS</b>							
	Ground Rod	2	EA	\$840.00	\$1,680.00	\$650.00	\$1,300.00	\$2,980.00
	<b>Subtotal</b>							<b>\$2,980.00</b>
260529	<b>HANGERS &amp; SUPPORTS FOR ELECTRICAL SYSTEMS</b>							
	Hangers & Supports	1	LS	\$3,460.00	\$3,460.00	\$1,440.00	\$1,440.00	\$4,900.00
	Panel mounting assemblies	1	EA	\$860.00	\$860.00	\$1,277.00	\$1,277.00	\$2,137.00
	Mounting assemblies (TS)	1	EA	\$1,690.00	\$1,690.00	\$1,280.00	\$1,280.00	\$2,970.00
	<b>Subtotal</b>							<b>\$10,007.00</b>
260533	<b>RACEWAY &amp; BOXES FOR ELECTRICAL SYSTEM</b>							
	4" RGS	900	Lf	\$8.90	\$8,010.00	\$19.60	\$17,640.00	\$25,650.00
	2" RGS	540	Lf	\$4.90	\$2,646.00	\$17.80	\$9,612.00	\$12,258.00
	1" RGS (Grounding)	70	Lf	\$4.40	\$308.00	\$16.90	\$1,183.00	\$1,491.00
	1" RGS (Mechanical)	200	Lf	\$3.90	\$780.00	\$15.00	\$3,000.00	\$3,780.00
	3/4" RGS	660	Lf	\$3.60	\$2,376.00	\$15.00	\$9,240.00	\$11,616.00
	3/4" RGS(Mechanical)	580	Lf	\$3.60	\$2,088.00	\$14.00	\$8,120.00	\$10,208.00
	3/4" RGS (Fire Alarm)	260	Lf	\$3.60	\$936.00	\$14.00	\$3,640.00	\$4,576.00
	3/4" RGS (Wiring Devices & Alarms)	240	Lf	\$3.60	\$864.00	\$14.00	\$3,360.00	\$4,224.00
	3/4" RGS (Lighting)	200	Lf	\$3.60	\$720.00	\$14.00	\$2,800.00	\$3,520.00
	<b>Subtotal</b>							<b>\$77,323.00</b>
260553	<b>SLEEVES SEAL FOR ELECTRICAL SYSTEM RACEWAYS</b>							
	Sleeves / Firestopping	1	LS	\$1,660.00	\$1,660.00	\$2,870.00	\$2,870.00	\$4,530.00
	<b>Subtotal</b>							<b>\$4,530.00</b>
262726	<b>IDENTIFICATION OF ELECTRICAL SYSTEMS</b>							



CONTRACTOR'S BID BREAKDOWN FORM

## CONTRACT 1 - ELECTRICAL WORK

**Project: Replacement of Generators at 2 NYPD Precincts.**

**Location:** Site A: 25th Precinct: 120 E 119th Street, New York, NY 10035

**Bidder: Commerce Electrical Contracting Inc.**

DDC ID: P079GENER

**Sponcer Agency: NYPD**

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total cost of materials	Unit Cost of Labor	Total cost of Labor	Total cost of Material & Labor
262726	WIRING DEVICES							
	Single pole Light Switch	1	EA	\$112.00	\$112.00	\$54.00	\$54.00	\$166.00
262813	FUSES							
	30 Amps Nema 1 Disconnect Switch	2	EA	\$360.00	\$720.00	\$240.00	\$480.00	\$1,200.00
262816	ENCLOSED SWITCHES & CIRCUIT BREAKERS							
263213	ENGINE GENERATORS							
	250 KW Generator	1	EA	\$224,800.00	\$224,800.00	\$72,960.00	\$72,960.00	\$297,760.00
	Factory Testing	1	LS	\$0.00	\$0.00	\$12,800.00	\$12,800.00	\$12,800.00
	Fuel for test & Final Fill	1	LS	\$1,860.00	\$1,860.00	\$1,240.00	\$1,240.00	\$3,100.00
	Housekeeping concrete Pad	2	EA	\$1,680.00	\$3,360.00	\$870.00	\$1,740.00	\$5,100.00
	Generator Remote Annunciator	1	EA	\$1,260.00	\$1,260.00	\$889.00	\$889.00	\$2,149.00
	Unload/unpack Generator & asso	1	LS	\$0.00	\$0.00	\$3,200.00	\$3,200.00	\$3,200.00
	Testing / Comm	1	LS	\$0.00	\$0.00	\$12,800.00	\$12,800.00	\$12,800.00
	Modify bussing/ new Lugs	1	LS	\$5,400.00	\$5,400.00	\$8,777.00	\$8,777.00	\$14,177.00
	1600 Amo NEMA 1 Cam Lock Cab	1	EA	\$12,700.00	\$12,700.00	\$7,870.00	\$7,870.00	\$20,570.00
263600	Subtotal							\$371,656.00
	TRANSFER SWITCHES							
	1600 Amps MTS	1	EA	\$24,960.00	\$24,960.00	\$6,454.00	\$6,454.00	\$31,414.00
	1600 Amps ATS (By pass Isolation)	1	EA	\$46,900.00	\$46,900.00	\$11,560.00	\$11,560.00	\$58,460.00
310000	Subtotal							\$89,874.00
	EARTHWORK							
	Localization Excavation & Compaction, minute quantity min Charge	1	LS	\$0.00	\$0.00	\$12,400.00	\$12,400.00	\$12,400.00
	Subtotal							\$12,400.00
	SUBTOTAL CONTRACT -1. ELECTRICAL WORK 5TH PRECINCT (SITE A) ONLY							\$2,027,309.00

**SUBTOTAL CONTRACT -1 ELECTRICAL WORK 5TH PREDNCT (SITE A) ON**

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## ATTACHMENT 1 – BID INFORMATION

**PROJECT ID: PO79GENER**

### DESCRIPTION AND LOCATION OF WORK:

**Replacement of Generators at 2 NYPD Precincts**

**NYPD 5th Precinct and NYPD 25th Precinct**

**Manhattan, NY 10013 and 10035**

**PIN: 8502017PD0006C/E:PIN: 85017B0108**

### DOCUMENTS AVAILABLE AT:

Department of Design and Construction, Contract Section  
30-30 Thomson Avenue - First Floor, Long Island City, NY 11101

### SUBMISSION OF BIDS BEFORE BID OPENING:

#### TIME TO SUBMIT:

**On or Before: MARCH 8, 2018**

**BIDS MUST BE CLOCKED IN PRIOR TO BID OPENING**

#### PLACE TO SUBMIT:

Department of Design and Construction, Contract Section  
30-30 Thomson Avenue - First Floor, Long Island City, NY 11101

### PRE BID QUESTIONS (PBQs):

Please be advised that PBQs must be submitted to the Agency Contact Person at least five (5) business days (by 5:00 P.M. EST) prior to the bid opening date.  
Email PBQ(s) - CSB\_projectinquiries@ddc.nyc.gov

### BID OPENING:

PLACE OF BID OPENING:	Department of Design and Construction Contract Section 30-30 Thomson Avenue - First Floor Long Island City, NY 11101
DATE AND HOUR:	<b>THURSDAY, MARCH 8, 2018 @ 2:00PM</b>

**LATE BIDS WILL NOT BE ACCEPTED**

### PRE-BID CONFERENCE:

PLACE	<b>SITE A: NYPD 5th Precinct, 19 Elizabeth Street, New York, NY 10013 @ 10:00am</b> <b>SITE B: NYPD 25th Precinct, 120 East 119th Street New York, NY 10035 @ 1:00pm</b>
DATE AND HOUR	<b>TUESDAY, FEBRUARY 20, 2018</b>
MANDATORY OR OPTIONAL	<b>OPTIONAL</b>

### BID SECURITY:

Bid Security is required in the amount set forth below; provided, however, bid security is not required if the TOTAL BID PRICE set forth on the Bid Form is less than \$1,000,000.00.

- (1) Bond in an amount not less than 10% of the TOTAL BID PRICE set forth on the Bid Form, OR
- (2) Certified Check in an amount not less than 2% of the TOTAL BID PRICE set forth on the Bid Form.

### PERFORMANCE AND PAYMENT SECURITY:

Required for Contracts in the amount of \$1,000,000.00 or more. Performance and Payment Security shall each be in amount equal to 100% of the Contract Price.

### AGENCY CONTACT PERSON:

Lorraine Holley, 30-30 Thomson Avenue - First Floor, Long Island City, Queens, 11101

Telephone (718) 391-1041

Email: CSB\_projectinquiries@ddc.nyc.gov



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**BID BOOKLET  
PART B**

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## 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.**

### 1. Bidder Information:

Company Name: COMMERCE ELECTRICAL CONTRACTING CORP.

DDC Project Number: 1079 GWR

**Company Size:** \_\_\_\_\_ Ten (10) employees or less

**X** Greater than ten (10) employees

Company has previously worked for DDC	<u>  X  </u>	YES	NO
---------------------------------------	--------------	-----	----

## 2. Type(s) of Construction Work

TYPE OF WORK	LAST 3 YEARS	THIS PROJECT
General Building Construction	X	
Residential Building Construction		
Nonresidential Building Construction		
Heavy Construction, except building		
Highway and Street Construction		
Heavy Construction, except highways.		
Plumbing, Heating, HVAC		
Painting and Paper Hanging		
Electrical Work	X	
Masonry, Stonework and Plastering		
Carpentry and Floor Work		
Roofing, Siding, and Sheet Metal		
Concrete Work		
Specialty Trade Contracting		
Asbestos Abatement		
Other (specify)		

### 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 contractor may obtain its EMR by contacting its insurance broker or the NCCI. If the contractor cannot obtain its EMR, it must submit a written explanation as to why.

The Contractor 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
2016	.89	.89

If the Intrastate and/or Interstate EMR for any of the past three years is greater than 1.00, the 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 New York City Department of Buildings (NYCDOB) 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 (all work-related inpatient hospitalizations, all amputations and all losses of an eye).

The Occupational Safety and Health Act (OSHA) of 1970 requires employers with ten or more employees, on a yearly basis to complete and maintain on file the form entitled "Log of Work-related Injuries and Illnesses". This form is commonly referred to as the OSHA 300 Log (OSHA 200 Log for 2001 and earlier).

The OSHA 300 Log must be submitted for the last three years for contractors with more than ten employees.

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

The contractor must submit the Incident Rate for Lost Time Injuries (the Incident Rate) for the past three 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 300 Log. The 200,000 hours represents the equivalent of 100 employees working forty hours a week, fifty weeks per year.

Incident Rate = 0

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

YEAR	TOTAL NUMBERS OF HOURS WORKED BY EMPLOYEES	INCIDENT RATE
2017	2,214	0
2016	15,183	0
2015	22,424	0

If the 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 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 Contractor previously audited by the DDC Office of Site Safety.  
DDC Project Number(s): \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

☐ YES ☒ NO Accident on previous DDC Project(s).  
DDC Project Number(s): \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

☐ YES ☒ NO Fatality or Life-altering Injury on DDC Project(s) within the last three years.  
[Examples of a life-altering injury include loss of limb, loss of a sense (e.g., sight, hearing), or loss of neurological function].  
DDC Project Number(s): \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_

Date: \_\_\_\_\_

By: \_\_\_\_\_  
(Signature of Owner, Partner, Corporate Officer)

Title: SECRETARY \_\_\_\_\_

## 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 facsimile or in writing and will specify the types of information which must be submitted.

**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 on pages 28 through 30 of 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**

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
NEW GORHAM KINGS ISLAND	PM+E	578,000	12/2017	ANDREW PONE 313-244-9670	NMC DOL
LIGHTING REN PS 39M	PM+E	950,000	3/2016	DANIEL O'CONNOR	NMC SCA
PS 75TH FA/HA	PM+E	1,180,000	3/2018	ELW PERRIN	NMC SCA
PS 152 FA/HA	PM+E	1,100,000	3/2018	SCOTT FACHAND	NMC SCA

**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
MHC Batis Liberia ZOL	2,500,000 PUMP	2,500,000	100,000	2,400,000	2019	Andersen A. Andersen 212-410-8914	MHC Batis
MCHA ZOL	3,330,000 PUMP	3,330,000	100,000	3,230,000	2020	Johnson Architecture 347-582-8994	MCHA
MHC Batis ZOL	PUMP	2,320,000	100,000	2,220,000	2020	AMEI Construction 212-410-8914	MHC Batis

**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

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**OFFICE OF THE MAYOR  
BUREAU OF LABOR SERVICES  
CONTRACT CERTIFICATE**

To be completed if the contract is less than \$1,000,000

Contractor: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Telephone Number: \_\_\_\_\_

Name and Title of Signatory: \_\_\_\_\_  
\_\_\_\_\_

Contracting Agency or Owner: \_\_\_\_\_

Project Number: \_\_\_\_\_

Proposed Contract Amount: \_\_\_\_\_

Description and Address of Proposed Contract: \_\_\_\_\_

Names of Subcontractors in the amount of 750,000 or more on this contract (if not known at this time, so state indicating that trades will be subcontracted):  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I, (fill in name of person signing) \_\_\_\_\_,  
hereby affirm that I am authorized by the above-named contractor to certify that said contractor's proposed contract with the above-named owner or city agency is less than \$1,000,000. This affirmation is made in accordance with Executive Order No. 50 (1980) as amended and its implementing regulations.

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

**WILLFUL OR FRAUDULENT FALSIFICATION OF ANY DATA OR INFORMATION SUBMITTED HERewith MAY RESULT IN THE TERMINATION OF ANY CONTRACT BETWEEN THE CITY AND THE BIDDER OR CONTRACTOR AND BAR THE BIDDER OR CONTRACTOR FROM PARTICIPATION IN ANY CITY CONTRACT FOR A PERIOD OF UP TO THREE YEARS. FURTHER, SUCH FALSIFICATION MAY RESULT IN CRIMINAL PROSECUTION.**

**THIS PAGE INTENTIONALLY LEFT BLANK**

## VENDEX COMPLIANCE

(A) **Vendex Fees:** Pursuant to Procurement Policy Board Rule 2-08(f)(2), the contractor will be charged a fee for the administration of the VENDEX system, including the Vendor Name Check process, if a Vendor Name Check review is required to be conducted by the Department of Investigation. The contractor shall also be required to pay the applicable required fees for any of its subcontractors for which Vendor Name Check reviews are required. The fee(s) will be deducted from payments made to the contractor under the contract. For contracts with an estimated value of less than or equal to \$1,000,000, the fee will be \$175 per Vendor Name Check review. For contracts with an estimated value of greater than \$1,000,000, the fee will be \$350 per Vendor Name Check review.

(B) **Confirmation of Vendex Compliance:** The Bidder shall submit this Confirmation of Vendex Compliance to the Department of Design and Construction, Contracts Section, 30-30 Thomson Avenue – First Floor, Long Island City, NY 11101.

**Bid Information:** The Bidder shall complete the bid information set forth below.

Name of Bidder: COMMERCE ELECTRICAL CONTRATING CORP.  
Bidder's Address: 23-86 BQE WEST, ASTORIA NY 11103  
Bidder's Telephone Number: 718-233-4955  
Bidder's Fax Number: 347-368-4560  
Date of Bid Opening: 3/20/2018  
Project ID: \_\_\_\_\_

**Vendex Compliance:** To demonstrate compliance with Vendex requirements, the Bidder shall complete either Section (1) or Section (2) below, whichever applies.

- (1) **Submission of Vendex Questionnaires to MOCS:** By signing in the space provided below, the Bidder certifies that as of the date specified below, the Bidder has submitted Vendex Questionnaires to the Mayor's Office of Contract Services, Attn: VENDEX, 253 Broadway, 9<sup>th</sup> Floor, New York, New York 10007.

Date of Submission: 3/19/2018

By:   
(Signature of Partner or corporate officer)

Print Name: DASHAMIR URUCI

- (2) **Submission of Certification of No Change to DDC:** By signing in the space provided below, the Bidder certifies that it has read the instructions in a "Vendor's Guide to Vendex" and that such instructions do not require the Bidder to submit Vendex Questionnaires. The Bidder has completed **TWO ORIGINALS** of the Certification of No Change set forth on the next page of this Bid Booklet.

By:   
(Signature of Partner or corporate officer)

Print Name: DASHAMIR URUCI

**IRAN DIVESTMENT ACT COMPLIANCE RIDER**  
**FOR NEW YORK CITY CONTRACTORS**

The Iran Divestment Act of 2012, effective as of April 12, 2012, is codified at State Finance Law ("SFL") §165-a and General Municipal Law ("GML") §103-g. The Iran Divestment Act, with certain exceptions, prohibits municipalities, including the City, from entering into contracts with persons engaged in investment activities in the energy sector of Iran. Pursuant to the terms set forth in SFL §165-a and GML §103-g, a person engages in investment activities in the energy sector of Iran if:

- (a) The person provides goods or services of twenty million dollars or more in the energy sector of Iran, including a person that provides oil or liquefied natural gas tankers, or products used to construct or maintain pipelines used to transport oil or liquefied natural gas, for the energy sector of Iran; or
- (b) The person is a financial institution that extends twenty million dollars or more in credit to another person, for forty-five days or more, if that person will use the credit to provide goods or services in the energy sector in Iran and is identified on a list created pursuant to paragraph (b) of subdivision three of Section 165-a of the State Finance Law and maintained by the Commissioner of the Office of General Services.

A bid or proposal shall not be considered for award nor shall any award be made where the bidder or proposer fails to submit a signed and verified bidder's certification.

Each bidder or proposer must certify that it is not on the list of entities engaged in investment activities in Iran created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the State Finance Law. In any case where the bidder or proposer cannot certify that they are not on such list, the bidder or proposer shall so state and shall furnish with the bid or proposal a signed statement which sets forth in detail the reasons why such statement cannot be made. The City of New York may award a bid to a bidder who cannot make the certification on a case by case basis if:

- (1) The investment activities in Iran were made before the effective date of this section (i.e., April 12, 2012), the investment activities in Iran have not been expanded or renewed after the effective date of this section and the person has adopted, publicized and is implementing a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran; or
- (2) The City makes a determination that the goods or services are necessary for the City to perform its functions and that, absent such an exemption, the City would be unable to obtain the goods or services for which the contract is offered. Such determination shall be made in writing and shall be a public document.



**BIDDER'S CERTIFICATION OF COMPLIANCE WITH  
IRAN DIVESTMENT ACT**

Pursuant to General Municipal Law §103-g, which generally prohibits the City from entering into contracts with persons engaged in investment activities in the energy sector of Iran, the bidder/proposer submits the following certification:

[Please Check One]

**BIDDER'S CERTIFICATION**

☒ By submission of this bid or proposal, each bidder/proposer and each person signing on behalf of any bidder/proposer 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, that each bidder/proposer is not on the list created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the State Finance Law.

☐ I am unable to certify that my name and the name of the bidder/proposer does not appear on the list created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the State Finance Law. I have attached a signed statement setting forth in detail why I cannot so certify.

Dated: \_\_\_\_\_, New York  
\_\_\_\_\_, 20\_\_

\_\_\_\_\_  
SIGNATURE

DASHAMIR URUCI

\_\_\_\_\_  
PRINTED NAME

SECRETARY

\_\_\_\_\_  
TITLE

Sworn to before me this  
20 day of March 18

\_\_\_\_\_  
Notary Public

Dated:

ROSEMARY PETROCELLI  
Notary Public State of New York  
No. 01PE6041009  
Qualified in Kings County  
Commission Expires 5/01/20 18

**CITY OF NEW YORK**

**DIVISION OF LABOR SERVICES**

**CONSTRUCTION EMPLOYMENT REPORT**

**THIS PAGE INTENTIONALLY LEFT BLANK**

The City of New York Department of Small Business Services  
Division of Labor Services Contract Compliance Unit  
110 William Street, New York, New York 10038  
Phone: (212) 513 - 6323  
Fax: (212) 618-8879

**CONSTRUCTION EMPLOYMENT REPORT**

**GENERAL INFORMATION**

1. Your contractual relationship in this contract is: Prime contractor X Subcontractor
- 1a. Are M/WBE goals attached to this project? Yes X No
2. Please check one of the following if your firm would like information on how to certify with the City of New York as a:  

<u>      </u> Minority Owned Business Enterprise	<u>      </u> Locally Based Business Enterprise
<u>      </u> Women Owned Business Enterprise	<u>      </u> Emerging Business Enterprise
<u>      </u> Disadvantaged Business Enterprise	
- 2a. If you are certified as an **MBE, WBE, LBE, EBE** or **DBE**, what city/state agency are you certified with? LBE WITH SCA Are you DBE certified? Yes        No
3. Please indicate if you would like assistance from SBS in identifying certified M/WBEs for contracting opportunities: Yes        No X
4. Is this project subject to a project labor agreement? Yes X No
5. Are you a Union contractor? Yes X No        If yes, please list which local(s) you affiliated with LOCAL 363
6. Are you a Veteran owned company? Yes        No X

**PART I: CONTRACTOR/SUBCONTRACTOR INFORMATION**

7. 20-5890295 JAMES@COMMERCEELECTRICAL.COM  
Employer Identification Number or Federal Tax I.D. Email Address
8. COMMERCE ELECTRICAL CONTRACTING CORP.  
Company Name
9. 23-86 BQE WEST, ASTORIA NY 11103  
Company Address and Zip Code
10. DIMITRIOS TOMBORIS 718-233-4955  
Chief Operating Officer Telephone Number
11. SAME  
Designated Equal Opportunity Compliance Officer Telephone Number  
(If same as Item #10, write "same")
12. SAME  
Name of Prime Contractor and Contact Person  
(If same as Item #8, write "same")

13. Number of employees in your company: 16

**14. Contract information:**

(a) Contracting Agency (City Agency)

(b) Contract Amount

(c) Procurement Identification Number (PIN)

(d) Contract Registration Number (CT#)

(e) Projected Commencement Date

(f) Projected Completion Date.

**(g) Description and location of proposed contract:**

15. Has your firm been reviewed by the Division of Labor Services (DLS) within the past 36 months and issued a Certificate of Approval? Yes      No X

**If yes, attach a copy of certificate.**

16. Has DLS within the past month reviewed an Employment Report submission for your company and issued a Conditional Certificate of Approval? Yes \_\_\_\_\_ No X

**If yes, attach a copy of certificate.**

**NOTE: DLS WILL NOT ISSUE A CONTINUED CERTIFICATE OF APPROVAL IN CONNECTION WITH THIS CONTRACT UNLESS THE REQUIRED CORRECTIVE ACTIONS IN PRIOR CONDITIONAL CERTIFICATES OF APPROVAL HAVE BEEN TAKEN.**

17. Has an Employment Report already been submitted for a different contract (not covered by this Employment Report) for which you have not yet received compliance certificate?

Yes        No X

**If yes,**

Date submitted: \_\_\_\_\_

Agency to which submitted: \_\_\_\_\_

Name of Agency Person: \_\_\_\_\_

Contract No: \_\_\_\_\_

Telephone: \_\_\_\_\_

18. Has your company in the past 36 months been audited by the United States Department of Labor, Office of Federal Contract Compliance Programs (OFCCP)? Yes \_\_\_\_\_ No X

**If yes,**

(a) Name and address of OFCCP office.

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(b) Was a Certificate of Equal Employment Compliance issued within the past 36 months?

Yes\_\_\_ No\_\_\_

If yes, attach a copy of such certificate.

(c) Were any corrective actions required or agreed to? Yes\_\_\_ No\_\_\_

If yes, attach a copy of such requirements or agreements.

(d) Were any deficiencies found? Yes\_\_\_ No\_\_\_

If yes, attach a copy of such findings.

19. Is your company or its affiliates a member or members of an employers' trade association which is responsible for negotiating collective bargaining agreements (CBA) which affect construction site hiring? Yes X No\_\_\_

If yes, attach a list of such associations and all applicable CBA's.

## PART II: DOCUMENTS REQUIRED

20. For the following policies or practices, attach the relevant documents (e.g., printed booklets, brochures, manuals, memoranda, etc.). If the policy(ies) are unwritten, attach a full explanation of the practices. See instructions.

X (a) Health benefit coverage/description(s) for all management, nonunion and union employees (whether company or union administered)

X (b) Disability, life, other insurance coverage/description

X (c) Employee Policy/Handbook

\_\_\_ (d) Personnel Policy/Manual

\_\_\_ (e) Supervisor's Policy/Manual

\_\_\_ (f) Pension plan or 401k coverage/description for all management, nonunion and union employees, whether company or union administered

X (g) Collective bargaining agreement(s).

X (h) Employment Application(s)

\_\_\_ (i) Employee evaluation policy/form(s).

\_\_\_ (j) Does your firm have medical and/or non-medical (i.e. education, military, personal, pregnancy, child care) leave policy?

21. To comply with the Immigration Reform and Control Act of 1986 when and of whom does your firm require the completion of an I-9 Form?

- |  |                |               |
|--|----------------|---------------|
| (a) Prior to job offer                     | Yes <u>X</u>   | No <u>   </u> |
| (b) After a conditional job offer          | Yes <u>   </u> | No <u>X</u>   |
| (c) After a job offer                      | Yes <u>   </u> | No <u>X</u>   |
| (d) Within the first three days on the job | Yes <u>   </u> | No <u>X</u>   |
| (e) To some applicants                     | Yes <u>   </u> | No <u>X</u>   |
| (f) To all applicants                      | Yes <u>X</u>   | No <u>   </u> |
| (g) To some employees                      | Yes <u>   </u> | No <u>X</u>   |
| (h) To all employees                       | Yes <u>X</u>   | No <u>   </u> |

22. Explain where and how completed I-9 Forms, with their supportive documentation, are maintained and made accessible.

PLATINUM PAYROLL SERVICES 55 NORTHERN BLVD. GREAT NECK NY 11021

23. Does your firm or any of its collective bargaining agreements require job applicants to take a medical examination? Yes     No X

If yes, is the medical examination given:

- |                                   |                |               |
|-----------------------------------|----------------|---------------|
| (a) Prior to a job offer          | Yes <u>   </u> | No <u>   </u> |
| (b) After a conditional job offer | Yes <u>   </u> | No <u>   </u> |
| (c) After a job offer             | Yes <u>   </u> | No <u>   </u> |
| (d) To all applicants             | Yes <u>   </u> | No <u>   </u> |
| (e) Only to some applicants       | Yes <u>   </u> | No <u>   </u> |

If yes, list for which applicants below and attach copies of all medical examination or questionnaire forms and instructions utilized for these examinations.

\_\_\_\_\_

24. Do you have a written equal employment opportunity (EEO) policy? Yes X No    

If yes, list the document(s) and page number(s) where these written policies are located.

\_\_\_\_\_

25. Does the company have a current affirmative action plan(s) (AAP)

    Minorities and Women  
    Individuals with handicaps  
    Other. Please specify NO

26. Does your firm or collective bargaining agreement(s) have an internal grievance procedure with respect to EEO complaints? Yes X No    

If yes, please attach a copy of this policy.

If no, attach a report detailing your firm's unwritten procedure for handling EEO complaints.

27. Has any employee, within the past three years, filed a complaint pursuant to an internal grievance procedure or with any official of your firm with respect to equal employment opportunity? Yes\_\_\_ No X

If yes, attach an internal complaint log. See instructions.

28. Has your firm, within the past three years, been named as a defendant (or respondent) in any administrative or judicial action where the complainant (plaintiff) alleged violation of any anti-discrimination or affirmative action laws? Yes\_\_\_ No X

If yes, attach a log. See instructions.

29. Are there any jobs for which there are physical qualifications? Yes\_\_\_ No X

If yes, list the job(s), submit a job description and state the reason(s) for the qualification(s).

---

30. Are there any jobs for which there are age, race, color, national origin, sex, creed, disability, marital status, sexual orientation, or citizenship qualifications? Yes\_\_\_ No X

If yes, list the job(s), submit a job description and state the reason(s) for the qualification(s).

---



**SIGNATURE PAGE**

I, (print name of authorized official signing) DIMITRIOS TOMBORIS hereby certify that the information submitted herewith is true and complete to the best of my knowledge and belief and submitted with the understanding that compliance with New York City's equal employment requirements, as contained in Chapter 56 of the City Charter, Executive Order No. 50 (1980), as amended, and the implementing Rules and Regulations, is a contractual obligation. I also agree on behalf of the company to submit a certified copy of payroll records to the Division of Labor Services on a monthly basis.

COMMERCE ELECTRICAL CONTRACTING CORP.

Contractor's Name

DIMITRIOS TOMBORIS

PRESIDENT

Name of person who prepared this Employment Report

Title

DIMITRIOS TOMBORIS

PRESIDENT

Name of official authorized to sign on behalf of the contractor

Title

718-233-4955

Telephone Number

Signature of authorized official

Date

3/19/18

If contractors are found to be underutilizing minorities and females in any given trade based on Chapter 56 Section 3H, the Division of Labor Services reserves the right to request the contractor's workforce data and to implement an employment program.

Contractors who fail to comply with the above mentioned requirements or are found to be in noncompliance may be subject to the withholding of final payment.

Willful or fraudulent falsifications of any data or information submitted herewith may result in the termination of the contract between the City and the bidder or contractor and in disapproval of future contracts for a period of up to five years. Further, such falsification may result in civil and/or criminal prosecution.

To the extent permitted by law and consistent with the proper discharge of DLS' responsibilities under Charter Chapter 56 of the City Charter and Executive Order No. 50 (1980) and the implementing Rules and Regulations, all information provided by a contractor to DLS shall be confidential.

**Only original signatures accepted.**

Sworn to before me this 19<sup>th</sup> day of March 20 18

Notary Public

Authorized Signature

Date

**FORM A. CONTRACT BID INFORMATION: USE OF SUBCONTRACTORS/TRADES**

1. Do you plan to subcontractor work on this contract? Yes X No
2. If yes, complete the chart below.

**NOTE: All proposed subcontractors with a subcontract in excess of \$750,000 must complete an Employment Report for review and approval before the contract may be awarded and work commences.**

SUBCONTRACTOR'S NAME*	OWNERSHIP (ENTER APPROPRIATE CODE LETTERS BELOW)	WORK TO BE PERFORMED BY SUBCONTRACTOR	TRADE PROJECTED FOR USE BY SUBCONTRACTOR	PROJECTED DOLLAR VALUE OF SUBCONTRACT
CDG AIR CONDITIONING	W	HVAC	SH FETMETAL	816,928
ARCH ELECTRIC LLC	W	ELECTRIC	ELECTRICIAN	400,000

\*If subcontractor is presently unknown, please enter the trade (craft name).

**OWNERSHIP CODES**

W: White  
 B: Black  
 H: Hispanic  
 A: Asian  
 N: Native American  
 F: Female

FORM B: PROJECTED WORKFORCE

TRADE CLASSIFICATION CODES

(J) Journeylevel Workers (A) Apprentice  
(H) Helper (TRN) Trainee  
(TOT) Total by Column

For each trade to be engaged by your company for this project, enter the projected workforce for Males and Females by trade classification on the charts below.

Trade:  
ELECTRICAL

Union Affiliation, if applicable  
LOCAL 3

Total (Col. #1-10):  
8

Total Minority, Male & Female  
(Col. #2,3,4,5,7,8,9, & 10):  
4

Total Female  
(Col. #6 – 10):  
0

MALES

	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.
J	4	2	2		
H					
A	2				
TRN					
TOT	6	2	2		

FEMALES

	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J					
H					
A					
TRN					
TOT					

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?

LOCAL 3

FORM B: PROJECTED WORKFORCE

Trade: \_\_\_\_\_

Union Affiliation, if applicable \_\_\_\_\_

Total (Col. #1-10): \_\_\_\_\_

Total Minority, Male & Female  
(Col. #2,3,4,5,7,8,9, & 10): \_\_\_\_\_

Total Female  
(Col. #6 – 10): \_\_\_\_\_

MALES					FEMALES					
	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J										
H										
A										
TRN										
TOT										

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?

**FORM C: CURRENT WORKFORCE**

**TRADE CLASSIFICATION CODES**

(J) Journeylevel Workers (A) Apprentice  
(H) Helper (TRN) Trainee  
(TOT) Total by Column

For each trade currently engaged by your company for all work performed in New York City, enter the current workforce for Males and Females by trade classification on the charts below.

Trade:  
ELECTRICIAN

Union Affiliation, if applicable  
LOCAL 363

Total (Col. #1-10):

Total Minority, Male & Female  
(Col. #2,3,4,5,7,8,9, & 10):

Total Female  
(Col. #6 – 10):

**MALES**

	(1) White Non Hisp.	(2) Black Non Hisp.	(3) Hisp.	(4) Asian	(5) Native Amer.
J	8				
H					
A	3				
TRN					
TOT	11				

**FEMALES**

	(6) White Non Hisp.	(7) Black Non Hisp.	(8) Hisp.	(9) Asian	(10) Native Amer.
J					
H					
A					
TRN					
TOT					

What are the recruitment sources for you projected hires (i.e., unions, government employment office, job tap center, community outreach)?

LOCAL 3

FMS ID: PO79GENER



Department of  
Design and  
Construction

---

**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](http://www.nyc.gov/buildnyc)

---

**Contract for Furnishing all Labor and Material Necessary and Required for:**

**CONTRACT NO. 1      ELECTRICAL WORK**

## **Replacement of Generators at 2 NYPD Precincts**

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

---

Contractor

---

Dated \_\_\_\_\_, 20\_\_\_\_

---

Entered in the Comptroller's Office

---

First Assistant Bookkeeper

---

Dated \_\_\_\_\_, 20\_\_\_\_





Department of  
Design and  
Construction

PROJECT ID:

PO79GENER

**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](http://www.nyc.gov/buildnyc)

**LAW**

**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

**Replacement of Generators at 2 NYPD  
Precincts**

LOCATION:  
BOROUGH:  
CITY OF NEW YORK

Various  
Manhattan

CONTRACT NO. 1

ELECTRICAL WORK

NYPD

Goldman Copeland



Date: December 20, 2017

18-069





## **2015 Project Labor Agreement**

### **NOTICE: THIS CONTRACT IS SUBJECT TO A NEW PROJECT LABOR AGREEMENT EXECUTED IN 2015**

**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 the attached Letter of Assent prior to award. 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. Contractor will also be required to have all subcontractors of all tiers execute the attached Letter of Assent prior to such subcontractors performing any work on the Project. 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. All bidders should carefully read the entire PLA that governs this Contract.**

**In addition, please note that there are significant revisions between the 2015 PLA attached to this bid and the prior Citywide Renovation PLA. The Contractor is urged to review the entire PLA. Significant changes include:**

- **Micro Work Orders:** For JOCS and Requirements contracts, Task Orders or Work Orders that do not exceed \$10,000 are not subject to the PLA. See PLA Article 3, Section 1.
- **On Call Contracts:** Provisions have been added regarding the referral of workers for on call contracts where Contractors are required to respond on an expedited basis. See PLA Article 4, Section 8.
- **Grievances:** The grievance procedure governing disputes under the PLA has been clarified. See PLA Article 9, Section 1.
- **Delinquent Contractors:** Contractors and Subcontractors who do not make required payments to union funds on a timely basis are subject to requirements to submit cancelled checks or another form of proof of payment in addition to certified payroll reports when requesting payment. See PLA Article 11, Section 2.
- **Payment to Union Funds for Non-Union Workers:** 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 “core” non-union employees (working pursuant to Article 4, Section 2 of the PLA) who are already covered under such bona fide private benefit plans. See PLA Article 11, Section 2.
- **Veterans Day:** Veterans Day has been added to the list of standard holidays. See Article 12, Section 4.
- **Reporting Pay for Weather Events:** 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 Article 12, Section 6.

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, 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.

In addition to the various provisions regarding work rules, Contractors should take special note of the requirement that Contractors and Subcontractors make payments to designated employee benefit funds. See PLA Article 11, Section 2. The PLA also contains provisions for what occurs when a Contractor or a subcontractor fails to make required payments into the benefit funds, including potentially the direct payment by the City to the benefit fund of monies owed and corresponding withholding of payments to the Contractor. See PLA Article 11, Section 2. The City strongly advises Contractors to read these provisions carefully and to include appropriate provisions in subcontracts addressing these possibilities.

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 in Schedule B entitled the "Subcontractor Utilization Plan," and are detailed in a separate Notice to Prospective Contractors included with 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 2(C), carefully. A list of certified M/WBE firms may be obtained from the Department of Small Business Services (DSBS) website at [www.nyc.gov/getcertified](http://www.nyc.gov/getcertified), by emailing DSBS at [MWBE@sbs.nyc.gov](mailto:MWBE@sbs.nyc.gov), by calling the DSBS certification hotline at (212) 513-6311, or by visiting or writing DSBS at 110 William St., 7<sup>th</sup> floor, New York, New York, 10038.

The local collective bargaining agreements (CBAs) that are incorporated into the PLA as PLA Schedule A Agreements are available on computer disk from the Department's 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.

A contact list for the participating unions is set forth after the FAQs.

Below are answers to frequently asked questions (FAQs) about this PLA:

1. **Q.** Does a Contractor need to be signatory with the unions in the NYC Building and Construction Trades Council 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.
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 must agree to become party to the PLA. See PLA Art. 2, Sec. 8. Subject to the Department'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 and agrees to the terms of the PLA.
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. Subcontractors, however, will be required to sign the Letter of Assent prior to being approved by the Department.
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. See PLA Article 4. However, Contractors and subcontractors may continue to use up to 12% of their existing, qualifying labor force for this work, in accordance with the terms of PLA Article 4, Section 2B. Certified M/WBEs for which participation goals are set pursuant to NYC Administrative Code §6-129 that are not signatory to any Schedule A CBAs may use their existing employees for the 2nd, 4th, 6th and 8th employee needed on the job if their contracts are valued at or under \$500,000. For contracts valued at above \$500,000 but under \$1,000,000, such certified M/WBEs may use their own employees for the 2nd, 5th and 8th employees needed on the job in accordance with the provisions of PLA Article 4, Section 2C. If additional workers are needed by these M/WBEs, the additional workers will be referred to the Contractor from the signatory local unions subject to the Contractor's right to meet 12% of the additional needs with its existing, qualifying employees.
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 2C?  
**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 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 projects 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 collective bargaining agreements (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. Non-union employees working under the PLA are subject to the union security provisions (i.e., union dues/agency shop fees) of the local CBAs while on the project. These 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.** When will the agency shop dues payer affiliate workers 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 agency shop dues payer affiliate workers should speak with the respective union(s) as to benefit eligibility thresholds.
10. **Q.** Are all Contractors and subcontractors working under the PLA, including non-union Contractors and Contractors signatory to collective bargaining agreements 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. See PLA Article 11, Section 2. 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 D.

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 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 Section 220. See PLA Article 11, Section 2.

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. May a contractor discharge a union referral for lack of productivity?

A. Again, 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.

15. 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.
16. 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 and may not be altered by the Contractor.
17. Q. Does the PLA create a common holiday schedule for all the signatory trades?
- A. Yes, the PLA recognizes nine (9) common holidays, including Veterans Day. See PLA Article 12, Section 4.
18. 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.
19. 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.
20. 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.
21. 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.
22. Q. Does the PLA contain special provisions for the manning 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.
23. 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.
24. 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.
25. 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.
26. 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 Project Labor Agreements 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.
27. 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.
28. 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. See PLA Article 10. A copy of the NY Plan is available upon request from the



Department. 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, Section 3.

29. **Q.** Does the 2015 Renovation 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 \$10,000 issued under JOCS or Requirements Contracts otherwise subject to the PLA. See PLA Article 3, Section 1.

# **NYC Project Labor Agreements**

**CONTACT INFORMATION FOR LOCAL UNIONS (Updated May 2016)**

## **BOILER MAKERS LOCAL NO. 5**

24 Van Siclen Avenue  
Floral Park, NY 11001  
Phone: (516) 326-2500  
Fax: (516) 326-3435  
Business Manager: Steve Ludwigson

## **BLASTERS, DRILLRUNNERS & MINERS LOCAL NO. 29**

43-12 Ditmars Blvd.  
Astoria, NY, 11105  
Phone: (718) 278-5800  
Business Manager: Thomas Russo

## **BRICKLAYERS LOCAL NO. 1**

4 Court Square #1  
Long Island City, NY 11101  
Phone: (718) 392-0525  
Business Manager: Jeramiah Sullivan

## **CARPENTERS DISTRICT COUNCIL**

395 Hudson Street, 9<sup>th</sup> Fl  
New York, New York 10014  
Phone: (212) 366-7500  
Fax: (212) 675-3140  
Business Manager: Joe Geiger  
John Sheehy, D.C. Rep.

## **CEMENT MASONS NO. 780**

150-50 14<sup>th</sup> Rd Suite 4  
Whitestone, NY 11357  
Phone: (718) 357-3750  
Fax: (718) 357-2057  
Business Manager: Gino Castingnoli

## **CONCRETE WORKERS DISTRICT COUNCIL NO. 16**

29-18 35<sup>th</sup> Avenue  
Long Island City, NY 11106  
Phone: (718) 392-5077  
Fax: (718) 392-5087  
Business Manager: Alex Castaldi

**DERRICKMEN & RIGGERS LOCAL 197**

35-53 24<sup>th</sup> Street  
Long Island City, NY 11101  
Phone: (718) 361-6534  
Fax: (718) 361-6584  
Business Manager: William Hayes  
[Billhayes197@yahoo.com](mailto:Billhayes197@yahoo.com)

**DRYWALL TAPERS 1974**

265 West 14<sup>th</sup> Street  
New York, NY 10011  
Phone: (212) 242-8500  
Fax: (212) 242-2356  
Business Manager: Sal Marsala

**ELECTRICAL LOCAL NO. 3**

158-11 Harry Van Arsdale, Jr. Avenue  
Flushing, NY 11365  
Phone: (718) 591-4000  
Fax: (718) 380-8998  
Business Manager: Chris Erickson  
Raymond Melville, Asst. Bus. Mgr.  
Construction

**ELEVATOR CONSTRUCTORS NO. 1**

47-24 27<sup>th</sup> Avenue  
Long Island City, NY 11101  
Phone: (718) 767-7004  
Fax: (718) 767-6730  
Business Manager: Lenny Legotte  
[llegotte@localoneiuec.com](mailto:llegotte@localoneiuec.com)

**ENGINEERS LOCAL NO. 14**

141-57 Northern Boulevard  
Flushing, NY 11354  
Phone: (718) 939-0600  
Fax: (718) 939-3131  
Business Manager: Edwin Christian

**ENGINEERS NO. 15, 15A, 15B, 15C, 15D**

44-40 11<sup>th</sup> Street  
Long Island City, NY 11101  
Phone: (212) 929-5327  
Business Manager: Tom Callahan

**ENGINEERS NO. 30**

16-16 Whitestone Expressway  
Whitestone, NY 11357  
Phone: (718) 847-8484  
Fax: (718) 850-0524  
Business Manager: William Lynn

**ENGINEERS No. 94**

331-337 West 44<sup>th</sup> Street  
New York, NY 10036  
Phone: (212) 245-7040  
Fax: (212) 245-7886  
Business Manager: Kuba Brown  
[kubabrown@local94.com](mailto:kubabrown@local94.com)

**GLAZIERS NO. 1087**

45 West 14<sup>th</sup> Street  
New York, NY 10011  
Phone: (212) 924-5200  
Fax: (212) 255-1151  
Business Manager: Steve Birmingham

**HEAT & FROST INSULATORS  
AND ALLIED WORKERS****LOCAL UNION NO. 12**

35-53 24<sup>th</sup> Street  
Long Island City, NY 11101  
Phone: (718) 784-3456  
Fax: (718) 784-8357  
Business Manager: Matty Aracich  
[matty@insulatorslocal12.com](mailto:matty@insulatorslocal12.com)

**HEAT & FROST INSULATORS  
LOCAL UNION NO. 12A**

1536 127<sup>th</sup> Street  
College Point, NY 11356  
Phone: (718) 886-7226  
Business Manager: Jaime Soto

**IRON WORKERS DISTRICT COUNCIL**

22 West 46<sup>th</sup> Street  
New York, NY 10036  
Phone: (212) 302-1868  
Business Manager: James Mahoney  
[jmahoney@iwintl.org](mailto:jmahoney@iwintl.org)

**IRON WORKERS NO. 40** (Manhattan, The Bronx & Staten Island)

451 Park Avenue South  
New York, NY 10016  
Phone: (212) 889-1320  
Fax: (212) 779-3267  
Business Manager: Bob Walsh

**IRON WORKERS NO. 361** (Brooklyn & Queens)

89-19 97<sup>th</sup> Avenue  
Ozone Park, NY 11416  
Phone: (718) 322-1016/17  
Fax: (718) 322-1053  
Business Manager: Matthew Chartrand

**LABORERS LOCAL NO. 78**  
**ASBESTOS & LEAD ABATEMENT**

30 Cliff Street  
New York, New York 10038  
Phone: (212) 227-4803  
Fax: (212) 406-1800  
Business Manager: Edison Severino

**LABORERS, CONSTRUCTION AND**  
**GENERAL BUILDING NO. 79**

520 8<sup>th</sup> Avenue  
New York, NY 10018  
Phone: (212) 465-7900  
Fax: (212- 465-7903  
Business Manager: Michael Prohaska

**LABORERS NO. 731**

34-11 35<sup>th</sup> Avenue  
Astoria, NY 11106  
(718) 706-0720  
Business Manager: Joseph D'Amato

**LATHERS METAL**  
**LOCAL NO. 46**

1322 Third Avenue  
New York, NY 10021  
Phone: (212) 737-0500  
Fax: (212) 249-1226  
Business Manager: Terrance Moore

**MASON TENDERS DIST. COUNCIL**

520 8<sup>th</sup> Avenue

New York, NY 10018

Phone: (212) 452-9400

Fax: (212) 452-9499

Business Manager: Robert Bonanza

**METAL POLISHERS**

**LOCAL UNION NO. 8A-28A**

36-18 33<sup>rd</sup> Street 2<sup>nd</sup> Fl.

Long Island City, NY 11106

Phone: (718) 361-1770

Fax: (718) 361-1934

Business Manager: Hector Lopez

**MILLWRIGHT AND MACHINERY**

**ERECTORS LOCAL NO. 740**

89-07 Atlantic Avenue

Woodhaven, NY 11412

Phone: (718) 849-3636

Fax: (718) 849-0070

Business Manager: Joseph Geiger

**ORNAMENTAL IRON WORKERS**

**NO. 580**

501 West 42<sup>nd</sup> Street

New York, NY 10036

Phone: (212) 594-1662

Fax: (212) 564-2748

Business Manager: Pete Myers

**PAINTERS DISTRICT**

**COUNCIL NO. 9**

45 West 14<sup>th</sup> Street

New York, NY 10011

Phone: (212) 255-2950

Fax: (212) 255-1151

Business Manager: Joseph Azzopardi

**PAINTERS STRUCTURAL STEEL**

**NO. 806**

40 West 27<sup>th</sup> Street

New York, New York 10001

Phone: (212) 447-1838/0149

Fax: (212) 545-8386

Business Manager: Angelo Serse

**PAVERS & ROAD BUILDERS**

**DISTRICT COUNCIL NO. 1**

136-25 37<sup>th</sup> Avenue, Suite 502

Flushing, NY 11354

Phone: (718) 886-3310

Business Manager: Keith Lozcalzo

**PLASTERS LOCAL UNION NO. 262**

2241 Conner Street

Bronx, NY 10466

Phone: (718) 547-5440

Fax: (718) 547-5435

Business Manager: Michael Hubler

**PLUMBERS NO. 1**

158-29 Cross Bay Boulevard

Howard Beach, NY 11414

Phone: (718) 738-7500

Fax: (718) 835-0896

Business Manager: John Murphy

**PRIVATE SANITATION**

**LOCAL NO. 813**

45-18 Court Square, Suite 600

Long Island City, NY 11101

Phone: (718) 937-7010 ext. 244

Fax: (718) 937-7003

Business Manager: Sean Campbell

**ROOFERS & WATERPROOFERS NO. 8**

12-11 43<sup>rd</sup> Avenue

Long Island City, NY 11101

Phone: (718) 361-1169

Fax (718) 361-8330

Business Manager: Nick Siciliano

**SHEET METAL WORKERS**

**LOCAL NO. 28**

MANHATTAN OFFICE

500 Greenwich Street

New York, NY 10013

Phone: (212) 941-7700

Fax: (212) 226-0304

Business Manager: Kevin Connors

**SHEET METAL WORKERS  
LOCAL 137**

21-42 44<sup>th</sup> Drive  
Long Island City, NY 11101  
Phone: (718) 937-4514  
Fax: (718) 937-4113  
Business Manager: Dante Dano

**STEAMFITTERS LOCAL UNION  
NO. 638**

32-32 48<sup>th</sup> Avenue  
Long Island City, NY 11101  
Phone: (718) 392-3420  
Fax: (718) 784-7285  
Business Manager: Bob Bartels

**TEAMSTERS LOCAL UNION 282**

2500 Marcus Avenue  
Lake Success, NY 11042  
Phone: (516) 488-2822  
Fax: (516) 488-4895  
Business Manager: Tom Gesauldi

**TEAMSTERS LOCAL UNION 814**

21-42 44<sup>th</sup> Drive  
Long Island City, NY 11101  
Phone: (718) 609-6407  
Fax: (718) 361-9610  
Business Manager: Jason Ide

**TILE, MARBLE & TERRAZO B.A.C.  
LOCAL UNION 7**

45-34 Court Square  
Long Island City, NY 11101  
Phone: (718) 786-7648  
Fax: (718) 472-2370  
Business Manager: Tom Lane

**TIMBERMEN & DOCKBUILDERS LOCAL 1556**

395 Hudson Street  
New York, NY 10014  
Phone: (212) 242-1320  
Business Manager: Joseph Geiger



NYC AGENCY RENOVATION & REHAB OF CITY OWNED BUILDINGS/STRUCTURES  
PLA

**PROJECT LABOR AGREEMENT**

**COVERING SPECIFIED**

**RENOVATION & REHABILITATION  
OF CITY OWNED BUILDINGS AND STRUCTURES**

**2015 - 2018**

NYC AGENCY RENOVATION & REHAB OF CITY OWNED BUILDINGS/STRUCTURES  
PLA

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**PROJECT LABOR AGREEMENT COVERING SPECIFIED  
RENOVATION & REHABILITATION OF NEW YORK CITY OWNED  
FACILITIES & 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;

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(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) ensuring a reliable source of skilled and experienced labor; and

(9) 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, 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”) (on behalf of itself) and the signatory affiliated Local Union’s (“Unions” or “Local Unions”). The Council and each signatory Local Union hereby warrants and represents that it has been duly authorized to enter into this Agreement.



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**ARTICLE 2 - GENERAL CONDITIONS**

**SECTION 1. DEFINITIONS**

Throughout this Agreement, the various Union parties including the Building and Construction Trades Council of Greater New York and Vicinity and its participating affiliated Local Unions, are referred to singularly and collectively as “Union(s)” or “Local Unions”; 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; “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); Department of Sanitation (DSNY); the New York City Agency that awards a particular contract subject to this Agreement may be referred to hereafter as the “Agency”; 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; the Building and Construction Trades Council of Greater New York and Vicinity is referred to as the [“BCTC” or “Council”]; and the work covered by this Agreement (as defined in Article 3) is referred to as “Program Work.”

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**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 his 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 appended hereto as Schedule A, represents the complete understanding of all signatories and supersedes any national agreement, local agreement or other collective bargaining agreement of any type which would otherwise apply to this Program Work, in whole or in part, except that Program Work which falls within the jurisdiction of the Operating

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Engineers Locals 14 and 15 will be performed under the terms and conditions set out in the Schedule A agreements of Operating Engineers Locals 14 and 15. The Collective Bargaining Agreements 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 Collective Bargaining Agreements 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 Agreement is also covered by a Schedule A Collective Bargaining Agreement, the provisions of this 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 on this Program Work unless endorsed in writing by the Construction Manager or such other designee as may be designated by the Agency.

**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 violations of this Agreement by any other Contractor; and the

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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 Program.

**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.

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**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**

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 let prior to December 31, 2018. Subject to the foregoing, and the exclusions below, such Program Work shall mean any and all contracts that predominantly involve the renovation, repair, alteration, 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. This Program Work shall also include JOCS contracts, demolition work, site work, asbestos and lead abatement, painting services, carpentry services, and carpet removal and installation, to the extent incidental to such building rehabilitation of City-owned buildings or structures.

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

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1. Contracts let and work performed in connection with projects carried over, 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, 2018;

2. Contracts procured on an emergency basis;

3. Contracts that do not exceed \$250,000;

4. Contracts for work on streets and bridges and for the closing or environmental remediation of landfills;

5. Contracts with not-for-profit corporations where the City is not awarding or performing the work performed for that entity;

6. Contracts with governmental entities where the City is not awarding or performing the work performed for that entity;

7. 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;

8. Contracts for installation of information technology that are not otherwise Program Work;

9. Task Orders or Work Orders issued under JOCS or Requirements Contracts that do not exceed \$10,000, and JOCS or Requirements Contracts where the monetary value of such contracts predominantly involves such Task Orders or Work

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Orders; and

10. Contracts that do not exceed \$1 Million that are awarded pursuant to prequalified lists (PQLs) established by City agencies where entry on to the PQL is restricted to MWBEs, or a combination of MWBEs together with joint ventures which include at least one MWBE, or contractors who agree to subcontract at least 50% of the contract to MWBEs.

**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, 2018, 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 (excluding general and forepersons specifically covered by a craft's Schedule A), engineers, professional engineers and/or licensed architects engaged in inspection and testing, quality control/assurance personnel, timekeepers, mail carriers, clerks, office workers, messengers, guards, technicians,

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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 Program 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 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



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other professional consultants, and such laboratory, testing, inspection or surveying firm;  
and

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.

**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.

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**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 employ and hire craft employees for Program Work covered by this Agreement through the job referral systems and hiring halls established in the Local Unions' area collective bargaining agreements. 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 is unable to 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.

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B. A Contractor may request by name, and the Local will honor, referral of persons 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 180 calendar days prior to the contract award.

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 contracts valued at or under five hundred thousand (\$500,000), may request by name, and the Local will honor, referral of the second (2<sup>nd</sup>), fourth (4<sup>th</sup>), sixth (6<sup>th</sup>), and eighth (8<sup>th</sup>) 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 180 work days prior to the contract award.

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For such contracts valued at above \$500,000 but less than \$1 million, the Local will honor referrals by name of the second (2<sup>nd</sup>), fifth (5<sup>th</sup>), and eighth (8<sup>th</sup>) employee subject to the foregoing requirements. In both cases, name referrals will thereafter be in accordance with Section 2(B), above.

D. Where a certified MWBE Contractor voluntarily enters into a Collective Bargaining Agreement ("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 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

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specifications, within 48 hours of the request for same, the Contractor may employ qualified minority or female applicants from any other available source.

In the event that the City or a City agency determines to adopt local workforce participation goals to be set forth in an Agency's (or, if applicable Construction Manager's) bid specifications, the City and BCTC will work together to seek agreement on appropriate goals to be set forth in applicable bid documents and to be subject to the provisions 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 will acknowledge the Section 3 obligations of the Construction Manager or Contractor, as applicable, and agree to negotiate a method to 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 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

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will exert their utmost efforts to recruit sufficient numbers of skilled and qualified crafts employees to fulfill the requirements of the Contractor.

**SECTION 6. UNION DUES**

All employees covered by this Agreement shall be subject to the union security provisions contained in the applicable Schedule A local agreements, as amended from time to time, but only for the period of time during which they are performing on-site Program Work and only to the extent of tendering payment of the applicable union dues and assessments uniformly required for union membership in the Local Unions which represent the craft in which the employee is performing Program Work. No employee shall be discriminated against at any Program Work site because of the employee's union membership or lack thereof. In the case of unaffiliated employees, the dues payment will be received by the Local Unions as an agency shop fee.

**SECTION 7. 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, 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 Collective Bargaining Agreement prohibits a foreperson from working when the craft persons he is leading exceed a specified number.

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**SECTION 8. ON CALL REPAIR REFERRALS**

A. When an Agency awards a contract 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 appropriate affiliated Union that it 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. 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.

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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 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 Work site during such time as bargaining unit work is occurring and subject to otherwise applicable policies pertaining to visitors to the site.



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**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.

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 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.

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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 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,

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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 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 disruptive activity at the Program Work site for any reason by any Union or employee against any Contractor or employer. There

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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 complies with these obligations it shall not be liable for the unauthorized acts of a Local Union or its members. Similarly, a Local Union

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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

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to present their case, and conduct their cross examination) unless otherwise agreed. A failure of any Union or Contractor to attend the hearing 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.

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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, 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 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 minority and female employees.

**SECTION 2. COMPOSITION**

The Committee 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 may mutually designate an

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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 address; such information is posted at the Program Work Site if already commenced, and is available in the City Record and Notice to Proceed for projects not already commenced.

Grievances as to whether a scope of work is included or excluded from this Agreement shall be submitted to the Labor Management Committee (LMC) in the first instance rather than Step 1 below. To be timely, such notice must be given no later than ten days prior to a bid opening if the grievance is challenging a determination by an Agency that the contract is not subject to this Agreement. For other grievances as to contractor 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:**



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(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 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:**

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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, 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 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.

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(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.

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**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.

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**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 Collective Bargaining Agreements 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.

B. 1. Notwithstanding Section 2 (A) above, and subject to 2 (B)(2) below, Contractors who designate employees pursuant to Article 4, Section 2 (B) and (C) ("core" employees) 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 Labor Law, may

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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.

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

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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.

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](http://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

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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 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



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law and the PLA 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 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 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

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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.

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**ARTICLE 12- HOURS OF WORK, PREMIUM PAYMENTS,**

**SHIFTS AND HOLIDAYS**

**SECTION 1. WORK WEEK AND WORK DAY**

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 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 work day must be established at the commencement of the project and may not be altered by the Contractor.

B. In accordance with Program 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.

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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 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 (7 ½) hours where such 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

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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 work days notice to the Local Union or such lesser notice as may be mutually agreed upon.

B. Second and/or Third Shifts/Saturday and/or Sunday Work - - The second shift shall start between 3 p.m. and 6 p.m. and the third shift shall start between 11 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. No other premium or other payments for such work shall be required unless such work is in excess of the employee's regularly scheduled work week, i.e., 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 a classification performing Program Work will be paid at the same wage rate regardless of the shift or work scheduled work, subject only to the foregoing provisions.

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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

Memorial Day

Labor Day

Independence Day

President's Day

Veteran's Day

Thanksgiving 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 recognized holiday shall be in accordance with the applicable Schedule A.

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

**SECTION 5. SATURDAY 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

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a regularly scheduled weekday, the Contractor may schedule a Saturday make-up day 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 his 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

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notify each employee directly and confirm that notification has been received. Voice, text, and email messages left for employees without 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.



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**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 work day 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 brassing or other systems to check employees in and out. Each employee must check in and out. 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

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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.

**ARTICLE 13 - APPRENTICES**

**SECTION 1. RATIOS**

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 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. 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 and Helmets to Hardhats.

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**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.

**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 this 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.

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**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**

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 this 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). There shall be no stacking of trades on temporary services, 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, age or any other status provided by law, in any manner prohibited by law or regulation.

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**SECTION 2. LANGUAGE OF AGREEMENT**

The use of the masculine or feminine gender in this Agreement shall be construed as including both genders.

**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.

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**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 WORK DAY**

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 NYS Department of Labor, 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, and similar differentials and premiums. This Agreement does not, however,

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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 Program 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

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basis, or is otherwise determined to be in violation of law, or may cause the loss of Program 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 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.



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**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 Collective Bargaining Agreements that are the basis for the Schedule A notify the Agency and Construction Manager in writing of the changes agreed to in that Area Collective Bargaining which are applicable to work covered by this Agreement and their effective dates.

B. It is agreed that any provisions negotiated into Schedule A collective bargaining agreements will not apply to work under this Agreement if such provisions are less favorable to those uniformly required of 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 Collective Bargaining Agreements 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

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Local Collective Bargaining Agreements 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 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 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.

**SECTION 2.**

The Unions and Contractors agree to coordinate with the Program to create and maintain an integrated database of veterans interested in working on this Project and of

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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.

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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  
President

FOR NEW YORK CITY

BY:  
Anthony Shorris  
First Deputy Mayor

APPROVED AS TO FORM:

\_\_\_\_\_  
ACTING CORPORATION COUNSEL  
NEW YORK CITY

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LIST OF SIGNATORY UNIONS
Boiler Makers Local No. 5
Carpenters District Council
Cement Masons No. 780
Concrete Workers, District Council No. 16
Derrickmen and Riggers, Local Union No. 197
Drywall Tapers 1974, District Council 9
Electrical Workers Local No. 3
Glaziers Local Union No. 1087 District Council 9
Heat & Frost Insulators, Local Union No. 12A
Heat & Frost Insulators, Local Union No. 12
Iron Workers District Council
Iron Workers Local Union No. 40
Iron Workers Local No. 361
Laborers Local No. 78, Asbestos & Lead Abatement
Laborers Local 1010 Pavers and Road Builders District Council
Laborers 79 Construction and General Building Laborers
Laborers Local No. 731 Excavators
Mason Tenders District Council
Metal Lathers Local No. 46
Metal Polishers District Council 9
Ornamental Iron Workers Local No. 580
Painters District Council 9
Plumbers Local No. 1
Painters, Decorators & Wallcoverers District Council 9
Painters Structural Steel No. 806
Plasterers Local Union No. 262
Roofers & Waterproofers Local 8
Steamfitters Local Union No. 638
Sheet Metal Workers Local No. 28
Sheet Metal Workers Local No. 137
Teamsters Local Union No. 282
Teamsters Local Union 814
Teamsters Local No. 813 Private Sanitation
Tile, Marble & Terrazzo B.A.C. Local Union No. 7
Elevator Constructors Union Local No. 1

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**SCHEDULE "A"**

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.
District Council No. 9, I.U.P.A.T Glaziers Local 1087	Window and Plate Glass Dealers Association
Drywall Tapers and Pointers 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
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

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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
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

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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
Teamsters Local 814	Greater New York Movers and Warehousemen's Bargaining Group
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



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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
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

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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
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

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United Derrickmen & Riggers Association, Local 197 of NY, LI, Westchester & Vicinity	Contracting Stonesetters Association Inc.
United Derrickmen & Riggers Association L 197 of NY, LI, Westchester and Vicinity	Building Stone and Pre-cast Contractors Association
International Union of Operating Engineers Local 14-14B	Building Contractors Association
International Union of Operating Engineers Local 14-14B	Contractors Association of Greater NY
International Union of Operating Engineers Local 14-14B	GCA
International Union of Operating Engineers Local 14-14B	The Cement League
International Union of Operating Engineers Local 14-14B	Allied Building Metal Industries, Inc.
International Union of Operating Engineers Local 14-14B	Brick Association
International Union of Operating Engineers Local 14-14B	Independent
International Union of Operating Engineers Local 15	Allied Building Metal Industries, Inc.
International Union of Operating Engineers Local 15-15A	General Contractors Association
International Union of Operating Engineers Local 15D	General Contractors Association
International Union of Operating Engineers Local 15D	Structural Steel Erectors

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International Union of Operating Engineers Local 15-15A	Building Contractors Association
International Union of Operating Engineers Local 15D	Building Contractors Association
International Union of Operating Engineers Local 15-15A	Contractors Association of Greater NY
International Union of Operating Engineers Local 15D	Contractors Association of Greater NY
International Union of Operating Engineers Local 15-15A	The Cement League
International Union of Operating Engineers Local 15D	The Cement League

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ADDITIONAL PARTICIPATING UNIONS

Local No. 1 New York of the International Union of Bricklayers and Allied Craft Workers
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ADDITIONAL PARTICIPATING UNION SCHEDULE A

Union	Current Agreement with:
Local No. 1 New York of the International Union of Bricklayers and Allied Craft Workers	Independent
Local No. 1 New York of the International Union of Bricklayers and Allied Craft Workers	Associated Brick Masons Contractors
Local No. 1 New York of the International Union of Bricklayers and Allied Craft Workers	Building Restoration Contractors Association
Local No. 1 New York of the International Union of Bricklayers and Allied Craft Workers	Building Contractors Association
The Stone Setters of Local No. 1 New York of the International Union of Bricklayers and Allied Craft Workers	Independent
The Plasterers of Local No. 1 New York of the International Union of Bricklayers and Allied Craft Workers	Independent

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**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 \_\_\_\_\_ and located at \_\_\_\_\_ (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:

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Dated: \_\_\_\_\_

\_\_\_\_\_  
(Name of Contractor or subcontractor)

\_\_\_\_\_  
(Name of CM; GC; Contractor or  
Higher Level Subcontractor)

\_\_\_\_\_  
(Authorized Officer & Title)

\_\_\_\_\_  
(Address)

\_\_\_\_\_  
(Phone) (Fax)

Contractor's State License  
# \_\_\_\_\_

Sworn to before me this  
\_\_\_\_\_ day of \_\_\_\_\_,

\_\_\_\_\_  
Notary Public

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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 days 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.



## Codes of Conduct

1. The workforce shall adhere to the minimum personal protective equipment (PPE) usage to include:
  - a. ANSI compliant Hard Hats (with ratchet suspension) at all times (supplied by employer)
  - b. Construction-type Work Boots at all times
  - c. Long Pants and shirts with at least short sleeves at all times (no shorts or tank tops)
  - d. ANSI compliant Eye Protection in their possession and used as needed (supplied by employer)
  - e. Adequate Hearing Protection in their possession and used as needed (supplied by employer)
  - f. High-vis traffic vests at street level and when around heavy equipment (supplied by employer)
2. CM and Subcontractor management shall implement a fair and consistent disciplinary policy for all site personnel regarding the adherence to site safety rules and requirements. Likewise, a joint labor / management team will periodically assess project wide implementation of these Codes.
3. CM firms shall maintain minimum standards for workforce restroom, hygiene facilities and housekeeping, initially and throughout the duration of the project.
4. All personnel shall adhere to a strict policy against drug and alcohol possession and use on sites and during hours of work.
5. All personnel shall attend a site safety orientation prior to beginning work. Worker certifications of safety training for specific tasks such as fire watch, flagmen, and safety attendant must be verified.
6. No cell phones, portable media devices, radios or other devices that limit hearing and attention shall be used while working on sites.
7. Ground Fault Circuit Interrupters (GFCI) will be used on all power tools and extension cords.
8. Union trade representatives shall participate in a regularly scheduled site safety meeting on all projects regardless of size.
9. Extreme effort shall be made to isolate the public from all construction activity. Specifically, systems shall be put in place to control falling materials and pedestrian exposure. This should be a top priority for the entire project workforce.
10. Workers shall honor security access control systems to establish entry to sites by authorized personnel only, where applicable.
11. Fall protection management shall be a top project priority. Workers shall maintain and use necessary fall protection systems and procedures where appropriate. Engineering controls and work methods which eliminate, guard, or otherwise control fall hazards shall take priority over personal fall arrest system usage.
12. Where hazardous materials are present, projects shall implement efforts to communicate and control potential exposure to the workforce.

George Colette

Edward J. Brennan

James Alb

Boys' Land Camp  
Flax Construction

W

*[Signature]*

County Local No. 45  
Mesa Verde

CLARENCE & CONSTANCE W. Local No. 20

*Francis Lucard*

Western District Council (No. 9)

Robert L. Williams  
Member, Local No. 8

~~File # 62-10789 SAC Los Angeles~~

Const  
R. G. Phillips

Turner Construction  
John Giannelli  
Gotham Destruction

11

Connolly V. D. Connolly  
Capt. U.S. Army

Joseph Burdick

Cal No. 197  
J. Edgar Hoover  
U.S. Dept. of Justice  
Washington, D.C. 20535

*[Signature]*

Local No. 908

Small Metal Workshop Local No. 137

Winston Churchill Ltd 11, 2

Managerial Form

Stratton Tone

le Unions: 807.3

Exp. Date: \_\_\_\_\_

Christine E. Evans

District of Columbia  
 John C. Calhoun  
 Feb 2, 1850  
 15, 15A, 15B, 15C, & 15D

Very Respectfully,  
[Signature]

Flattener Local No. 200 2-1-2  
P. J. Roberts

Membership Local #10

Dec. 1947 NFE

1. *Handwritten signature*

ALB  
CARL DWELL HUNGATE

11/11/11

157

The undersigned Local No. 11  
 General & Corporate Secretary

\_\_\_\_\_  
 and No. 42

Theodor Robert Sch...  
 Serial No. 40  
 12-11-11  
 16-1-11

W. H. Haggerty

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ST BOARD OF DIRECTORS *Chapman*

Solicitation and Contract Version - June 2016

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

**INFORMATION FOR BIDDERS**

**December 2013**

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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.

### 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. VENDEX Questionnaires

(A) Requirement: Pursuant to Administrative Code Section 6-116.2 and the PPB Rules, bidders may be obligated to complete and submit VENDEX Questionnaires. Generally, if this bid is \$100,000 or more, or if this bid when added to the sum total of all contracts, concessions and franchises the bidder has received from the City and any subcontracts received from City contractors over the past twelve months, equals or exceeds \$100,000, Vendex Questionnaires must be completed. If required, Vendex Questionnaires must be completed and submitted before any award of contract may be made or before approval is given for a proposed subcontractor. Non-compliance with these submission requirements may result in the disqualification of the bid, disapproval of a subcontractor, subsequent withdrawal of approval for the use of an approved subcontractor, or the cancellation of the contract after its award.

(B) Submission: Vendex Questionnaires must be submitted directly to the Mayor's Office of Contract Services, ATTN: Vendex, 253 Broadway, 9<sup>th</sup> Floor, New York, New York 10007. In addition, the bidder must submit a Confirmation of Vendex Compliance to the agency. A form for this confirmation is set forth in the Bid Booklet.

(C) Obtaining Forms: Vendex Questionnaires, as well as detailed instructions, may be obtained at [www.nyc.gov/vendex](http://www.nyc.gov/vendex). The bidder may also obtain Vendex forms and instructions by contacting the Agency Chief Contracting Officer or the contact person for this contract.

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)669-2797.

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. 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 202-512-1800; (2) through the Internet at <http://www.fms.treas.gov/c570/index.html>, and (3) through a computerized public bulletin board, which can be accessed by using your computer modem and dialing 202-874-6887.

(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 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 on page 2 of the Bid Booklet.

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. 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**

June 2015

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**THE DDC SAFETY REQUIREMENTS INCLUDE THE FOLLOWING SECTIONS:**

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

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## 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 jobsites must, at a minimum, comply with applicable federal, state and city laws, rules and regulations, including without limitation:

- ❑ U. S. Department of Labor 29 Code of Federal Regulations (CFR) Part 1926 and applicable Sub-parts of Part 1910 – U.S. Occupational Safety and Health Administration (OSHA); New York State Department of Labor Industrial Code Rule 23 – Protection in Construction, Demolition and Excavation;
- ❑ New York City Construction Codes, Title 28
- ❑ NYC Department of Transportation Title 34 Chapter 2 – Highway Rules
- ❑ New York State Department of Labor Industrial Code Rule 16 NYCRR Part 753
- ❑ Title 15 of the Rules of the City of New York, Chapter 13 Citywide Construction Dust Mitigation
- ❑ Manual on Uniform Traffic Control Devices (MUTCD)
- ❑ Title 15 of the Rules of the City of New York, Chapter 28 Citywide Construction Noise Mitigation

## 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 hazard, 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 shall mean the person delegated authority by the Commissioner to organize and supervise the procurement activity of subordinate Agency staff in conjunction with the 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.

**Construction Safety Auditor:** A representative of the QA&CS Construction Safety Unit 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 surveys, reviewing health and safety plans, reviewing construction permits, and rendering technical advice and assistance to DDC Resident Engineers and Project Managers.

**Construction Safety Unit:** A part of QA&CS within the Division of Program Management/ Safety & Site Support that assesses contractor safety on DDC jobsites and advises responsible parties of needed corrective actions.

**Construction Superintendent:** A representative of the contractor responsible for overseeing performance of the required construction work. This individual must engage in sound construction practices, and is responsible to maintain a safe work site. In the case of a project involving the demolition, alteration or new construction of buildings, the Construction Superintendent must be licensed by the NYC Department of Buildings.

**Contractor:** For purposes of these Safety Requirements, the term "Contractor" shall mean any person or entity that enters into a contract for the performance of construction work on a DDC project. The term "Contractor" shall 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 meetings, giving to all jobsite personnel by contractor, with the purpose of discussing project specific safety procedures for the scheduled construction work.

**Director - Quality Assurance and Construction Safety (QA&CS):** Responsible for the operations of the QACS Construction Safety Unit and the DDC Site Safety management programs.

**Job Hazard Analysis (JHA):** A process of identifying the major job steps and any potential site-specific hazards that may be present during construction and establishing the means and methods to eliminate or control those hazards.

**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 and trenching and shoring, 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 shall have completed an authorized 30 hour OSHA Construction Safety Course and other safety training applicable to Contractor's/subcontractor's project work. Except in instances where a dedicated Project Safety Manager is required, a Project Safety Representative may also function as a superintendent, foreman or crew leader on the Project, but must have sufficient experience and authority to undertake corrective actions and must qualify to be a competent person. No work is to be performed on site when a Project Safety Representative is not present.

**Project Safety Manager:** A dedicated, full-time project safety manager may be a contractual requirement on large projects or projects deemed by DDC to be particularly high risk. This would be in addition or in lieu of a Contractor's Project Safety Representative. This individual shall not have any other assigned duties. This individual shall have received, at a minimum an authorized 30 hour OSHA Construction Safety Course. Other examples of acceptable training are OSHA Safety and Health Standards for the Construction Industry training program (OSHA 510), Certified Safety Professional (CSP), Certified Industrial Hygienist (CIH) or a degree/certificate in a safety and health from a college-level curriculum.

A Project Safety Manager shall possess the additional training, years of experience, and skills necessary to thoroughly understand the health and safety hazards and controls for large construction projects, including the full scope of the specific Work.

**QA&CS – Quality Assurance and Construction Safety of the New York City Department of Design and Construction.**

**Resident Engineer (RE) / Construction Project Manager (CPM):** Representative of the Commissioner duly designated by the Commissioner to be his/her representative at the site of the work. (The RE/CPM may be a third-party consultant, including a Construction Management firm, retained by DDC)

**Safety Program:** Established by the Contractor that covers all operations of that Contractor and establishes the Contractor's overall safety policy, regulatory compliance plan and minimum safety standards. The Safety Program must be submitted prior to the commencement of work at the site and is subject to review and acceptance by the Construction Safety Unit.

**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 NYC Construction Codes – Title 28, the Contractor shall provide a Site Safety Manager with a Site Safety Manager License issued by the NYC Department of Building.

**Site Safety Plan:** A site-specific safety plan developed by the Contractor for a specific project. The Site Safety Plan must identify hazards associated with the project, and include specific safety procedures and training appropriate and

necessary to complete the work. The Site Safety Plan must be submitted prior to the commencement of work at the site and is subject to review and acceptance by the Construction Safety Unit.

**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 documented 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.

**Work:** The construction required by the 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.

#### IV. RESPONSIBILITIES

All persons who manage, perform, and provide support for construction projects shall 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. DDC or CM Resident Engineer / Construction Project Manager

- Monitors the issuance of safety- related permits, approvals and drawings and maintains copies on site.
- Monitors construction-related work activities to confirm that they are conducted in accordance with DDC policies and all applicable regulations that pertain to construction safety.
- Maintains documentation and periodically attends weekly safety meetings and daily safety job briefings.
- Notifies the Construction Safety Unit and the ACCO's Insurance and Risk Management Unit of project- related accidents and emergencies, as per DDC's Construction Safety Emergency and Accident Notification and Response Protocol.
- Gathers facts related to all accidents and prepares DDC Construction Accident Report.
- Notifies the Construction Safety Unit within two (2) hours of the start of an inspection by any outside regulatory agency personnel, including OSHA, NYC DOB or others and forwards a copy of the inspection report within three days of its receipt.
- Monitors the conditions at the site for conformance with the contractor's Site Safety Plan and DDC construction documents.
- Notifies the contractor and DDC in the event that any condition or activity exists that 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.
- Notifies DDC of any unsafe or unhealthy condition and directs the contractor to provide such labor, materials, equipment and supervision to abate such conditions.
- Escort and assist QA&CS Construction Safety Auditors during the field and record inspections.
- Reports emergency conditions to the Construction Safety Unit immediately.

##### B. Contractors

- Submit a completed Safety Questionnaire and other safety performance related documentation with its bid or as part of a pre-qualification package.
- Complete a written Job Hazard Analysis (JHA) that identifies safety hazards for project specific work tasks and hazard control methods. A written JHA shall be available at the site for reference and included in the Site Safety Plan submitted by the contractor.
- Submit a Site Safety Plan and Safety Program within 30 days from the Award Date or as otherwise directed. The Site Safety Plan and Safety Program are subject to review and acceptance by the Construction Safety Unit prior to the commencement of work at the site. The Site Safety Plan shall be revised and updated as necessary.

- Develop project specific safety procedures to protect general public during all construction activities for the duration of the project.
- 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 weekly safety meetings and daily job briefing sessions for the duration of the project. Documentation to be provided to the RE/CPM on a monthly basis.
- Name the Project Safety Representative and Project Safety Manager, if required. The Contractor will be required to identify the Project Safety Representative and Project Safety Manager in the Site Safety Plan. Resumes, outlining the qualification and experience for the Project Safety Representative and Project Safety Manager, shall be available upon request. DDC reserves the right to request that the Contractor replace any Project Safety Representative or Project Safety Manager for any reason at any time during the project.
- Name a Competent Person(s), The Contractor will be required to identify a Competent Person(s) in the Site Safety Plan.
- Comply with all mandated federal, state and local safety and health rules and regulations.
- Comply with all provisions of the Site Safety Plan.
- Conduct applicable safety training prior to the commencement of work at the site. All training records (OSHA 10-hour, flagger, scaffold, fall protection, confined space entry, etc.) shall be provided to the RE/CPM prior to mobilization, included in the Site Safety Plan, kept current during the course of the project, and available for review. Prior to performing any work on DDC project all employees shall have successfully completed, within the previous five calendar years, a 10 Hour OSHA construction safety course.
- As part of the Site Safety Plan, prepare a site specific programs and plans, such as MPT plan, steel erection plan, confined space program, fall protection plan, demolition plan, etc. (if not otherwise provided in the contract documents) and comply with all of its provisions.
- Conduct and document site-specific safety orientation for Contractor 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 and/or Project Safety Manager will conduct this training prior to mobilization and provide documentation to the RE/CPM.
- 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.).
- Report unsafe or unhealthy conditions to the RE/CPM as soon as practical, but no more than 24 hours after discovery, and take prompt actions to remove or abate such conditions.
- Report any accidents involving injuries to workers or the general public, as well as property damage, to the RE/CPM within one (1) hour.
- Following an accident, the Contractor shall not remove or alter any equipment, structure, material, or evidence related to the accident. 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.
- Notify the RE/CPM within one (1) hour of the start of an inspection by any outside regulatory agency personnel, including OSHA, NYC DOB or others.
- Maintain all records pertaining to all required compliance documents and accident and injury reports.
- Address DDC recommendations on safety, which shall 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 must 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 must 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 safety program and site safety plan submittals; etc.)
- Criteria 6: OSHA violation history for the last three (3) years;
- Criteria 7: Contractor shall 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 Construction Safety Unit 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. SAFETY PROGRAM AND SITE SAFETY PLAN

Within thirty (30) days from the Award Date, or as otherwise directed, the Contractor shall submit the following: (1) Safety Program, and (2) Site Safety Plan. The Safety Program shall set forth the Contractor's overall safety policy, regulatory compliance plan and minimum safety standards. The Site Safety Plan shall 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 Safety Program and the Site Safety Plan are subject to review and acceptance by the Construction Safety Unit prior to the commencement of work at the site. Failure by the Contractor to submit an acceptable Site Safety Plan and Safety Program shall be grounds for default.

**Safety Program:** Corporate Safety Program established by the Contractor that includes the Contractor's overall safety policy, regulatory compliance plan and basic safety procedures covering all aspects of construction operations, performed by the Contractor. The Safety Program shall be a written document with a separate section describing each element of the Safety Program. The Safety Program shall have at minimum the following elements applicable to the Contractor's operations:

- Responsibility and Organization – Contractor's company organization chart, including titles, names, contact information, roles and responsibilities for key personnel, etc.
- Safety Training Program – Contractor's corporate training program.
- Hazard Corrective Actions – Criteria for safety inspections, identification of safety non-compliances, implementation and verification of corrective actions, forms to document safety inspections results, etc.
- Accident/Exposure Investigation
- Recordkeeping and Reporting Injuries – Responsible staff; reporting and recording criteria; OSHA 300 and 300A form completion, etc.
- Fire Protection and Prevention Program
- Housekeeping
- Illumination
- Sanitation
- Personal Protective Equipment (PPE) – Company policy for the use of head protection, foot protection, hearing protection, eye and face protection, protective clothing, and any additional protective equipment based on work tasks; PPE inspection and replacement policy.
- Hazard Communication Program
- Employee Emergency Action Plan
- Protection of Underground Facilities and Utilities
- Ionizing/Nonionizing Radiation
- Material Handling, Storage, Use and Disposal
- Tools – Hand and Power
- Signs, Signals, and Barricades

- Scaffold – Local Law 52 requirements, installation, use, inspection, dismantling, training and general safety requirements.
- Welding and Cutting
- Electrical Safety
- Fall Protection
- Cranes, Derrick, Hoists, Elevators, Conveyors
- Excavation Safety
- Concrete and Masonry Construction
- Maintenance and Protection of Traffic
- Steel Erection
- Demolition
- Blasting and the Use of Explosives
- Stairways and Ladders
- Toxic and Hazardous Substances
- Alcohol and Drug Abuse Policy
- Rodents and Vermin
- Occupational Noise Exposure
- Confined Space Program – General confined Space Program: training requirements, confined space hazard evaluation procedure, atmospheric testing procedure, confined space classification, permit-required procedure, communication procedure, rescue procedure, forms, etc.
- Construction Vehicles/Heavy Equipment
- Dust Control Procedures

Site Safety Plan: The Site Safety Plan shall be a written document and shall apply to all project specific Contractor and subcontractor operations, and shall have at a minimum, the following elements with each element 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):

- Project Work Scope – Detailed information regarding work tasks that will be performed by contractor and subcontractors under the project.
- Responsibility and Organization – Contractor’s organization chart with responsible staff for the project, including titles, names, contact information, roles and responsibilities.
- 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.
- Job Hazard Analysis (JHA) – Project specific Job Hazard Analysis including work tasks, identified hazards, hazard control methods (administrative, engineering, PPE), contractor’s name, project id, location, name and signature of a certifying person, hazard assessment date.
- Protection of Public
- Hazard Corrective Actions – Responsible staff, forms, frequency of safety inspections and implementation of corrective actions.
- Accident/Exposure Investigation – Accident/incident notification procedure of DDC project staff. Project specific procedures for accident investigation and implementation of corrective actions.
- First Aid and Medical Attention – Responsible staff, location and inspection of First Aid kit, directions to local hospitals; emergency telephone numbers.
- Project Specific Fire Protection and Prevention Program.
- Project Specific Illumination Procedure.
- Project Specific Sanitation Procedure.
- Personal Protective Equipment (PPE)
- Hazard Communication Program – Responsible staff; training; SDS records, project specific list of chemical; location of the program and SDS records.
- 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.
- Employee Emergency Action Plan – Project specific: responsible staff, emergency alarm system, evacuation procedure, procedure to account for employees after evacuation, etc.
- Evacuation Plan – Project specific evacuation plan (drawing/scheme) with exists and evacuation routes.



- Protection of Underground Facilities and Utilities, including responsible staff.
- Ionizing/Nonionizing Radiation – Competent person, license and qualification requirements, type of radiation, employees exposure and protection, etc.
- Material Handling, Storage, Use and Disposal – Project specific information regarding material storage and disposal.
- Signs, Signals, and Barricades – Use of danger/warning signs, sidewalk closure, safety instruction signs, pedestrian fencing and barricades, etc.
- Scaffold – Project specific scaffold types, training, scaffold drawings, competent person, criteria for project specific scaffold, falling object protection.
- 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, FDNY certificate requirements.
- Fall Protection – Project specific information regarding selected fall protection systems, fall protection plan.
- 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.
- Excavation Safety – Competent person, project specific protective system.
- Maintenance and Protection of Traffic Plan – Project specific MPT plan, flagmen training.
- Steel Erection – Site specific erection plan, requirements for applicable written notifications, competent person.
- 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.
- Blasting and the Use of Explosives – Project specific safety procedures, warning signs, training/qualification, transportation, storage and use of explosives, inspection.
- Toxic and Hazardous Substances – Safety procedures for substances to be used on project.
- Noise Mitigation Plan – Completed project specific Noise Mitigation Plan.
- Confined Space Program – Project specific Confined Space Program, responsible staff, training records, equipment information, rescue procedure, list of project specific confined spaces, forms.
- Construction Vehicles/Heavy Equipment – Type of construction vehicles/heavy equipment to be used on site.
- Dust Mitigation Plan – Completed project specific Dust Mitigation Plan.

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 must conduct a site and task assessment JHA to identify the major job steps 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 shall be communicated to all contractor/subcontractor personnel on site.

The initial Job Hazard Assessment form shall be included in the contractor's Site Safety Plan and the current form shall be available at the construction site for reference.

Certain DDC programs, such as Job Order Contracting System (JOCS), may not necessarily require Site Safety Plans. The JOCS contractor shall submit a Safety Program. The Site Safety Plan requirement for the JOCS contractor will be determined by QA&CS based on a project work scope, construction activities and project location. In addition, certain DDC Operating Units may establish client-specific program or safety requirements. The contractor's Site Safety Plan must address such client-specific program or safety requirements.

## **VII. KICK-OFF MEETINGS/PRE-CONSTRUCTION AND SAFETY REVIEW**

RE/CPM shall invite QA&CS Construction Safety Unit to the construction kick-off meeting. A QA&CS representative will participate in this meeting with the Contractor and RE/CPM prior to the start of the project for the purpose of:

- A. Reviewing the safety issues detailed in the contract.
- B. Reviewing the Site Safety Plan.
- C. Reviewing any new issues or information that was not previously addressed.
- D. Discussing planned inspections and audits of the site by QA&CS 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 Construction Safety Unit or other designated DDC representative or Consultant during regular, unannounced inspections of the job site. Field Exit Conferences will be held with the RE/CPM, Contractor Project Safety Representatives.
- B. The RE/CPM will continually monitor the safety and environmental performance of the contractor's employees and work methods. Deficiencies shall be brought to the attention of the contractor's representative on site for immediate correction. The DDC representative will maintain a written record of these deficiencies and have these records available upon request. Any critical deficiencies shall be immediately reported to QA&CS phone# (718) 391-1624 or (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 – QA&CS, or his/her designee will meet with the Contractor's Project Safety Representative and or Project Safety Manager, the DDC Project Manager, the RE/CPM, 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 to occur with inadequate attention by the contractor, this shall, among other remedies available, be grounds for default.
- E. The contractor shall within 1 hour inform the RE/CPM/CM of all accidents/incidents 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/CPM shall notify the Construction Safety Unit as per DDC's Construction Safety Emergency and Accident Notification and Response Protocol and shall maintain a record of all contractor accidents/incidents for the project.
- F. The Construction Safety Unit shall be notified 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 shall be a reason to rate a Contractor unsatisfactory which may be reflected in the City's Vendex system and will be considered for future procurement actions as set forth in the City's Procurement Policy Board Rules.

# NOTICE TO BIDDERS

The City of New York has issued a new Standard Construction Contract. The new Contract, which is incorporated in this bid, is different from the 2013 version previously used by the City. Some of the significant changes are listed below. In addition, this March 2017 version incorporates the Insurance Rider (Articles 22.1.1(c) and 22.3.3), the Paid Sick Leave Law Contract Rider (Article 35.5), and the Hiring and Employment Rider: HireNYC and Reporting Requirements (Article 35.6). This notice is only a partial listing. Please refer to the Contract itself for a full understanding of the changes and the actual text of the changes that were made. The text of the revised Standard Construction Contract is the controlling document if there are any discrepancies between this notice and the Standard Construction Contract.

**Significant changes include the following:**

- **ARTICLE 11 - DAMAGES CAUSED BY DELAYS:** Article 11 no longer provides for agencies to make determinations on claims for damages for delay or make payments for those claims through a change order. Instead claims will be submitted to the Comptroller in accordance with the standards in the Contract. The revised Article 11 also sets forth additional detail of what delay costs are compensable and how they are to be calculated.
- **ARTICLE 12 - COORDINATION WITH OTHER CONTRACTORS:** The March 2017 version revises Article 12.3 concerning the Engineer's failure to issue directions to an Other Contractor.
- **ARTICLE 14 - COMPLETION AND FINAL ACCEPTANCE OF THE WORK:** The March 2017 version clarifies Article 14.2.2 concerning the dates to complete punch list work.
- **ARTICLE 30 - NOTICE AND DOCUMENTATION OF COSTS AND DAMAGES; PRODUCTION OF FINANCIAL RECORDS:** The March 2017 version clarifies the relationship between the requirements in Article 30.1 concerning when the contractor must submit notice and documentation of claims for delay damages, extra work, and other claims and the requirements that are set forth in Articles 11 and 27.
- **ARTICLE 56 - CLAIMS AND ACTIONS THEREON:** The March 2017 version revises Article 56.2.2 concerning the time to commence an action arising out of the Commissioner's exercise of his/her right to complete punch list or unsatisfactory work.
- **ARTICLE 78 - EXAMINATION AND VIEWING OF SITE, CONSIDERATION OF OTHER SOURCES OF INFORMATION AND CHANGED SITE CONDITIONS:** The March 2017 version adds a new Article 78 requiring pre-bid viewing of the site and allowing the contractor to obtain a change order for extra work due to changed subsurface conditions.

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**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](http://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](http://www.nyc.gov/pip).<sup>1</sup> 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

<sup>1</sup> 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](http://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](mailto: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 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.<sup>2</sup> 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").

<sup>2</sup> 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](http://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** and 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](http://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 pre-paid 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](http://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](http://www.nyc.gov/buycertified), by emailing DSBS at [buyer@sbs.nyc.gov](mailto: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](http://www.nyc.gov/getcertified), emailing [MWBE@sbs.nyc.gov](mailto: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](mailto: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.



Deputy  
↓

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: \_\_\_\_\_

*[Signature]*  
Deputy Commissioner

CONTRACTOR:

*Commerce Electrical Contracting Corporation*

By: \_\_\_\_\_

(Member of Firm or Officer of Corporation)

Title: \_\_\_\_\_

*President*

(Where Contractor is a Corporation, add):  
Attest:

\_\_\_\_\_  
Secretary

(Seal)

ACKNOWLEDGEMENT OF PRINCIPAL, IF A CORPORATION

State of New York County of Queens ss:

On this 29 day of MAY, 2018, before me personally came DIMITRIOS TOMBOS  
to me known who, being by me duly sworn did depose and say that he resides at GREAT NECK, NY  
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.

**BRENDA A. BARREIRO**  
Notary Public, State of New York  
No. 01BA6351073  
Qualified in Kings County  
Commission Expires Nov. 28, 2020

Brenda A Barreiro  
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

Deputy  
✓

ACKNOWLEDGEMENT BY COMMISSIONER

State of New York County of Queens ss:

On this 30<sup>th</sup> day of May, 2018, before me personally came Thomas Foley  
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.

Brenda A Barreiro  
Notary Public or Commissioner of Deeds

**BRENDA A. BARREIRO**  
Notary Public, State of New York  
No. 01BA6351073  
Qualified in Kings County  
Commission Expires Nov. 28, 2020

AUTHORITY

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

three million, three hundred and twelve thousand  
nine hundred ninety-seven

ORIGINAL AMOUNT  
\*If you wish to change the amount  
STOLICH and  
Dollars (\$ 3,312,997.00 )  
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.

  
Deputy 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)

**PERFORMANCE BOND #1**

**KNOW ALL PERSONS BY THESE PRESENTS:,**

That we, \_\_\_\_\_

Commerce Electrical Contracting Corp.

23-86 BQE WEST, STE 201, Astoria, NY 11103

hereinafter referred to as the "Principal,"  
and, \_\_\_\_\_

US Specialty Insurance Company

13403 Northwest Freeway, Houston, Texas 77040

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 \_\_\_\_\_

THREE MILLION THREE HUNDRED AND TWELVE THOUSAND NINE HUNDRED

AND NINETY-SEVEN

(\$ 3,312,997.00 ) 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

Replacement of generators at 2 NYPD Precincts - Manhattan.

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

(Seal) 24th day of May, 2018

(L.S.)  
Principal

(Seal) By: Plunkett Embury, Inc.

Surety  
US Specialty Insurance Company

(Seal) By: Thomas J. Keating  
Thomas J. Keating, Attorney-in-fact  
Surety

(Seal) By: \_\_\_\_\_  
Surety

(Seal) By: \_\_\_\_\_  
Surety

(Seal) By: \_\_\_\_\_  
Surety

By: \_\_\_\_\_

Bond Premium Rate \$25 Slide

Bond Premium Cost \$50,630.00

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 NY County of QUEENS ss:

On this 24 day of MAY, 20 18 before me personally came DIMITRIOS TAMBORIS,

to me known, who, being by me duly sworn did depose and say that he/she resides at 3 HAWES CT GREAT NECK

NY 11021; 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.

[Signature]  
Notary Public or Commissioner of Deeds.

Notary Public State of New York  
No. 01PE6041009  
Qualified in Kings County  
Commission Expires 5/01/20 22

**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 depose 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

103

STANDARD CONSTRUCTION CONTRACT  
March 2017

**Performance Bond #2 (Pages 104 to 107): Use if the total contract price is more than \$5 Million.**

PERFORMANCE BOND #2 (Page 1)

**PERFORMANCE BOND #2**

**KNOW ALL PERSONS BY THESE PRESENTS:,**

That we, \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

hereinafter referred to as the "Principal,"

and, \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(\$ \_\_\_\_\_) 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 \_\_\_\_\_  
\_\_\_\_\_

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 #2 (Pages 104 to 107): Use if the total contract price is more than \$5 Million.**

PERFORMANCE BOND #2 (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 either (1) pay the full amount of the above penal sum in complete discharge and exoneration of this bond and of all the liabilities of the Surety relating to this bond, or (2) fully perform and complete the Work to be performed under the Contract, pursuant to the terms, conditions, and covenants thereof. The Surety (Sureties) further agrees, at its option, either to tender the penal sum 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 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. 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 commence and to complete all Work as provided herein.

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 by any assignment, subletting or other transfer thereof or of any Work to be performed 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, 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 by or in relation to said Principal.

**Performance Bond #2 (Pages 104 to 107): Use if the total contract price is more than \$5 Million.**

PERFORMANCE BOND #2 (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

\_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_\_\_\_ .  
(Seal)

\_\_\_\_\_  
Principal (L.S.)

By: \_\_\_\_\_  
(Seal) Surety

By: \_\_\_\_\_  
(Seal) Surety

By: \_\_\_\_\_  
(Seal) Surety

By: \_\_\_\_\_  
(Seal) Surety

By: \_\_\_\_\_  
(Seal) Surety

By: \_\_\_\_\_

Bond Premium Rate \_\_\_\_\_

Bond Premium Cost \_\_\_\_\_

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.

**ACKNOWLEDGMENT OF PRINCIPAL IF A CORPORATION**

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 resides  
at \_\_\_\_\_

\_\_\_\_\_ ; that he/she is the \_\_\_\_\_  
of the corporation described in and which executed the foregoing instrument; 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.

**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 depose 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.

**Payment Bond (Pages 108 to 111):** Use for any contract for which a Payment Bond is required.

PAYMENT BOND (Page 1)

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS, That we, \_\_\_\_\_

Commerce Electrical Contracting Corp.

23-86 BQE WEST, STE 201

Astoria, NY 11103

hereinafter referred to as the "Principal", and \_\_\_\_\_

US Specialty Insurance Company

13403 Northwest Freeway

Houston, Texas 77040

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

THREE MILLION THREE HUNDRED AND TWELVE THOUSAND NINE HUNDRED

AND NINETY-SEVEN

(\$ 3,312,997.00) 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

Replacement of generators at 2 NYPD Precincts - Manhattan

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 24th day of May, 2018.

(Seal)

\_\_\_\_\_  
Principal (L.S.)

By: DIMITRIOS TOMBAS, PRES.

(Seal)

\_\_\_\_\_  
US Specialty Insurance Company  
Surety

By: Thomas J Keating  
Thomas J Keating, 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 NY County of QUEENS ss:

On this 24 day of MAY, 2018, before me personally came DIMITRIOS TOMBOS to me known, who, being by me duly sworn did depose and say that he resides at 3 HANUS CT GACATINCEM NY 11221 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.

*ROSEMARY E. PETERSON*  
Notary Public State of New York

No. 01PE6041009

Qualified in Kings County

Commission Expires 5/01/20 22

*Rosemary Peterson*  
Notary Public or Commissioner of Deeds

**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.

**POWER OF ATTORNEY**  
**AMERICAN CONTRACTORS INDEMNITY COMPANY    TEXAS BONDING COMPANY**  
**UNITED STATES SURETY COMPANY    U.S. SPECIALTY INSURANCE COMPANY**

KNOW ALL MEN BY THESE PRESENTS: That American Contractors Indemnity Company, a California corporation, Texas Bonding Company, an assumed name of American Contractors Indemnity Company, United States Surety Company, a Maryland corporation and U.S. Specialty Insurance Company, a Texas corporation (collectively, the "Companies"), do by these presents make, constitute and appoint:

**Thomas J. Keating**

its true and lawful Attorney(s)-in-fact, each in their separate capacity if more than one is named above, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver any and all bonds, recognizances, undertakings or other instruments or contracts of suretyship to include riders, amendments, and consents of surety, providing the bond penalty does not exceed \*\*\*\*\*Unlimited\*\*\*\*\* Dollars (\$ \*\*\*unlimited\*\*\*).

This Power of Attorney shall expire without further action on November 3, 2019. This Power of Attorney is granted under and by authority of the following resolutions adopted by the Boards of Directors of the Companies:

*Be it Resolved*, that the President, any Vice-President, any Assistant Vice-President, any Secretary or any Assistant Secretary shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

*Attorney-in-Fact* may be given full power and authority for and in the name of and on behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements or indemnity and other conditional or obligatory undertakings, including any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts, and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-in-Fact shall be binding upon the Company as if signed by the President and sealed and effected by the Corporate Secretary.

*Be it Resolved*, that the signature of any authorized officer and seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signature or facsimile seal, shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached.

IN WITNESS WHEREOF, The Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 1st day of November, 2016.

**AMERICAN CONTRACTORS INDEMNITY COMPANY    TEXAS BONDING COMPANY**  
**UNITED STATES SURETY COMPANY    U.S. SPECIALTY INSURANCE COMPANY**

Corporate Seals:



By:

  
**Daniel P. Aguilar, Vice President**

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California  
County of Los Angeles    SS:

On this 1st day of November, 2016, before me, Sabina Morgenstein, a notary public, personally appeared Daniel P. Aguilar, Vice President of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.  
WITNESS my hand and official seal.

Signature



(Seal)



I, Kio Lo, Assistant Secretary of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Companies, which is still in full force and effect; furthermore, the resolutions of the Boards of Directors, set out in the Power of Attorney are in full force and effect.

In Witness Whereof, I have hereunto set my hand and affixed the seals of said Companies at Los Angeles, California this 24th day of May, 2018.

Corporate Seals

Bond No. 1001080684  
Agency No. 12307



  
**Kio Lo, Assistant Secretary**

**Kan't Kopy® K1  
Security Paper**

- Hidden Pantograph
- Color Match
- Artificial Watermark
- Anti-Copy Coin Rub
- Erasure Protection
- Security Features Box
- Microprint Protection
- Acid Free

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- Color Match
- Artificial Watermark
- Anti-Copy Coin Rub
- Erasure Protection
- Security Features Box
- Microprint Protection
- Acid Free

**U.S. SPECIALTY INSURANCE COMPANY**  
**STATUTORY STATEMENT OF ADMITTED ASSETS,**  
**LIABILITIES, CAPITAL AND SURPLUS (1)**  
December 31, 2017

**Admitted Assets**

Investments:  
Fixed Maturities, at amortized cost  
Preferred Stocks  
Common stocks  
Mortgage loans on real estate - first liens  
Mortgage loans on real estate - other than first liens  
Cash and short term investments  
Receivable for securities  
**Total cash and invested assets:**

1,528,865,227  
7,798,254  
44,438,676  
103,264,222  
3,462,184  
51,024,962  
766,089  
**1,737,619,614**

**Liabilities and Capital and Surplus**

Liabilities:

Unpaid loss and loss adjustment expense  
Reinsurance payable on paid losses and loss adjustment expenses  
Commission payable  
Accrued expenses  
Taxes, licenses, and fees  
Current federal income taxes  
Unearned premiums  
Advance premium  
Dividends to policyholders  
Ceded reinsurance balance payable  
Funds held under reinsurance treaties  
Amounts withheld or retained for others  
Provision for reinsurance  
Payable to parent, subsidiaries and affiliates  
Payable for securities

897,599,908  
2,826,879  
7,653,663  
5,621,803  
1,868,655  
3,339,563  
274,486,443  
13,852,268  
240,761  
51,598,226  
10,111,505  
862  
3,961,593  
14,531,301  
13,559,000  
**1,301,352,430**

**Total liabilities**

Investment income due and accrued  
Premium receivable  
Recoverable from reinsurers  
Net deferred tax asset  
Receivable from parent, subsidiaries and affiliates

17,430,563  
77,172,030  
34,681,941  
18,690,943  
2,801,594  
**150,777,071**

**Total admitted assets**

**1,888,396,685**

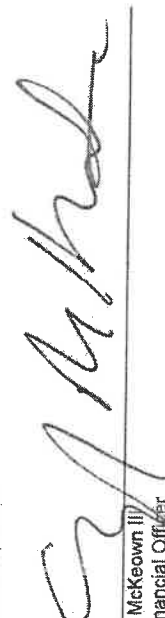
**Total liabilities and capital and surplus**

**1,888,396,685**

(1) - In accordance with the statutory financial statements as filed on March 1, 2018.

I, Cave J. McKeown III, Chief Financial Officer of U.S. Specialty Insurance Company, hereby certify that to the best of my knowledge and belief, the foregoing is a full and true Statutory Statement of Admitted Assets, Liabilities and Capital and Surplus of the Company as of December 31, 2017, prepared in conformity with accounting practices prescribed or permitted by the Texas Department of Insurance. The foregoing statement should not be taken as a complete statement of financial condition of the Company. Such a statement is available upon written request at the Company's home office located at 13403 Northwest Freeway, Houston, Texas 77040.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Corporation at Houston, Texas.

  
Cave J. McKeown III  
Chief Financial Officer

**State of New York**

**DEPARTMENT OF FINANCIAL SERVICES**

**WHEREAS IT APPEARS THAT**

**U.S. Specialty Insurance Company**

**Home Office Address**                      Houston, Texas

**Organized under the Laws of**              Texas

**has complied with the necessary requirements of or pursuant to law, it is hereby**

**licensed to do within this State the business of**

accident and health, fire, miscellaneous property, water damage, burglary and theft, glass, boiler and machinery, elevator, animal, collision, personal injury liability, property damage liability, workers' compensation and employers' liability, fidelity and surety, credit, motor vehicle and aircraft physical damage, marine and inland marine, marine protection and indemnity, residual value, credit unemployment, gap, prize indemnification and legal services insurance, as specified in paragraph(s) 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 24, 26, 27 and 29 of Section 1113(a) of the New York Insurance Law and also such workers' compensation insurance as may be incident to coverages contemplated under paragraphs 20 and 21 of Section 1113(a), including insurances described in the Longshoremen's and Harbor Workers' Compensation Act (Public Law No. 803, 69 Cong. as amended; 33 USC Section 901 et seq. as amended) to the extent permitted by certified copy of its charter document on file in this Department until July 1, 2018.



**In Witness Whereof, I have hereunto set  
my hand and affixed the official seal of this  
Department at the City of Albany, New York, this  
1st day of July, 2017**

Maria T. Vullo  
Superintendent

By

*Jacqueline Catalfamo*

Jacqueline Catalfamo  
Special Deputy Superintendent



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)  
05/29/2018

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).

<b>PRODUCER</b> R & W Brokerage, Inc. 8 Forest Avenue  Lynbrook NY 11563		<b>CONTACT NAME:</b> William Anthony, Jr. <b>PHONE (A/C No. Ext):</b> (516) 599-3322 <b>FAX (A/C No.):</b> (516) 599-4377 <b>E-MAIL ADDRESS:</b> wanthonyjr@rwbrokerage.com	
<b>INSURED</b> Commerce Electrical Contracting Corp 2386 Brooklyn Queens Expy W.  Astoria NY 11103-1023		<b>INSURER(S) AFFORDING COVERAGE</b> <b>INSURER A:</b> Merchants Mutual Ins. Co <b>INSURER B:</b> <b>INSURER C:</b> <b>INSURER D:</b> <b>INSURER E:</b> <b>INSURER F:</b>	
		<b>NAIC #</b> 23329	

## COVERAGES

**CERTIFICATE NUMBER:** 18/19 Master

**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"/> <b>COMMERCIAL GENERAL LIABILITY</b> <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liability  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC <input type="checkbox"/> OTHER:	Y		CMP9154005	01/13/2018	01/13/2019	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000 MED EXP (Any one person) \$ 5,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$			
	<input type="checkbox"/> <b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input checked="" type="checkbox"/> HIRED AUTOS ONLY <input checked="" type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY						CAP1062222	01/13/2018	01/13/2019	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ PIP-Basic \$ 50,000
	<input checked="" type="checkbox"/> <b>UMBRELLA LIAB</b> <input checked="" type="checkbox"/> EXCESS LIAB DED <input type="checkbox"/> RETENTION \$ 10,000						CUP9146462	01/13/2018	01/13/2019	EACH OCCURRENCE \$ 2,000,000 AGGREGATE \$ 2,000,000 \$
	<input type="checkbox"/> <b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) <input type="checkbox"/> If yes, describe under DESCRIPTION OF OPERATIONS below						N/A			PER STATUTE <input type="checkbox"/> OTH-ER <input type="checkbox"/> E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Proof of Insurance  
RE: FMS ID: PO79GENER  
E-Pin: 85017B0108001  
DDC PIN: 8502017PD0006C  
Replacement of Generators at 2 NYPD Precincts- Manhattan  
City of New York including its officials and employees are named as additional insureds.

## CERTIFICATE HOLDER

## CANCELLATION

NYC Department of Design and Construction 30-30 Thomson Avenue 1st Floor 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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# New York State Insurance Fund

Workers' Compensation & Disability Benefits Specialists Since 1914

199 CHURCH STREET, NEW YORK, N.Y. 10007-1100

## CERTIFICATE OF WORKERS' COMPENSATION INSURANCE

\*\*\*\*\* 205890295  
R & W BROKERAGE INC  
8 FOREST AVENUE  
LYNBROOK NY 11563



SCAN TO VALIDATE  
AND SUBSCRIBE

<b>POLICYHOLDER</b> COMMERCE ELECTRICAL CONTRACTING CORP. 2386 BQE WEST STE 201 ASTORIA NY 11103		<b>CERTIFICATE HOLDER</b> NYC DEPARTMENT OF DESIGN AND CONSTRUCTION 30-30 THOMSON AVE., 1ST FLOOR LONG ISLAND CITY NY 11101	
<b>POLICY NUMBER</b> Q1446 028-1	<b>CERTIFICATE NUMBER</b> 725330	<b>POLICY PERIOD</b> 02/06/2018 TO 02/06/2019	<b>DATE</b> 5/29/2018

THIS IS TO CERTIFY THAT THE POLICYHOLDER NAMED ABOVE IS INSURED WITH THE NEW YORK STATE INSURANCE FUND UNDER POLICY NO. 1446 028-1, COVERING THE ENTIRE OBLIGATION OF THIS POLICYHOLDER FOR WORKERS' COMPENSATION UNDER THE NEW YORK WORKERS' COMPENSATION LAW WITH RESPECT TO ALL OPERATIONS IN THE STATE OF NEW YORK, EXCEPT AS INDICATED BELOW, AND, WITH RESPECT TO OPERATIONS OUTSIDE OF NEW YORK, TO THE POLICYHOLDER'S REGULAR NEW YORK STATE EMPLOYEES ONLY.

IF YOU WISH TO RECEIVE NOTIFICATIONS REGARDING SAID POLICY, INCLUDING ANY NOTIFICATION OF CANCELLATIONS, OR TO VALIDATE THIS CERTIFICATE, VISIT OUR WEBSITE AT [HTTPS://WWW.NYSIF.COM/CERT/CERTVAL.ASP](https://www.nysif.com/cert/certval.asp). THE NEW YORK STATE INSURANCE FUND IS NOT LIABLE IN THE EVENT OF FAILURE TO GIVE SUCH NOTIFICATIONS.

THIS CERTIFICATE DOES NOT APPLY TO THOSE JOB SITES WHICH ARE COVERED BY OTHER INSURANCE AND ARE SPECIFICALLY EXCLUDED BY ENDORSEMENT.

THE POLICY INCLUDES A WAIVER OF SUBROGATION ENDORSEMENT UNDER WHICH NYSIF AGREES TO WAIVE ITS RIGHT OF SUBROGATION TO BRING AN ACTION AGAINST THE CERTIFICATE HOLDER TO RECOVER AMOUNTS WE PAID IN WORKERS' COMPENSATION AND/OR MEDICAL BENEFITS TO OR ON BEHALF OF AN EMPLOYEE OF OUR INSURED IN THE EVENT THAT, PRIOR TO THE DATE OF THE ACCIDENT, THE CERTIFICATE HOLDER HAS ENTERED INTO A WRITTEN CONTRACT WITH OUR INSURED THAT REQUIRES THAT SUCH RIGHT OF SUBROGATION BE WAIVED.

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS NOR INSURANCE COVERAGE UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICY.

NEW YORK STATE INSURANCE FUND

DIRECTOR, INSURANCE FUND UNDERWRITING

VALIDATION NUMBER: 278984136







**CERTIFICATE OF INSURANCE COVERAGE**  
**DISABILITY AND PAID FAMILY LEAVE BENEFITS LAW**

**PART 1. To be completed by Disability and Paid Family Leave Benefits Carrier or Licensed Insurance Agent of that Carrier**

1a. Legal Name & Address of Insured (use street address only) COMMERCE ELECTRICAL CONTRACTING CORP. 23-86 BQE WEST, SUITE 201 ASTORIA, NY 11103  Work Location of Insured (Only required if coverage is specifically limited to certain locations in New York State, i.e., Wrap-Up Policy) REPLACEMENT OF GENERATOR AT TWO NYPD PRENCICTS M FMS ID PO79GENER PIN 8502017PD0006C	1b. Business Telephone Number of Insured  718-233-4955  1c. Federal Employer Identification Number of Insured or Social Security Number  20-5890295
2. Name and Address of Entity Requesting Proof of Coverage (Entity Being Listed as the Certificate Holder) NYC DEPT. OF DESIGN AND CONSTRUCTION 30-30 THOMSON AVE LIC, NY 11101	3a. Name of Insurance Carrier Standard Security Life Insurance Company of New York  3b. Policy Number of Entity Listed in Box "1a" 62780-37  3c. Policy effective period 8/18/2011 to 5/28/2019

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 5/29/2018

By

(Signature of insurance carrier's authorized representative or NYS Licensed Insurance Agent of that insurance carrier)

Telephone Number (212) 355-4141

Name and Title SUPERVISOR-DBL/POLICY SERVICES

**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 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 4C or 5B of Part 1 has 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 with respect to all of his/her 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.





## Additional Instructions for Form DB-120.1

By signing this form, the insurance carrier identified in Box 3 on this form is certifying that it is insuring the business referenced in box "1a" for disability and/or paid family leave benefits under the New York State Disability and Paid Family Leave Benefits Law. The Insurance Carrier or its licensed agent will send this Certificate of Insurance to the entity listed as the certificate holder in Box 2.

The insurance carrier must notify the above certificate holder and the Workers' Compensation Board within 10 days IF a policy is cancelled due to nonpayment of premiums or within 30 days IF there are reasons other than nonpayment of premiums that cancel the policy or eliminate the insured from coverage indicated on this Certificate. (These notices may be sent by regular mail.) Otherwise, this Certificate is valid for one year after this form is approved by the insurance carrier or its licensed agent, or until the policy expiration date listed in Box 3c, whichever is earlier

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 Disability and/or Paid Family Leave Benefits contract of insurance only while the underlying policy is in effect.

**Please Note: Upon the cancellation of the disability and/or paid family leave benefits 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 NYS Disability and/or Paid Family Leave Benefits Coverage or other authorized proof that the business is complying with the mandatory coverage requirements of the New York State Disability and Paid Family Leave Benefits Law.**

## DISABILITY AND PAID FAMILY LEAVE BENEFITS LAW

### §220. Subd. 8

(a) The head of a state or municipal department, board, commission or office authorized or required by law to issue any permit for or in connection with any work involving the employment of employees in employment as defined in this article, and notwithstanding any general or special statute requiring or authorizing the issue of such permits, shall not issue such permit unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chair, that the payment of disability benefits and after January first, two thousand and twenty-one, the payment of family leave benefits for all employees has been secured as provided by this article. Nothing herein, however, shall be construed as creating any liability on the part of such state or municipal department, board, commission or office to pay any disability benefits to any such employee if so employed.

(b) The head of a state or municipal department, board, commission or office authorized or required by law to enter into any contract for or in connection with any work involving the employment of employees in employment as defined in this article and notwithstanding any general or special statute requiring or authorizing any such contract, shall not enter into any such contract unless proof duly subscribed by an insurance carrier is produced in a form satisfactory to the chair, that the payment of disability benefits and after January first, two thousand eighteen, the payment of family leave benefits for all employees has been secured as provided by this article.

## **OFFICE OF THE COMPTROLLER**

### **CITY OF NEW YORK**

## **220 APPRENTICESHIP PREVAILING WAGE SCHEDULE**

### **APPENDIX**

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 employed on a public work project.

Any employee listed on a payroll at an apprentice wage rate, who is not registered as above, shall be paid the journey person wage rate for the classification of work he 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.

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## **ASBESTOS HANDLER**

(Ratio of Apprentice Journeyperson: 1 to 1, 1 to 3)

### **Asbestos Handler (First 1000 Hours)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 78% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$14.25

### **Asbestos Handler (Second 1000 Hours)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 80% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$14.25

### **Asbestos Handler (Third 1000 Hours)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 83% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$14.25

### **Asbestos Handler (Fourth 1000 Hours)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 89% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$14.25

(Local #78)

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## **BOILERMAKER**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

### **Boilermaker (First Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 65% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$30.84

Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: \$31.26

### **Boilermaker (Second Year: 1st Six Months)**

Effective Period: 7/1/2017 - 6/30/2018

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Wage Rate Per Hour: 70% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour: \$32.57  
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: \$33.02

**Boilermaker (Second Year: 2nd Six Months)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 75% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour: \$34.29  
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: \$34.78

**Boilermaker (Third Year: 1st Six Months)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 80% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour: \$36.03  
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: \$36.56

**Boilermaker (Third Year: 2nd Six Months)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 85% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour: \$37.76  
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: \$38.32

**Boilermaker (Fourth Year: 1st Six Months)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 90% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour: \$39.51  
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: \$40.09

**Boilermaker (Fourth Year: 2nd Six Months)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 95% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour: \$41.22  
Effective 1/1/2018 - Supplemental Benefit Rate Per Hour: \$41.84

(Local #5)

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**BRICKLAYER**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

**Bricklayer (First 750 Hours)**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
\$220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 50% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour: \$18.80

**Bricklayer (Second 750 Hours)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 60% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour: \$18.80

**Bricklayer (Third 750 Hours)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 70% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour: \$18.80

**Bricklayer (Fourth 750 Hours)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 80% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour: \$18.80

**Bricklayer (Fifth 750 Hours)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 90% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour: \$18.80

**Bricklayer (Sixth 750 Hours)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 95% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour: \$18.80

(Bricklayer District Council)

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**CARPENTER**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

**Carpenter (First Year)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 40% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour For Building Apprentice: \$31.34



OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
\$220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Supplemental Benefit Rate Per Hour For Heavy Apprentice: \$33.03

**Carpenter (Second Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 50% of Journeyperson's rate

Supplemental Benefit Rate Per Hour For Building Apprentice: \$31.34

Supplemental Benefit Rate Per Hour For Heavy Apprentice: \$33.03

**Carpenter (Third Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 65% of Journeyperson's rate

Supplemental Benefit Rate Per Hour For Building Apprentice: \$31.34

Supplemental Benefit Rate Per Hour For Heavy Apprentice: \$33.03

**Carpenter (Fourth Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 80% of Journeyperson's rate

Supplemental Benefit Rate Per Hour For Building Apprentice: \$31.34

Supplemental Benefit Rate Per Hour For Heavy Apprentice: \$33.03

(Carpenters District Council)

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**CARPENTER - HIGH RISE CONCRETE FORMS**  
(Ratio of Apprentice to Journeyperson: 1 to 1, 2 to 5)

**Carpenter - High Rise (First Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$16.86

Supplemental Benefit Rate per Hour: \$16.20

**Carpenter - High Rise (Second Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$23.16

Supplemental Benefit Rate per Hour: \$16.33

**Carpenter - High Rise (Third Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$29.61

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Supplemental Benefit Rate per Hour: \$16.46

**Carpenter - High Rise (Fourth Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$37.07

Supplemental Benefit Rate per Hour: \$16.61

(Carpenters District Council)

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**CEMENT MASON**

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)

**Cement Mason (First Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 50% of Journeyman's Rate

**Cement Mason (Second Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 60% of Journeyman's Rate

**Cement Mason (Third Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 70% of Journeyman's Rate

(Local #780)

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**CEMENT AND CONCRETE WORKER**

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

**Cement & Concrete Worker (First 1333 hours)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 50% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$17.75

**Cement & Concrete Worker (Second 1333 hours)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 65% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour: \$23.03

**Cement & Concrete Worker (Last 1334 hours)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 80% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour: \$24.30

**Cement & Concrete Worker (Hired after 2/6/2016 - First 1334 hours)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: \$16.96  
Supplemental Benefit Rate Per Hour: \$11.80

**Cement & Concrete Worker (Hired after 2/6/2016 - Second 1334 hours)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: \$22.08  
Supplemental Benefit Rate Per Hour: \$16.49

**Cement & Concrete Worker (Hired after 2/6/2016 - Last 1334 hours)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: \$27.20  
Supplemental Benefit Rate Per Hour: \$17.33

(Cement Concrete Workers District Council)

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**DERRICKPERSON & RIGGER (STONE)**  
**(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)**

**Derrickperson & Rigger (stone) - First Year**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 50% of Journeyperson's rate  
Supplemental Benefit Rate Per Hour: 50% of Journeyperson's rate

**Derrickperson & Rigger (stone) - Second Year: 1st Six Months**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 70% of Journeyperson's rate

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

**Derrickperson & Rigger (stone) - Second Year: 2nd Six Months**

Effective Period: 7/1/2017 - 6/30/2018

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: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 90% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

(Local #197)

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**DOCKBUILDER/PILE DRIVER**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

**Dockbuilder/Pile Driver (First Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 40% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$33.03

**Dockbuilder/Pile Driver (Second Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 50% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$33.03

**Dockbuilder/Pile Driver (Third Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 65% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$33.03

**Dockbuilder/Pile Driver (Fourth Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 80% of Journeyperson's rate

Supplemental Benefit Rate Per Hour: \$33.03

(Carpenters District Council)

## **ELECTRICIAN**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

### **Electrician (First Term: 0-6 Months)**

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$14.00**

Supplemental Benefit Rate per Hour: **\$12.37**

Overtime Supplemental Rate Per Hour: **\$13.29**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$14.50**

Supplemental Benefit Rate per Hour: **\$12.63**

Overtime Supplemental Rate Per Hour: **\$13.58**

### **Electrician (First Term: 7-12 Months)**

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$15.00**

Supplemental Benefit Rate per Hour: **\$12.88**

Overtime Supplemental Rate Per Hour: **\$13.87**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$15.50**

Supplemental Benefit Rate per Hour: **\$13.14**

Overtime Supplemental Rate Per Hour: **\$14.16**

### **Electrician (Second Term: 0-6 Months)**

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$16.00**

Supplemental Benefit Rate per Hour: **\$13.39**

Overtime Supplemental Rate Per Hour: **\$14.44**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$16.50**

Supplemental Benefit Rate per Hour: **\$13.64**

Overtime Supplemental Rate Per Hour: **\$14.73**

### **Electrician (Second Term: 7-12 Months)**

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$17.00**

Supplemental Benefit Rate per Hour: **\$13.90**

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Overtime Supplemental Rate Per Hour: \$15.02

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: \$17.50

Supplemental Benefit Rate per Hour: \$14.15

Overtime Supplemental Rate Per Hour: \$15.31

**Electrician (Third Term: 0-6 Months)**

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: \$18.00

Supplemental Benefit Rate per Hour: \$14.41

Overtime Supplemental Rate Per Hour: \$15.59

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: \$18.50

Supplemental Benefit Rate per Hour: \$14.66

Overtime Supplemental Rate Per Hour: \$15.88

**Electrician (Third Term: 7-12 Months)**

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: \$19.00

Supplemental Benefit Rate per Hour: \$14.92

Overtime Supplemental Rate Per Hour: \$16.17

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: \$19.50

Supplemental Benefit Rate per Hour: \$15.17

Overtime Supplemental Rate Per Hour: \$16.45

**Electrician (Fourth Term: 0-6 Months)**

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: \$20.00

Supplemental Benefit Rate per Hour: \$15.43

Overtime Supplemental Rate Per Hour: \$16.74

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: \$20.50

Supplemental Benefit Rate per Hour: \$15.68

Overtime Supplemental Rate Per Hour: \$17.03

**Electrician (Fourth Term: 7-12 Months)**

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: \$22.00

Supplemental Benefit Rate per Hour: \$16.44

Overtime Supplemental Rate Per Hour: \$17.89

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Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$22.50**

Supplemental Benefit Rate per Hour: **\$16.70**

Overtime Supplemental Rate Per Hour: **\$18.18**

**Electrician (Fifth Term: 0-12 Months)**

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$24.00**

Supplemental Benefit Rate per Hour: **\$19.80**

Overtime Supplemental Rate Per Hour: **\$21.30**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$24.50**

Supplemental Benefit Rate per Hour: **\$20.30**

Overtime Supplemental Rate Per Hour: **\$21.84**

**Electrician (Fifth Term: 13-18 Months)**

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$28.50**

Supplemental Benefit Rate per Hour: **\$22.10**

Overtime Supplemental Rate Per Hour: **\$23.89**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$29.00**

Supplemental Benefit Rate per Hour: **\$22.65**

Overtime Supplemental Rate Per Hour: **\$24.47**

**Overtime Description**

Overtime Wage paid at time and one half the regular rate

(Local #3)

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**ELEVATOR CONSTRUCTOR**

**(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)**

**Elevator (Constructor) - First Year**

Effective Period: 7/1/2017 - 3/16/2018

Wage Rate Per Hour: 50% of Journeyperson's rate

Supplemental Rate Per Hour: **\$29.88**

Effective Period: 3/17/2018 - 6/30/2018

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Wage Rate Per Hour: 50% of Journeyperson's rate  
Supplemental Rate Per Hour: \$31.35

**Elevator (Constructor) - Second Year**

Effective Period: 7/1/2017 - 3/16/2018  
Wage Rate Per Hour: 55% of Journeyperson's rate  
Supplemental Rate Per Hour: \$30.31

Effective Period: 3/17/2018 - 6/30/2018  
Wage Rate Per Hour: 55% of Journeyperson's rate  
Supplemental Rate Per Hour: \$31.80

**Elevator (Constructor) - Third Year**

Effective Period: 7/1/2017 - 3/16/2018  
Wage Rate Per Hour: 65% of Journeyperson's rate  
Supplemental Rate Per Hour: \$31.19

Effective Period: 3/17/2018 - 6/30/2018  
Wage Rate Per Hour: 65% of Journeyperson's rate  
Supplemental Rate Per Hour: \$32.70

**Elevator (Constructor) - Fourth Year**

Effective Period: 7/1/2017 - 3/16/2018  
Wage Rate Per Hour: 75% of Journeyperson's rate  
Supplemental Rate Per Hour: \$32.07

Effective Period: 3/17/2018 - 6/30/2018  
Wage Rate Per Hour: 75% of Journeyperson's rate  
Supplemental Rate Per Hour: \$33.60

(Local #1)

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**ELEVATOR REPAIR & MAINTENANCE**  
**(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)**

**Elevator Service/Modernization Mechanic (First Year)**

Effective Period: 7/1/2017 - 3/16/2018  
Wage Rate Per Hour: 50% of Journeyperson's rate  
Supplemental Benefit Per Hour: \$29.80

Effective Period: 3/17/2018 - 6/30/2018  
Wage Rate Per Hour: 50% of Journeyperson's rate



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Supplemental Benefit Per Hour: \$31.28

**Elevator Service/Modernization Mechanic (Second Year)**

Effective Period: 7/1/2017 - 3/16/2018

Wage Rate Per Hour: 55% of Journeyman's rate

Supplemental Benefit Per Hour: \$30.23

Effective Period: 3/17/2018 - 6/30/2018

Wage Rate Per Hour: 55% of Journeyman's rate

Supplemental Benefit Per Hour: \$31.72

**Elevator Service/Modernization Mechanic (Third Year)**

Effective Period: 7/1/2017 - 3/16/2018

Wage Rate Per Hour: 65% of Journeyman's rate

Supplemental Benefit Per Hour: \$31.09

Effective Period: 3/17/2018 - 6/30/2018

Wage Rate Per Hour: 65% of Journeyman's rate

Supplemental Benefit Per Hour: \$32.60

**Elevator Service/Modernization Mechanic (Fourth Year)**

Effective Period: 7/1/2017 - 3/16/2018

Wage Rate Per Hour: 75% of Journeyman's rate

Supplemental Benefit Per Hour: \$31.95

Effective Period: 3/17/2018 - 6/30/2018

Wage Rate Per Hour: 75% of Journeyman's rate

Supplemental Benefit Per Hour: \$33.49

(Local #1)

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**ENGINEER**

**(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 5)**

**Engineer - First Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$24.77

Supplemental Benefit Rate per Hour: \$24.62

**Engineer - Second Year**

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Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$30.97**

Supplemental Benefit Rate per Hour: **\$24.62**

**Engineer - Third Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$34.06**

Supplemental Benefit Rate per Hour: **\$24.62**

**Engineer - Fourth Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$37.16**

Supplemental Benefit Rate per Hour: **\$24.62**

(Local #15)

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**ENGINEER - OPERATING**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 5)

**Operating Engineer - First Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour 40% of Journeyperson's Rate

Supplemental Benefit Per Hour: **\$20.85**

**Operating Engineer - Second Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 50% of Journeyperson's Rate

Supplemental Benefit Per Hour: **\$20.85**

**Operating Engineer - Third Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 60% of Journeyperson's Rate

Supplemental Benefit Per Hour: **\$20.85**

(Local #14)

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## **FLOOR COVERER**

**(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)**

### **Floor Coverer (First Year)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 40% of Journeyman's rate  
Supplemental Rate Per Hour: \$31.14

### **Floor Coverer (Second Year)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 50% of Journeyman's rate  
Supplemental Rate Per Hour: \$31.14

### **Floor Coverer (Third Year)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 65% of Journeyman's rate  
Supplemental Rate Per Hour: \$31.14

### **Floor Coverer (Fourth Year)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 80% of Journeyman's rate  
Supplemental Rate Per Hour: \$31.14

(Carpenters District Council)

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## **GLAZIER**

**(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)**

### **Glazier (First Year)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 40% of Journeyman's rate  
Supplemental Rate Per Hour: \$15.26

### **Glazier (Second Year)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 50% of Journeyman's rate

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Supplemental Rate Per Hour: \$25.36

**Glazier (Third Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 60% of Journeyman's rate

Supplemental Rate Per Hour: \$28.62

**Glazier (Fourth Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 80% of Journeyman's rate

Supplemental Rate Per Hour: \$34.67

(Local #1281)

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**HEAT & FROST INSULATOR**

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

**Heat & Frost Insulator (First Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 40% of Journeyman's rate

**Heat & Frost Insulator (Second Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 60% of Journeyman's rate

**Heat & Frost Insulator (Third Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 70% of Journeyman's rate

**Heat & Frost Insulator (Fourth Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 80% of Journeyman's rate

(Local #12)

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**HOUSE WRECKER**  
**(TOTAL DEMOLITION)**  
**(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)**

**House Wrecker - First Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$21.17**

Supplemental Benefit Rate per Hour: **\$18.54**

**House Wrecker - Second Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$22.32**

Supplemental Benefit Rate per Hour: **\$18.54**

**House Wrecker - Third Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$23.97**

Supplemental Benefit Rate per Hour: **\$18.54**

**House Wrecker - Fourth Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$26.53**

Supplemental Benefit Rate per Hour: **\$18.54**

(Mason Tenders District Council)

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**IRON WORKER - ORNAMENTAL**  
**(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)**

**Iron Worker (Ornamental) - 1st Ten Months**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 50% of Journeyperson's rate

Supplemental Rate Per Hour: **\$39.40**

**Iron Worker (Ornamental) - 11 -16 Months**

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Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 55% of Journey person's rate  
Supplemental Rate Per Hour: \$40.62

**Iron Worker (Ornamental) - 17 - 22 Months**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 60% of Journey person's rate  
Supplemental Rate Per Hour: \$41.83

**Iron Worker (Ornamental) - 23 - 28 Months**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 70% of Journey person's rate  
Supplemental Rate Per Hour: \$44.27

**Iron Worker (Ornamental) - 29 - 36 Months**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 80% of Journey person's rate  
Supplemental Rate Per Hour: \$46.70

(Local #580)

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**IRON WORKER - STRUCTURAL**  
(Ratio of Apprentice to Journey person: 1 to 1, 1 to 6)

**Iron Worker (Structural) - 1st Six Months**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: \$26.12  
Supplemental Benefit Rate per Hour: \$50.22

**Iron Worker (Structural) - 7- 18 Months**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: \$26.72  
Supplemental Benefit Rate per Hour: \$50.22

**Iron Worker (Structural) - 19 - 36 months**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: \$27.32

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Supplemental Benefit Rate per Hour: \$50.22

(Local #40 and #361)

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**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**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 50% of Journeyman's rate

Supplemental Rate Per Hour: \$40.63

**Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) -  
Second 1000 hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 60% of Journeyman's rate

Supplemental Rate Per Hour: \$40.63

**Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) -  
Third 1000 hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 75% of Journeyman's rate

Supplemental Rate Per Hour: \$40.63

**Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) -  
Fourth 1000 hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 90% of Journeyman's rate

Supplemental Rate Per Hour: \$40.63

(Local #731)

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## **MARBLE MECHANICS**

**Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)**

### **Cutters & Setters - First 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

NO BENEFITS PAID DURING THE FIRST TWO MONTHS (PROBATIONARY PERIOD)

### **Cutters & Setters - Second 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 55% of Journeyperson's rate

### **Cutters & Setters - Third 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 65% of Journeyperson's rate

### **Cutters & Setters - Fourth 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

### **Cutters & Setters - Fifth 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 85% of Journeyperson's rate

### **Cutters & Setters - Sixth 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 95% of Journeyperson's rate

### **Polishers & Finishers - First 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

NO BENEFITS PAID DURING THE FIRST TWO MONTHS (PROBATIONARY PERIOD)

### **Polishers & Finishers - Second 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

### **Polishers & Finishers - Third 750 Hours**



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Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

**Polishers & Finishers - Fourth 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 90% of Journeyperson's rate

(Local #7)

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**MASON TENDER**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

**Mason Tender - First Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$21.39**

Supplemental Benefit Rate per Hour: **\$19.65**

**Mason Tender - Second Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$22.54**

Supplemental Benefit Rate per Hour: **\$19.65**

**Mason Tender - Third Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$24.29**

Supplemental Benefit Rate per Hour: **\$19.70**

**Mason Tender - Fourth Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$26.95**

Supplemental Benefit Rate per Hour: **\$19.70**

(Local #79)

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## **METALLIC LATHER**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

### **Metallic Lather (First Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$28.38

Supplemental Benefit Rate per Hour: \$10.96

### **Metallic Lather (Second Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$32.38

Supplemental Benefit Rate per Hour: \$12.96

### **Metallic Lather (Third Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$35.38

Supplemental Benefit Rate per Hour: \$17.12

### **Metallic Lather (Fourth Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$37.38

Supplemental Benefit Rate per Hour: \$17.92

(Local #46)

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## **MILLWRIGHT**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

### **Millwright (First Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$28.33

Supplemental Benefit Rate per Hour: \$34.28

### **Millwright (Second Year)**

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Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$33.48

Supplemental Benefit Rate per Hour: \$37.88

**Millwright (Third Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$38.63

Supplemental Benefit Rate per Hour: \$42.13

**Millwright (Fourth Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$48.93

Supplemental Benefit Rate per Hour: \$48.69

(Local #740)

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**PAVER AND ROADBUILDER**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

**Paver and Roadbuilder - First Year (Minimum 1000 hours)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$27.86

Supplemental Benefit Rate per Hour: \$19.25

**Paver and Roadbuilder - Second Year (Minimum 1000 hours)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$29.50

Supplemental Benefit Rate per Hour: \$19.25

(Local #1010)

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**PAINTER**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

**Painter - Brush & Roller - First Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$17.00

Supplemental Benefit Rate per Hour: \$13.42

**Painter - Brush & Roller - Second Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$21.25

Supplemental Benefit Rate per Hour: \$17.43

**Painter - Brush & Roller - Third Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$25.50

Supplemental Benefit Rate per Hour: \$20.50

**Painter - Brush & Roller - Fourth Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$34.00

Supplemental Benefit Rate per Hour: \$26.20

(District Council of Painters)

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**PAINTER - METAL POLISHER**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

**Metal Polisher (First Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$11.75

Supplemental Benefit Rate per Hour: \$5.13

**Metal Polisher (Second Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$13.00

Supplemental Benefit Rate per Hour: \$5.13

### **Metal Polisher (Third Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$15.75

Supplemental Benefit Rate per Hour: \$5.13

(Local 8A-28)

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## **PAINTER - STRUCTURAL STEEL**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

### **Painters - Structural Steel (First Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

### **Painters - Structural Steel (Second Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

### **Painters - Structural Steel (Third Year)**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 80% of Journeyperson's rate

(Local #806)

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## **PLASTERER**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

### **Plasterer - First Year: 1st Six Months**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 40% of Journeyperson's rate

Supplemental Rate Per Hour: \$13.59

### **Plasterer - First Year: 2nd Six Months**

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Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 45% of Journeyperson's rate  
Supplemental Rate Per Hour: \$14.07

**Plasterer - Second Year: 1st Six Months**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 55% of Journeyperson's rate  
Supplemental Rate Per Hour: \$16.04

**Plasterer - Second Year: 2nd Six Months**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 60% of Journeyperson's rate  
Supplemental Rate Per Hour: \$17.12

**Plasterer - Third Year: 1st Six Months**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 70% of Journeyperson's rate  
Supplemental Rate Per Hour: \$19.29

**Plasterer - Third Year: 2nd Six Months**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 75% of Journeyperson's rate  
Supplemental Rate Per Hour: \$20.37

(Local #530)

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**PLASTERER - TENDER**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

**Plasterer Tender - First Year**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: \$21.39  
Supplemental Benefit Rate per Hour: \$19.65

**Plasterer Tender - Second Year**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: \$22.54

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
\$220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Supplemental Benefit Rate per Hour: \$19.65

**Plasterer Tender - Third Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$24.29

Supplemental Benefit Rate per Hour: \$19.70

**Plasterer Tender - Fourth Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$26.95

Supplemental Benefit Rate per Hour: \$19.70

(Local #79)

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**PLUMBER**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

**Plumber - First Year: 1st Six Months**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$16.28

Supplemental Benefit Rate per Hour: \$5.43

**Plumber - First Year: 2nd Six Months**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$19.28

Supplemental Benefit Rate per Hour: \$6.43

**Plumber - Second Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$26.35

Supplemental Benefit Rate per Hour: \$17.10

**Plumber - Third Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$28.45

Supplemental Benefit Rate per Hour: \$17.10

**Plumber - Fourth Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$31.30**

Supplemental Benefit Rate per Hour: **\$17.10**

**Plumber - Fifth Year: 1st Six Months**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$32.70**

Supplemental Benefit Rate per Hour: **\$17.10**

**Plumber - Fifth Year: 2nd Six Months**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$44.77**

Supplemental Benefit Rate per Hour: **\$17.10**

(Plumbers Local #1)

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**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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$25.89**

Supplemental Benefit Rate per Hour: **\$13.64**

**Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Second Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$28.97**

Supplemental Benefit Rate per Hour: **\$18.15**

**Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Third Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$34.12**

Supplemental Benefit Rate per Hour: **\$20.90**



**Pointer, Waterproofer, Caulker, Sandblaster, Steamblaster - Fourth Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$41.33

Supplemental Benefit Rate per Hour: \$21.60

(Bricklayer District Council)

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**ROOFER**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)

**Roofer - First Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 35% of Journeyperson's Rate

**Roofer - Second Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 50% of Journeyperson's Rate

**Roofer - Third Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 60% of Journeyperson's Rate

**Roofer - Fourth Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 75% of Journeyperson's Rate

(Local #8)

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**SHEET METAL WORKER**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

**Sheet Metal Worker (0-6 Months)**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
\$220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 25% of Journeyperson's rate  
Supplemental Rate Per Hour: \$6.35

**Sheet Metal Worker (7-18 Months)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 35% of Journeyperson's rate  
Supplemental Rate Per Hour: \$17.12

**Sheet Metal Worker (19-30 Months)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 45% of Journeyperson's rate  
Supplemental Rate Per Hour: \$23.54

**Sheet Metal Worker (31-36 Months)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 55% of Journeyperson's rate  
Supplemental Rate Per Hour: \$27.70

**Sheet Metal Worker (37-42 Months)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 60% of Journeyperson's rate  
Supplemental Rate Per Hour: \$29.11

**Sheet Metal Worker (43-48 Months)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 70% of Journeyperson's rate  
Supplemental Rate Per Hour: \$33.96

**Sheet Metal Worker (49-54 Months)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 75% of Journeyperson's rate  
Supplemental Rate Per Hour: \$36.07

**Sheet Metal Worker (55-60 Months)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate Per Hour: 80% of Journeyperson's rate  
Supplemental Rate Per Hour: \$38.15

(Local #28)

## **SIGN ERECTOR**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

### **Sign Erector - First Year: 1st Six Months**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 35% of Journeyperson's rate

Supplemental Rate Per Hour: \$14.72

### **Sign Erector - First Year: 2nd Six Months**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 40% of Journeyperson's rate

Supplemental Rate Per Hour: \$16.71

### **Sign Erector - Second Year: 1st Six Months**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 45% of Journeyperson's rate

Supplemental Rate Per Hour: \$18.68

### **Sign Erector - Second Year: 2nd Six Months**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 50% of Journeyperson's rate

Supplemental Rate Per Hour: \$20.68

### **Sign Erector - Third Year: 1st Six Months**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 55% of Journeyperson's rate

Supplemental Rate Per Hour: \$27.72

### **Sign Erector - Third Year: 2nd Six Months**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 60% of Journeyperson's rate

Supplemental Rate Per Hour: \$30.57

### **Sign Erector - Fourth Year: 1st Six Months**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 65% of Journeyperson's rate

Supplemental Rate Per Hour: \$33.31

### **Sign Erector - Fourth Year: 2nd Six Months**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
\$220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 70% of Journeyperson's rate

Supplemental Rate Per Hour: \$35.83

**Sign Erector - Fifth Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 75% of Journeyperson's rate

Supplemental Rate Per Hour: \$38.32

**Sign Erector - Sixth Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 80% of Journeyperson's rate

Supplemental Rate Per Hour: \$40.81

(Local #137)

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**STEAMFITTER**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

**Steamfitter - First Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate and Supplemental Per Hour: 40% of Journeyperson's rate

**Steamfitter - Second Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate and Supplemental Rate Per Hour: 50% of Journeyperson's rate.

**Steamfitter - Third Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate and Supplemental Rate per Hour: 65% of Journeyperson's rate.

**Steamfitter - Fourth Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate and Supplemental Rate Per Hour: 80% of Journeyperson's rate.

**Steamfitter - Fifth Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate and Supplemental Rate Per Hour: 85% of Journeyperson's rate.

(Local #638)

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## **STONE MASON - SETTER**

(Ratio Apprentice of Journeyman: 1 to 1, 1 to 2)

### **Stone Mason - Setters - First 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 50% of Journeyman's rate

### **Stone Mason - Setters - Second 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 60% of Journeyman's rate

Supplemental Rate Per Hour: 50% of Journeyman's rate

### **Stone Mason - Setters - Third 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 70% of Journeyman's rate

Supplemental Rate Per Hour: 50% of Journeyman's rate

### **Stone Mason - Setters - Fourth 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 80% of Journeyman's rate

Supplemental Rate Per Hour: 50% of Journeyman's rate

### **Stone Mason - Setters - Fifth 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 90% of Journeyman's rate

Supplemental Rate Per Hour: 50% of Journeyman's rate

### **Stone Mason - Setters - Sixth 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 100% of Journeyman's rate

Supplemental Rate Per Hour: 50% of Journeyman's rate

(Bricklayers District Council)

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## **TAPER**

**(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)**

### **Drywall Taper - First Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

### **Drywall Taper - Second Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

### **Drywall Taper - Third Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 80% of Journeyperson's rate

(Local #1974)

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## **TILE LAYER - SETTER**

**(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)**

### **Tile Layer - Setter - First 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 50% of Journeyperson's rate

### **Tile Layer - Setter - Second 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 55% of Journeyperson's rate

### **Tile Layer - Setter - Third 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 65% of Journeyperson's rate

### **Tile Layer - Setter - Fourth 750 Hours**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 APPRENTICESHIP PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

**Tile Layer - Setter - Fifth 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 85% of Journeyperson's rate

**Tile Layer - Setter - Sixth 750 Hours**

Effective Period: 7/1/2017 - 6/30/2018

Wage and Supplemental Rate Per Hour: 95% of Journeyperson's rate

(Local #7)

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**TIMBERPERSON**

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

**Timberperson - First Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 40% of Journeyperson's rate

Supplemental Rate Per Hour: \$32.79

**Timberperson - Second Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 50% of Journeyperson's rate

Supplemental Rate Per Hour: \$32.79

**Timberperson - Third Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 65% of Journeyperson's rate

Supplemental Rate Per Hour: \$32.79

**Timberperson - Fourth Year**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate Per Hour: 80% of Journeyperson's rate

Supplemental Rate Per Hour: \$32.79

(Local #1536)

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE**

**LABOR LAW §220 PREVAILING WAGE SCHEDULE**

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 Labor Law §220 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 contracts.

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 New York State 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 works contracts. Contractors are advised to review the Comptroller's Prevailing Wage Schedule before bidding on public works contracts. Contractors with questions concerning trade classifications, prevailing rates or prevailing practices with respect to public works 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 works 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 works 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.

The appropriate schedule of prevailing wages and benefits must be posted at all public work sites pursuant to Labor Law §220 (3-a) (a).

This schedule is applicable to work performed during the effective period, unless otherwise noted. Changes to this schedule are published on our web site [www.comptroller.nyc.gov](http://www.comptroller.nyc.gov). 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 [www.comptroller.nyc.gov](http://www.comptroller.nyc.gov).

The Comptroller's Office has attempted to include all overtime, shift and night differential, Holiday, Saturday, Sunday or other premium time work. However, this schedule does not set forth every prevailing practice with respect to such rates with which employers must comply. All such practices are nevertheless part of the employer's prevailing wage obligation and contained in the collective bargaining agreements of the prevailing wage unions. These collective bargaining agreements are available for inspection by appointment. Requests for appointments may be made by calling (212) 669-4443, Monday through Friday between the hours of 9 a.m. and 5 p.m.



**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE**

Prevailing rates and ratios for apprentices are attached to this schedule in the Appendix. 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 New York State Department of Labor, may be employed on a public work project. Workers who are not journey persons or not registered apprentices pursuant to Labor Law §220 (3-e) may not be substituted for apprentices and must be paid as journey persons.

Public Work construction, reconstruction, demolition, excavation, rehabilitation, repair, renovation, alteration, or improvement contracts 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 <http://www.nyc.gov/html/mocs/html/vendors/pla.shtml>.

All the provisions of Labor Law section 220 remain applicable to PLA work including, but not limited to, the enforcement of prevailing wage requirements by the Comptroller; 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.**

**Wasył Kinach, P.E.  
Director of Classifications  
Bureau of Labor Law**

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## **ASBESTOS HANDLER**

(Hazardous Material; Disturbs, removes, encapsulates, repairs, or encloses friable asbestos material)

### **Asbestos Handler**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$36.00**

Supplemental Benefit Rate per Hour: **\$16.45**

### **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 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

### **Paid Holidays**

None

(Local #78 and Local #12A)

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## **BLASTER**

### **Blaster**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$46.27**

Supplemental Benefit Rate per Hour: **\$47.99**

### **Blaster (Hydraulic)**

Effective Period: 7/1/2017 - 6/30/2018

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

Wage Rate per Hour: \$47.15

Supplemental Benefit Rate per Hour: \$47.99

**Blaster - Trac Drill Hydraulic**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$41.29

Supplemental Benefit Rate per Hour: \$47.99

**Blaster - Wagon: Air Trac: Quarry Bar: Drillrunners**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$40.46

Supplemental Benefit Rate per Hour: \$47.99

**Blaster - Operators of Jack Hammers**

Chippers: Spaders: Concrete Breakers: and all other pneumatic tools of like usage: Walk Behind Self Propelled Hydraulic Asphalt and Concrete Breakers: Hydro (Water) Demolition

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$39.34

Supplemental Benefit Rate per Hour: \$47.99

**Blaster - Powder Carriers**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$35.17

Supplemental Benefit Rate per Hour: \$47.99

**Blaster - Hydraulic Trac Drill Chuck Tender**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$33.81

Supplemental Benefit Rate per Hour: \$47.99

**Blaster - Chuck Tender & Nipper**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$33.00

Supplemental Benefit Rate per Hour: \$47.99

**Blaster - Magazine Keepers: (Watch Person)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$18.22

Supplemental Benefit Rate per Hour: \$47.99

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

## Overtime Description

### Magazine Keepers:

Time and one half for work performed in excess of forty (40) hours per week and for work performed on Saturdays, Sundays and Holidays.

### All Other Employees:

Time and one-half for the first two hours of overtime Monday through Friday, the first ten hours, the first ten hours of work on Saturday and for Make-up Time. Double time for all hours over ten Monday through Saturday (except make-up hours) and for all hours worked on Sunday and Holidays.

## 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

None

## Shift Rates

A single shift shall be 8 hours plus an unpaid lunch, starting at 8:00 A.M (or between 6:00 A.M. and 10:00 A.M. on weekdays). When two (2) shifts are employed, each shift shall be 8 hours plus ½ hour unpaid lunch. When three (3) shifts are employed, each shift will work seven and one-half (7 ½) hours, but will be paid for eight (8) hours, since only one-half (½) hour is allowed for mealtime. When two (2) or more shifts are employed, single time will be paid for each shift. The first 8 hours of any and all work performed Monday through Friday inclusive of any off-shift shall be at the single time rate.

(Local #29)

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## BOILERMAKER

### Boilermaker

Effective Period: 7/1/2017 - 12/31/2017

Wage Rate per Hour: **\$55.23**

Supplemental Benefit Rate per Hour: **\$42.96**

Supplemental Note: For time and one half overtime - \$63.82 For double overtime - \$84.68

Effective Period: 1/1/2018 - 6/30/2018

Wage Rate per Hour: **\$57.17**

Supplemental Benefit Rate per Hour: **\$43.62**

Supplemental Note: For time and one half overtime - \$64.81 For double overtime - \$86.00

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

## 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

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

When shifts are required, the first shift shall work eight (8) hours at the regular straight-time hourly rate. The second shift shall work seven and one-half (7 ½) hours and receive eight hours at the regular straight time hourly rate plus twenty-five cents (\$0.25) per hour. The third shift shall work seven (7) hours and receive eight hours at the regular straight time hourly rate plus fifty cents (\$0.50) per hour. A thirty (30) minute lunch period shall not be considered as time worked. Work in excess of the above shall be paid overtime at the appropriate new construction work or repair work overtime wage and supplemental benefit hourly rate.

(Local #5)

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## BRICKLAYER

### Bricklayer

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$55.10

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

Supplemental Benefit Rate per Hour: **\$31.20**

**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.

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**

Overtime rates to be paid outside the regular scheduled work day.

(Bricklayer District Council)

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**CARPENTER - BUILDING COMMERCIAL**

**Building Commercial**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$52.50**

Supplemental Benefit Rate per Hour: **\$46.28**

**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



OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

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 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.

(Carpenters District Council)

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# **CARPENTER - HEAVY CONSTRUCTION WORK** (Construction of Engineering Structures and Building Foundations)

## **Heavy Construction Work**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$52.63**

Supplemental Benefit Rate per Hour: **\$49.66**

## **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

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

**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.

(Carpenters District Council)

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**CARPENTER - HIGH RISE CONCRETE FORMS**  
(Excludes Engineering Structures and Building Foundations)

**Carpenter High Rise A**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$50.78**

Supplemental Benefit Rate per Hour: **\$41.49**

**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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$39.07**

Supplemental Benefit Rate per Hour: **\$16.65**

**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

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

Presidential Election Day  
Thanksgiving Day  
Christmas Day

**Paid Holidays**

None

**Shift Rates**

The second shift wage rate shall be 113% of the straight time hourly wage rate. There must be a first shift in order to work a second shift.

(Carpenters District Council)

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**CARPENTER - SIDEWALK SHED, SCAFFOLD AND HOIST**

**Carpenter - Hod Hoist**

(Assisted by Mason Tender)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$50.50**

Supplemental Benefit Rate per Hour: **\$39.46**

**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  
§220 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.

(Carpenters District Council)

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## CEMENT & CONCRETE WORKER

### Cement & Concrete Worker

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.48**

Supplemental Benefit Rate per Hour: **\$26.00**

Supplemental Note: \$29.50 on Saturdays; \$33.00 on Sundays & Holidays

### Cement & Concrete Worker - (Hired after 2/6/2016)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$32.00**

Supplemental Benefit Rate per Hour: **\$18.00**

Supplemental Note: \$19.50 on Saturdays; \$21.00 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

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

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)

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## CEMENT MASON

### Cement Mason

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.62**

Supplemental Benefit Rate per Hour: **\$38.96**

Supplemental Note: For time and one half overtime - \$48.21; For double overtime - \$57.46

### 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.

### 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 an off shift day, (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. Four Days a week at Ten (10)hour day.

(Local #780) (BCA)

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## **CORE DRILLER**

### **Core Driller**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$38.82**

Supplemental Benefit Rate per Hour: **\$24.66**

### **Core Driller Helper**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$30.96**

Supplemental Benefit Rate per Hour: **\$24.66**

### **Core Driller Helper(Third year in the industry)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$27.86**

Supplemental Benefit Rate per Hour: **\$24.66**

### **Core Driller Helper (Second year in the industry)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$24.77**

Supplemental Benefit Rate per Hour: **\$24.66**

### **Core Driller Helper (First year in the industry)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$21.67**

Supplemental Benefit Rate per Hour: **\$24.66**

## **Overtime Description**

Time and one half the regular rate for work on a holiday plus Holiday pay when worked.

## **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

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

Labor Day  
Thanksgiving Day  
Christmas Day

## Shift Rates

The shift day shall be the continuous eight and one-half (8½) hours from 6:00 A.M. to 2:30 P.M. and from 2:30 P.M. to 11:00 P.M., including one-half (½) hour of employees regular rate of pay for lunch. 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 seventy-five cents (\$0.75) 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)

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## DERRICKPERSON AND RIGGER

### Derrick Person & Rigger

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$46.86

Supplemental Benefit Rate per Hour: \$51.40

Supplemental Note: The above supplemental rate applies for work performed in Manhattan, Bronx, Brooklyn and Queens. \$52.82 - For work performed in Staten Island.

### Derrick Person & Rigger - Site Work

Assists the Stone Mason-Setter in the setting of stone

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$40.29

Supplemental Benefit Rate per Hour: \$39.23

## 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.

## 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

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

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)

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## **DIVER**

### **Diver (Marine)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$66.66**

Supplemental Benefit Rate per Hour: **\$49.66**

### **Diver Tender (Marine)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$47.34**

Supplemental Benefit Rate per Hour: **\$49.66**

## **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



OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
\$220 PREVAILING WAGE SCHEDULE

## 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)

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## DOCKBUILDER - PILE DRIVER

### Dockbuilder - Pile Driver

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$52.63**

Supplemental Benefit Rate per Hour: **\$49.66**

### 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.

(Carpenters District Council)

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## **DRIVER: TRUCK (TEAMSTER)**

### **Driver - Dump Truck**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$41.18**

Supplemental Benefit Rate per Hour: **\$44.79**

Supplemental Note: Over 40 hours worked: at time and one half rate - \$19.94; at double time rate - \$26.58

### **Driver - Tractor Trailer**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.22**

Supplemental Benefit Rate per Hour: **\$45.40**

Supplemental Note: Over 40 hours worked: at time and one half rate - \$17.55; at double time rate - \$23.40

### **Driver - Euclid & Turnapull Operator**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.78**

Supplemental Benefit Rate per Hour: **\$45.40**

Supplemental Note: Over 40 hours worked: at time and one half rate - \$17.55 at double time rate - \$23.40

### **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

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

### **Paid Holidays**

New Year's Day

President's Day

Memorial Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

Independence Day  
Labor Day  
Columbus Day  
Veteran's Day  
Thanksgiving Day  
Day after Thanksgiving  
Christmas Day

## Shift Rates

Off single shift work commencing between 6:00 P.M. and 5:00 A.M. shall work eight and one half hours allowing for one half hour for lunch and receive 9 hours pay for 8 hours of work.

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## Driver Redi-Mix (Sand & Gravel)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$38.40**

Supplemental Benefit Rate per Hour: **\$42.12**

Supplemental Note: Over 40 hours worked: time and one half rate \$15.99, double time rate \$21.33

## Overtime Description

For Paid Holidays: Employees working two (2) days in the calendar week in which the holiday falls are to paid for these holidays, provided they shape each remaining workday during that calendar 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).

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  
Labor Day  
Thanksgiving Day  
Christmas Day

## Paid Holidays

New Year's Day  
President's Day  
Memorial Day  
Independence Day  
Labor Day  
Columbus Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

Election Day  
Thanksgiving Day  
Christmas Day

(Local #282)

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## **ELECTRICIAN**

(Including all low voltage cabling carrying data; video; and voice in combination with data and or video.)

### **Electrician "A" (Regular Day / Day Shift)**

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$56.00**

Supplemental Benefit Rate per Hour: **\$54.35**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$56.00**

Supplemental Benefit Rate per Hour: **\$55.72**

### **Electrician "A" (Regular Day Overtime after 7 hrs / Day Shift Overtime after 8 hrs)**

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$84.00**

Supplemental Benefit Rate per Hour: **\$57.86**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$84.00**

Supplemental Benefit Rate per Hour: **\$59.23**

### **Electrician "A" (Swing Shift)**

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$65.71**

Supplemental Benefit Rate per Hour: **\$61.94**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$65.71**

Supplemental Benefit Rate per Hour: **\$63.52**

### **Electrician "A" (Swing Shift Overtime After 7.5 hours)**

Effective Period: 7/1/2017 - 5/9/2018

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

Wage Rate per Hour: **\$98.57**

Supplemental Benefit Rate per Hour: **\$66.05**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$98.57**

Supplemental Benefit Rate per Hour: **\$67.64**

**Electrician "A" (Graveyard Shift)**

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$73.60**

Supplemental Benefit Rate per Hour: **\$68.33**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$73.60**

Supplemental Benefit Rate per Hour: **\$70.09**

**Electrician "A" (Graveyard Shift Overtime After 7 hours)**

Effective Period: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$110.40**

Supplemental Benefit Rate per Hour: **\$72.95**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$110.40**

Supplemental Benefit Rate per Hour: **\$74.70**

**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**

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK**  
**§220 PREVAILING WAGE SCHEDULE**

When so elected by the Employer, one or more shifts of at least five days duration may be scheduled as follows:  
Day Shift: 8:00 am to 4:30 pm, Swing Shift 4:30 pm to 12:30 am, Graveyard Shift: 12:30 am to 8:00 am.

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 \$25.67 and effective 5/10/18 \$25.92.

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### **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: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$28.50**

Supplemental Benefit Rate per Hour: **\$22.10**

First and Second Year "M" Wage Rate Per Hour: **\$24.00**

First and Second Year "M" Supplemental Rate: **\$19.80**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$29.00**

Supplemental Benefit Rate per Hour: **\$22.65**

First and Second Year "M" Wage Rate Per Hour: **\$24.50**

First and Second Year "M" Supplemental Rate: **\$20.30**

### **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: 7/1/2017 - 5/9/2018

Wage Rate per Hour: **\$42.75**

Supplemental Benefit Rate per Hour: **\$23.89**

First and Second Year "M" Wage Rate Per Hour: **\$36.00**

First and Second Year "M" Supplemental Rate: **\$21.30**

Effective Period: 5/10/2018 - 6/30/2018

Wage Rate per Hour: **\$43.50**

Supplemental Benefit Rate per Hour: **\$24.47**

First and Second Year "M" Wage Rate Per Hour: **\$36.75**

First and Second Year "M" Supplemental Rate: **\$21.84**

### **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.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

### 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)

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## 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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$32.40**

Supplemental Benefit Rate per Hour: **\$16.10**

Supplemental Note: \$14.60 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.

Double time the regular rate for Sunday.

### Paid Holidays

New Year's Day

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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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 8:00 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

### Sick Days:

One day per Year. Up to 4 vacation days may be used as sick days.

(Local #3)

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## ELECTRICIAN-STREET LIGHTING WORKER

### Electrician - Electro Pole Electrician

Effective Period: 7/1/2017 - 5/15/2018

Wage Rate per Hour: \$56.00

Supplemental Benefit Rate per Hour: \$56.26

Effective Period: 5/16/2018 - 6/30/2018

Wage Rate per Hour: \$56.00

Supplemental Benefit Rate per Hour: \$57.63

### Electrician - Electro Pole Foundation Installer

Effective Period: 7/1/2017 - 5/15/2018

Wage Rate per Hour: \$41.54

Supplemental Benefit Rate per Hour: \$41.02

Effective Period: 5/16/2018 - 6/30/2018

Wage Rate per Hour: \$42.16

Supplemental Benefit Rate per Hour: \$42.19



## **Electrician - Electro Pole Maintainer**

Effective Period: 7/1/2017 - 5/16/2018

Wage Rate per Hour: **\$35.58**

Supplemental Benefit Rate per Hour: **\$36.89**

Effective Period: 5/17/2018 - 6/30/2018

Wage Rate per Hour: **\$36.11**

Supplemental Benefit Rate per Hour: **\$37.93**

### **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

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)

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## **ELEVATOR CONSTRUCTOR**

### **Elevator Constructor**

Effective Period: 7/1/2017 - 3/16/2018

Wage Rate per Hour: **\$62.64**

Supplemental Benefit Rate per Hour: **\$34.25**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

Effective Period: 3/17/2018 - 6/30/2018  
Wage Rate per Hour: **\$64.48**  
Supplemental Benefit Rate per Hour: **\$35.85**

### Overtime Description

For New Construction: work performed after 7 or 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  
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)

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## ELEVATOR REPAIR & MAINTENANCE

### Elevator Service/Modernization Mechanic

Effective Period: 7/1/2017 - 3/16/2018  
Wage Rate per Hour: **\$49.14**  
Supplemental Benefit Rate per Hour: **\$34.11**

Effective Period: 3/17/2018 - 6/30/2018  
Wage Rate per Hour: **\$50.49**  
Supplemental Benefit Rate per Hour: **\$35.71**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

## 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

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)

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# 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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$67.32**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$107.71**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
\$220 PREVAILING WAGE SCHEDULE

**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, Cherrypickers. 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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$65.31**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$104.50**

**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.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$61.93**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$99.09**

**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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$65.00**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$104.00**

## **Engineer - Heavy Construction Maintenance Engineer II**

On Base Mounted Tower Cranes

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$85.53**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$136.85**

## **Engineer - Heavy Construction Maintenance Engineer III**

On Generators, Light Towers

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.73**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$68.37**

## **Engineer - Heavy Construction Maintenance Engineer IV**

On Pumps and Mixers including mud sucking

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$43.86**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$70.18**

## **Engineer - Heavy Construction Oilers I**

Gradalls, Cold Planer Grader, Concrete Pumps, Driving Truck Cranes, Driving and Operating Fuel and Grease Trucks.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$58.57**

Supplemental Benefit Rate per Hour: **\$36.87**

Supplemental Note: \$66.34 on overtime

Shift Wage Rate: **\$93.71**

## **Engineer - Heavy Construction Oilers II**

All gasoline, electric, diesel or air operated Shovels, Draglines, Backhoes, Keystones, Pavers, Guniting Machines, Battery of Compressors, Crawler Cranes, two-person Trenching Machines.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$40.36**

Supplemental Benefit Rate per Hour: **\$36.87**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

Supplemental Note: \$66.34 on overtime  
Shift Wage Rate: \$64.58

### **Engineer - Steel Erection Maintenance Engineers**

Derrick, Travelers, Tower, Crawler Tower and Climbing Cranes

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: \$61.13  
Supplemental Benefit Rate per Hour: \$35.41  
Supplemental Note: \$63.67 on overtime  
Shift Wage Rate: \$97.81

### **Engineer - Steel Erection Oiler I**

On a Truck Crane

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: \$57.21  
Supplemental Benefit Rate per Hour: \$35.41  
Supplemental Note: \$63.67 on overtime  
Shift Wage Rate: \$91.54

### **Engineer - Steel Erection Oiler II**

On a Crawler Crane

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: \$43.54  
Supplemental Benefit Rate per Hour: \$35.41  
Supplemental Note: \$63.67 on overtime  
Shift Wage Rate: \$69.66

### **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

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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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

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### **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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$58.30**

Supplemental Benefit Rate per Hour: **\$35.41**

Supplemental Note: \$63.67 on overtime

### **Engineer - Building Work Maintenance Engineers II**

On Pumps, Generators, Mixers and Heaters

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$45.28**

Supplemental Benefit Rate per Hour: **\$35.41**

Supplemental Note: \$63.67 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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$55.42**

Supplemental Benefit Rate per Hour: **\$35.41**

Supplemental Note: \$63.67 on overtime

### **Engineer - Building Work Oilers II**

Oilers on Crawler Cranes, Backhoes, Trenching Machines, Guniting Machines, Compressors (three or more in Battery).

Effective Period: 7/1/2017 - 6/30/2018

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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Wage Rate per Hour: **\$41.16**

Supplemental Benefit Rate per Hour: **\$35.41**

Supplemental Note: \$63.67 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

### Shift Rates

Off Shift: double time the regular hourly rate.

(Local #15)

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## ENGINEER - CITY SURVEYOR AND CONSULTANT

### Party Chief

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$38.18**

Supplemental Benefit Rate per Hour: **\$20.15**

Supplemental Note: Overtime Benefit Rate - \$27.65 per hour (time & one half) \$35.15 per hour (double time).

### Instrument Person

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$31.47**

Supplemental Benefit Rate per Hour: **\$20.15**



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Supplemental Note: Overtime Benefit Rate - \$27.65 per hour (time & one half) \$35.15 per hour (double time).

**Rodperson**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$27.24**

Supplemental Benefit Rate per Hour: **\$20.15**

Supplemental Note: Overtime Benefit Rate - \$27.65 per hour (time & one half) \$35.15 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

(Operating Engineer Local #15-D)

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**ENGINEER - FIELD (BUILDING CONSTRUCTION)**

(Construction of Building Projects, Concrete Superstructures, etc.)

**Field Engineer - BC Party Chief**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$60.10**

Supplemental Benefit Rate per Hour: **\$32.15**

Supplemental Note: Overtime Benefit Rate - \$44.90 per hour (time & one half) \$57.65 per hour (double time).

**Field Engineer - BC Instrument Person**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$46.69**

Supplemental Benefit Rate per Hour: **\$32.15**

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§220 PREVAILING WAGE SCHEDULE**

Supplemental Note: Overtime Benefit Rate - \$44.90 per hour (time & one half) \$57.65 per hour (double time).

**Field Engineer - BC Rodperson**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$30.20**

Supplemental Benefit Rate per Hour: **\$32.15**

Supplemental Note: Overtime Benefit Rate - \$44.90 per hour (time & one half) \$57.65 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

(Operating Engineer Local #15-D)

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**ENGINEER - FIELD (HEAVY CONSTRUCTION)**

(Construction of Roads, Tunnels, Bridges, Sewers, Building Foundations, Engineering Structures etc.)

**Field Engineer - HC Party Chief**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$70.25**

Supplemental Benefit Rate per Hour: **\$34.18**

Supplemental Note: Overtime benefit rate - \$47.82 per hour (time & one half), \$61.46 per hour (double time).

**Field Engineer - HC Instrument Person**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$51.64**

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Supplemental Benefit Rate per Hour: **\$34.18**

Supplemental Note: Overtime benefit rate - \$47.82 per hour (time & one half), \$61.46 per hour (double time).

**Field Engineer - HC Rodperson**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$43.37**

Supplemental Benefit Rate per Hour: **\$34.18**

Supplemental Note: Overtime benefit rate - \$47.82 per hour (time & one half), \$61.46 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

(Operating Engineer Local #15-D)

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**ENGINEER - FIELD (STEEL ERECTION)**

**Field Engineer - Steel Erection Party Chief**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$63.64**

Supplemental Benefit Rate per Hour: **\$33.04**

Supplemental Note: Overtime benefit rate - \$46.11 per hour (time & one half), \$59.18 per hour (double time).

**Field Engineer - Steel Erection Instrument Person**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$49.59**

Supplemental Benefit Rate per Hour: **\$33.04**

Supplemental Note: Overtime benefit rate - \$46.11 per hour (time & one half), \$59.18 per hour (double time).

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**Field Engineer - Steel Erection Rodperson**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$33.20**

Supplemental Benefit Rate per Hour: **\$33.04**

Supplemental Note: Overtime benefit rate - \$46.11 per hour (time & one half), \$59.18 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

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)

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**ENGINEER - OPERATING**

**Operating Engineer - Road & Heavy Construction I**

Back Filling Machines, Cranes, Mucking Machines and Dual Drum Paver.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$76.60**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: **\$122.56**

**Operating Engineer - Road & Heavy Construction II**

Backhoes, Power Shovels, Hydraulic Clam Shells, Steel Erection, Moles and machines of a similar nature.

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Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$79.28**  
Supplemental Benefit Rate per Hour: **\$31.10**  
Supplemental Note: \$56.50 overtime hours  
Shift Wage Rate: **\$126.85**

**Operating Engineer - Road & Heavy Construction III**

Mine Hoists, Cranes, etc. (Used as Mine Hoists)

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$81.80**  
Supplemental Benefit Rate per Hour: **\$31.10**  
Supplemental Note: \$56.50 overtime hours  
Shift Wage Rate: **\$130.88**

**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: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$79.85**  
Supplemental Benefit Rate per Hour: **\$31.10**  
Supplemental Note: \$56.50 overtime hours  
Shift Wage Rate: **\$127.76**

**Operating Engineer - Road & Heavy Construction V**

Pile Drivers & Rigs (employing Dock Builder foreperson): Derrick Boats, Tunnel Shovels.

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$78.29**  
Supplemental Benefit Rate per Hour: **\$31.10**  
Supplemental Note: \$56.50 overtime hours  
Shift Wage Rate: **\$125.26**

**Operating Engineer - Road & Heavy Construction VI**

Mixers (Concrete with loading attachment), Concrete Pavers, Cableways, Land Derricks, Power Houses (Low Air Pressure Units).

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$74.42**  
Supplemental Benefit Rate per Hour: **\$31.10**  
Supplemental Note: \$56.50 overtime hours  
Shift Wage Rate: **\$119.07**

**Operating Engineer - Road & Heavy Construction VII**

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE**

**Carrier Movers , Barrier Transport and Machines of a Similar Nature.**

**Effective Period: 7/1/2017 - 6/30/2018**

**Wage Rate per Hour: \$60.22**

**Supplemental Benefit Rate per Hour: \$31.10**

**Supplemental Note: \$56.50 overtime hours**

**Shift Wage Rate: \$96.35**

**Operating Engineer - Road & Heavy Construction VIII**

**Utility Compressors**

**Effective Period: 7/1/2017 - 6/30/2018**

**Wage Rate per Hour: \$46.88**

**Supplemental Benefit Rate per Hour: \$31.10**

**Supplemental Note: \$56.50 overtime hours**

**Shift Wage Rate: \$58.92**

**Operating Engineer - Road & Heavy Construction IX**

**Horizontal Boring Rig**

**Effective Period: 7/1/2017 - 6/30/2018**

**Wage Rate per Hour: \$70.79**

**Supplemental Benefit Rate per Hour: \$31.10**

**Supplemental Note: \$56.50 overtime hours**

**Shift Wage Rate: \$113.26**

**Operating Engineer - Road & Heavy Construction X**

**Elevators (manually operated as personnel hoist).**

**Effective Period: 7/1/2017 - 6/30/2018**

**Wage Rate per Hour: \$65.12**

**Supplemental Benefit Rate per Hour: \$31.10**

**Supplemental Note: \$56.50 overtime hours**

**Shift Wage Rate: \$104.19**

**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: 7/1/2017 - 6/30/2018**

**Wage Rate per Hour: \$50.73**

**Supplemental Benefit Rate per Hour: \$31.10**

**Supplemental Note: \$56.50 overtime hours**

**Shift Wage Rate: \$81.17**

### **Operating Engineer - Road & Heavy Construction XII**

All Drills and Machines of a similar nature.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$75.19**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: **\$56.50** overtime hours

Shift Wage Rate: **\$120.30**

### **Operating Engineer - Road & Heavy Construction XIII**

Concrete Pumps, Concrete Plant, Stone Crushers, Double Drum Hoist, Power Houses (other than above).

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$72.84**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: **\$56.50** overtime hours

Shift Wage Rate: **\$116.54**

### **Operating Engineer - Road & Heavy Construction XIV**

Concrete Mixer

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$69.67**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: **\$56.50** overtime hours

Shift Wage Rate: **\$111.47**

### **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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$47.18**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: **\$56.50** overtime hours

Shift Wage Rate: **\$75.49**

### **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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$66.56**

Supplemental Benefit Rate per Hour: **\$31.10**

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Supplemental Note: \$56.50 overtime hours  
Shift Wage Rate: \$106.50

**Operating Engineer - Road & Heavy Construction XVII**

On-Site concrete plant engineer, On-site Asphalt Plant Engineer, and Vibratory console.

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: \$67.07  
Supplemental Benefit Rate per Hour: \$31.10  
Supplemental Note: \$56.50 overtime hours  
Shift Wage Rate: \$107.31

**Operating Engineer - Road & Heavy Construction XVIII**

Tower Crane

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: \$95.98  
Supplemental Benefit Rate per Hour: \$31.10  
Supplemental Note: \$56.50 overtime hours  
Shift Wage Rate: \$153.57

**Operating Engineer - Paving I**

Asphalt Spreaders, Autogrades (C.M.I.), Roto/Mil

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: \$74.42  
Supplemental Benefit Rate per Hour: \$31.10  
Supplemental Note: \$56.50 overtime hours  
Shift Wage Rate: \$119.07

**Operating Engineer - Paving II**

Asphalt Roller

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: \$72.50  
Supplemental Benefit Rate per Hour: \$31.10  
Supplemental Note: \$56.50 overtime hours  
Shift Wage Rate: \$116.00

**Operating Engineer - Paving III**

Asphalt Plants

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: \$61.43



OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

Supplemental Benefit Rate per Hour: **\$31.10**  
Supplemental Note: \$56.50 overtime hours  
Shift Wage Rate: **\$98.29**

**Operating Engineer - Concrete I**

Cranes

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$79.50**  
Supplemental Benefit Rate per Hour: **\$31.10**  
Supplemental Note: \$56.50 overtime hours

**Operating Engineer - Concrete II**

Compressors

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$47.54**  
Supplemental Benefit Rate per Hour: **\$31.10**  
Supplemental Note: \$56.50 overtime hours

**Operating Engineer - Concrete III**

Micro-traps (Negative Air Machines), Vac-All Remediation System.

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$63.66**  
Supplemental Benefit Rate per Hour: **\$31.10**  
Supplemental Note: \$56.50 overtime hours

**Operating Engineer - Steel Erection I**

Three Drum Derricks

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$82.23**  
Supplemental Benefit Rate per Hour: **\$31.10**  
Supplemental Note: \$56.50 overtime hours  
Shift Wage Rate: **\$131.57**

**Operating Engineer - Steel Erection II**

Cranes, 2 Drum Derricks, Hydraulic Cranes, Fork Lifts and Boom Trucks.

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$79.04**  
Supplemental Benefit Rate per Hour: **\$31.10**  
Supplemental Note: \$56.50 overtime hours  
Shift Wage Rate: **\$126.46**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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**Operating Engineer - Steel Erection III**

Compressors, Welding Machines.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$47.14

Supplemental Benefit Rate per Hour: \$31.10

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: \$75.42

**Operating Engineer - Steel Erection IV**

Compressors - Not Combined with Welding Machine.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$44.91

Supplemental Benefit Rate per Hour: \$31.10

Supplemental Note: \$56.50 overtime hours

Shift Wage Rate: \$71.86

**Operating Engineer - Building Work I**

Forklifts, Plaster (Platform machine), Plaster Bucket, Concrete Pump and all other equipment used for hoisting material.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$62.87

Supplemental Benefit Rate per Hour: \$31.10

Supplemental Note: \$56.50 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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$47.01

Supplemental Benefit Rate per Hour: \$31.10

Supplemental Note: \$56.50 overtime hours

**Operating Engineer - Building Work III**

Double Drum

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$71.60

Supplemental Benefit Rate per Hour: \$31.10

Supplemental Note: \$56.50 overtime hours

### **Operating Engineer - Building Work IV**

Stone Derrick, Cranes, Hydraulic Cranes Boom Trucks.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$75.87**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

### **Operating Engineer - Building Work V**

Dismantling and Erection of Cranes, Relief Engineer.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$69.88**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

### **Operating Engineer - Building Work VI**

4 Pole Hoist, Single Drum Hoists.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$69.14**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

### **Operating Engineer - Building Work VII**

Rack & Pinion and House Cars

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$54.92**

Supplemental Benefit Rate per Hour: **\$31.10**

Supplemental Note: \$56.50 overtime hours

For New House Car projects Wage Rate per Hour **\$43.77**

### **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).

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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### **aid 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

### **Shift Rates**

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)

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## **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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$50.50**

Supplemental Benefit Rate per Hour: **\$45.88**

### **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  
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Presidential Election Day  
Thanksgiving Day  
Day after Thanksgiving  
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**

Two shifts may be utilized with the first shift working 8:00 A.M. to the end of the shift at the straight time of pay. The second shift will receive one hour at double time rate for the last hour of the shift. (eight for seven, nine for eight).

(Carpenters District Council)

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## **GLAZIER**

(New Construction, Remodeling, and Alteration)

### **Glazier**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$44.70**

Supplemental Benefit Rate per Hour: **\$40.99**

Supplemental Note: Supplemental Benefit Overtime Rate: \$50.09

## **Overtime Description**

An optional 8th hour can be worked at straight time rate. If 9th hour is worked, then both hours or more (8th & 9th or more) will be at the double time rate of pay.

## **Overtime**

Double time the regular rate after a 7 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

Thanksgiving Day

Day after Thanksgiving

Christmas Day

## **aid Holidays**

None

## **Shift Rates**

Shifts shall be any 7 hours beyond 4:00 P.M. for which the glazier shall receive 8 hours pay for 7 hours worked.

(Local #1281)

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## **GLAZIER - REPAIR & MAINTENANCE**

(For the Installation of Glass - All repair and maintenance work on a particular building, whenever performed, where the total cumulative contract value is under \$127,628. Except where enumerated (i.e. plate glass windows) does not apply to non-residential buildings.)

### **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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$24.13

Supplemental Benefit Rate per Hour: \$21.12

## **Overtime**

Time and one half the regular rate after an 8 hour day.

Double time the regular rate for Sunday.

Time and one half the regular hourly rate after 40 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

(Local #1281)

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## HEAT AND FROST INSULATOR

### Heat & Frost Insulator

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$58.38

Supplemental Benefit Rate per Hour: \$39.46

### Overtime Description

Double time shall be paid for supplemental benefits during overtime work.

8th hour paid at time and one half.

### 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

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.

Off hour work in occupied or retail buildings may be worked on weekdays with an increment of \$1.00 per hour and eight hours pay for seven (7) hours worked. Double time will apply for over seven (7) hours worked on weekdays, weekends or holidays.

(Local #12) (BCA)

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## **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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$36.33**

Supplemental Benefit Rate per Hour: **\$29.22**

### **House Wrecker - Tier B**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$25.56**

Supplemental Benefit Rate per Hour: **\$21.63**

### **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

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

### **Paid Holidays**

None

(Mason Tenders District Council)

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## **IRON WORKER - ORNAMENTAL**

### **Iron Worker - Ornamental**

Effective Period: 7/1/2017 - 6/30/2018



OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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Wage Rate per Hour: **\$44.20**

Supplemental Benefit Rate per Hour: **\$51.57**

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

For off shift work - 8 hours pay for 7 hours of work. When two or three shifts are employed on a job, Monday through Friday, the workday for each shift shall be seven hours and paid for ten and one-half hours at the single time rate. When two or three shifts are worked on Saturday, Sunday or holidays, each shift shall be seven hours and paid fifteen and three-quarters hours.

(Local #580)

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## IRON WORKER - STRUCTURAL

### Iron Worker - Structural

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$50.05**

Supplemental Benefit Rate per Hour: **\$72.53**

Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

### Overtime Description

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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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.

### **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.

(Local #40 & #361)

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## **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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$41.50**

Supplemental Benefit Rate per Hour: **\$40.63**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 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

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)

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## LANDSCAPING

(Landscaping tasks, as well as tree pruning, tree removing, spraying and maintenance in connection with the planting of street trees and the planting of trees in city parks but not when such activities are performed as part of, or in connection with, other construction or reconstruction projects.)

### Landscaper (Above 6 years experience)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$28.75

Supplemental Benefit Rate per Hour: \$15.55

### Landscaper (3 - 6 years experience)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$27.75

Supplemental Benefit Rate per Hour: \$15.55

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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**Landscaper (up to 3 years experience)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$25.25

Supplemental Benefit Rate per Hour: \$15.55

**Groundperson**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$25.25

Supplemental Benefit Rate per Hour: \$15.55

**Tree Remover / Pruner**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$33.75

Supplemental Benefit Rate per Hour: \$15.55

**Landscaper Sprayer (Pesticide Applicator)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$23.75

Supplemental Benefit Rate per Hour: \$15.55

**Watering - Plant Maintainer**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$18.72

Supplemental Benefit Rate per Hour: \$15.55

**Overtime Description**

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**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

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)

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## **MARBLE MECHANIC**

### **Marble Setter**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$52.74**

Supplemental Benefit Rate per Hour: **\$38.67**

### **Marble Finisher**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$41.46**

Supplemental Benefit Rate per Hour: **\$36.64**

### **Marble Polisher**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$37.93**

Supplemental Benefit Rate per Hour: **\$28.33**

## **Overtime Description**

Supplemental Benefit contributions are to be made at the applicable overtime rates. Time and one half the regular rate after a 7 hour day or time and one half the regular rate after an 8 hour day - chosen by Employer at the start of the project and then would last for the full duration of the project.

## **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

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

Christmas Day

**Paid Holidays**

None

(Local #7)

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**MASON TENDER**

**Mason Tender**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$37.90**

Supplemental Benefit Rate per Hour: **\$30.59**

**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**

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.

(Local #79)

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## **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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$36.19**

Supplemental Benefit Rate per Hour: **\$24.25**

### **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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$25.38**

Supplemental Benefit Rate per Hour: **\$18.57**

### **Overtime**

Time and one half the regular rate after an 8 hour day.

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

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

### **Paid Holidays**

None

(Local #79)

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## **METALLIC LATHER**

### **Metallic Lather**

Effective Period: 7/1/2017 - 6/30/2018

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

Wage Rate per Hour: **\$46.28**

Supplemental Benefit Rate per Hour: **\$42.92**

Supplemental Note: Supplemental benefits for overtime are paid at the appropriate overtime rate.

### Overtime Description

Overtime would be time and one half the regular rate after a seven (7) or eight (8) hours workday, which would be set at the start of the job.

### 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

Washington's Birthday

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

There will be no shift differential paid on the first shift if more than one shift is employed. The shift differential will remain \$12/hour on the second and third shift for the first eight (8) hours if worked. There will be no pyramiding on overtime worked on second and third shifts. The time and one half (1.5x) rate will be against the base wage rate, not the shift differential

(Local #46)

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## MILLWRIGHT

### Millwright

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$51.50**

Supplemental Benefit Rate per Hour: **\$52.41**

### Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.



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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

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

The first shift shall receive the straight time rate of pay. The second shift receives the straight time rate of pay plus fifteen (15%) per cent. Members of the second shift shall be allowed one half hour to eat, with this time being included in the hours of the workday established. There must be a first shift to work a second shift. All additional hours worked shall be paid at the time and one-half rate of pay plus fifteen (15%) per cent for weekday hours.

(Local #740)

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## MOSAIC MECHANIC

### Mosaic Mechanic - Mosaic & Terrazzo Mechanic

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$46.86**

Supplemental Benefit Rate per Hour: **\$40.65**

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of \$51.67 per hour.

### Mosaic Mechanic - Mosaic & Terrazzo Finisher

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$45.26**

Supplemental Benefit Rate per Hour: **\$40.63**

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of \$51.65 per hour.

## **Mosaic Mechanic - Machine Operator Grinder**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$45.26**

Supplemental Benefit Rate per Hour: **\$40.63**

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of \$51.65 per hour.

### **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)

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## **PAINTER**

### **Painter - Brush & Roller**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.50**

Supplemental Benefit Rate per Hour: **\$28.62**

Supplemental Note: \$ 33.25 on overtime

### **Spray & Scaffold / Decorative / Sandblast**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$45.50**

Supplemental Benefit Rate per Hour: **\$28.62**

Supplemental Note: \$ 33.25 on overtime

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## 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)

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## PAINTER - METAL POLISHER

### METAL POLISHER

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$29.73

Supplemental Benefit Rate per Hour: \$7.06

### METAL POLISHER - NEW CONSTRUCTION

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$30.68

Supplemental Benefit Rate per Hour: \$7.06

### METAL POLISHER - SCAFFOLD OVER 34 FEET

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$33.23

Supplemental Benefit Rate per Hour: \$7.06

## 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

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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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.

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

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**

Four Days a week at Ten (10) hours straight a day.

Local 8A-28A

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## **PAINTER - STRIPER**

### **Striper (paint)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$35.00**

Supplemental Benefit Rate per Hour: **\$12.37**

Supplemental Note: Overtime Supplemental Benefit rate - \$8.02; New Hire Rate (0-3 months) - \$0.00

### **Lineperson (thermoplastic)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$39.00**

Supplemental Benefit Rate per Hour: **\$12.37**

Supplemental Note: Overtime Supplemental Benefit rate - \$8.02; New Hire Rate (0-3 months) - \$0.00

### **Overtime**

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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

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

## **Shift Rates**

Employees hired before April 1, 2003: 15% night shift premium differential for work commenced at 9:00 PM or later.

## **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. Vacation must be taken during winter months. 2 Personal Days except employees hired after 4/1/12 who do not have 2 years of service.

(Local #917)

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## **PAINTER - STRUCTURAL STEEL**

### **Painters on Structural Steel**

Effective Period: 7/1/2017 - 9/30/2017

Wage Rate per Hour: **\$49.50**

Supplemental Benefit Rate per Hour: **\$37.08**

Effective Period: 10/1/2017 - 6/30/2018

Wage Rate per Hour: **\$50.00**

Supplemental Benefit Rate per Hour: **\$38.33**

### **Painter - Power Tool**

Effective Period: 7/1/2017 - 9/30/2017

Wage Rate per Hour: **\$55.50**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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Supplemental Benefit Rate per Hour: **\$37.08**  
Overtime Wage Rate: \$6.00 above the "Painters on Structural Steel" overtime rate.

Effective Period: 10/1/2017 - 6/30/2018

Wage Rate per Hour: **\$56.00**

Supplemental Benefit Rate per Hour: **\$38.33**

Overtime Wage Rate: \$6.00 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

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

Regular hourly rates plus a ten per cent (10%) differential

(Local #806)

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# PAPERHANGER

## Paperhanger

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$44.89**

Supplemental Benefit Rate per Hour: **\$31.13**

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.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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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

### **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)

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## **PAVER AND ROADBUILDER**

### **Paver & Roadbuilder - Formsetter**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$45.85**

Supplemental Benefit Rate per Hour: **\$40.98**

### **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 before the installation of rubberized materials and similar surfaces; installation and repair of temporary construction fencing; slurry seal coating, maintenance of safety surfaces; play equipment installation, and other related work.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$41.98**

Supplemental Benefit Rate per Hour: **\$40.98**

### **Production Paver & Roadbuilder - Screed Person**

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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(Production paving is asphalt paving when using a paving machine or on a project where a paving machine is additionally used)

Adjustment of paving machinery on production paving jobs.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$46.45**

Supplemental Benefit Rate per Hour: **\$40.98**

### **Production Paver & Roadbuilder - Raker**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$45.85**

Supplemental Benefit Rate per Hour: **\$40.98**

### **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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.37**

Supplemental Benefit Rate per Hour: **\$40.98**

### **Overtime Description**

If an employee works New Year's Day or Christmas Day, they receive the single time rate plus 25%.

### **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

### **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 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  
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(Local #1010)

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## PLASTERER

### Plasterer

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$44.93**

Supplemental Benefit Rate per Hour: **\$25.15**

### 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 alteration work during regular work hours, in a building occupied by tenants, said work shall proceed on a shift basis: however work over seven (7) hours in any twenty four (24) hour period, the time after seven (7) hours shall be considered overtime.

The second shift shall start at a time between 3:30 p.m. and 7:00 p.m. and shall consist of seven (7) working hours and shall receive eight (8) hours of wages and benefits at the straight time rate. The workers on the second shift shall be allowed one-half (½) hour to eat with this time being included in the seven (7) hours of work.

(Local #262)

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## **PLASTERER - TENDER**

### **Plasterer - Tender**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$37.90**

Supplemental Benefit Rate per Hour: **\$30.59**

### **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)

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## **PLUMBER**

### **Plumber**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$67.25**

Supplemental Benefit Rate per Hour: **\$31.80**

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  
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**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:** 7/1/2017 - 6/30/2018

**Wage Rate per Hour:** \$53.88

**Supplemental Benefit Rate per Hour:** \$25.36

### **Overtime Description**

Double time the regular rate after a 7 hour day - unless for new construction site work where the plumbing contract price is \$1.5 million or less, the hours of labor can be 8 hours per day at the employers option. On Alteration jobs when other mechanical trades at the site are working an eighth hour at straight time, then the plumber shall also work an eighth hour at straight time.

### **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

### **Shift Rates**

Shift work, when directly specified in public agency or authority documents where plumbing contract is \$8 million or less, will be permitted. 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)

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## **PLUMBER (MECHANICAL EQUIPMENT AND SERVICE)**

(Mechanical Equipment and Service work shall include any repair and/or replacement of the present plumbing system.)

### **Plumber**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$41.20**  
Supplemental Benefit Rate per Hour: **\$15.41**

**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

(Plumbers Local # 1)

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**PLUMBER (RESIDENTIAL RATES FOR 1, 2 AND 3 FAMILY HOME CONSTRUCTION)**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$46.66**  
Supplemental Benefit Rate per Hour: **\$22.95**

**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

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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Thanksgiving Day  
Day after Thanksgiving  
Christmas Day

## **Paid Holidays**

None

## **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)

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## **PLUMBER: PUMP & TANK**

### **Oil Trades (Installation and Maintenance)**

### **Plumber - Pump & Tank**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$64.22**

Supplemental Benefit Rate per Hour: **\$23.21**

## **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**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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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)

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**POINTER, WATERPROOFER, CAULKER, SANDBLASTER,  
STEAMBLASTER**  
(Exterior Building Renovation)

**Journeyperson**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$52.57

Supplemental Benefit Rate per Hour: \$25.80

**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 4:30 P.M.) is to be paid at time and one half the regular rate.

(Bricklayer District Council)

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## ROOFER

### Roofer

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$41.50**

Supplemental Benefit Rate per Hour: **\$32.27**

### 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.

(Local #8)

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## SHEET METAL WORKER

### Sheet Metal Worker

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$48.90**

Supplemental Benefit Rate per Hour: **\$48.00**

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.)

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$39.12

Supplemental Benefit Rate per Hour: \$48.00

**Sheet Metal Worker - Duct Cleaner**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$12.90

Supplemental Benefit Rate per Hour: \$8.07

**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)

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**SHEET METAL WORKER - SPECIALTY**

**(Decking & Siding)**



OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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## **Sheet Metal Specialty Worker**

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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$44.57**

Supplemental Benefit Rate per Hour: **\$25.02**

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)

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## **SHIPYARD WORKER**

### **Shipyard Mechanic - First Class**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$28.12**

Supplemental Benefit Rate per Hour: **\$3.03**

### **Shipyard Mechanic - Second Class**

Effective Period: 7/1/2017 - 6/30/2018

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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Wage Rate per Hour: **\$23.35**  
Supplemental Benefit Rate per Hour: **\$2.85**

**Shipyard Laborer - First Class**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$20.96**  
Supplemental Benefit Rate per Hour: **\$2.76**

**Shipyard Laborer - Second Class**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$15.24**  
Supplemental Benefit Rate per Hour: **\$2.54**

**Shipyard Dockhand - First Class**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$22.89**  
Supplemental Benefit Rate per Hour: **\$2.83**

**Shipyard Dockhand - Second Class**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$16.51**  
Supplemental Benefit Rate per Hour: **\$2.58**

**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 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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$47.67**

Supplemental Benefit Rate per Hour: **\$50.67**

### **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

Washington's Birthday

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)

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## **STEAMFITTER**

### **Steamfitter I**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$55.50**

Supplemental Benefit Rate per Hour: **\$55.29**

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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Supplemental Note: Overtime supplemental benefit rate: \$109.84

### **Steamfitter -Temporary Services**

The steamfitters shall not do any other work and shall not be permitted to work more than one shift in a twenty-four hour day. When steamfitters are present during the regular working day, no temporary services steamfitter will be required

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.18**

Supplemental Benefit Rate per Hour: **\$44.84**

### **Overtime**

Double time the regular rate after a 7 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

### **Shift Rates**

Work performed between 3:30 P.M. and 7:00 A.M. and on Saturdays, Sundays and Holidays shall be at double time the regular hourly rate and paid at the overtime supplemental benefit rate above.

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### **Steamfitter II**

For heating, ventilation, air conditioning and mechanical public works contracts with a dollar value not to exceed \$15,000,000 and for fire protection/sprinkler public works contracts not to exceed \$1,500,000.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$55.50**

Supplemental Benefit Rate per Hour: **\$55.29**

Supplemental Note: Overtime supplemental benefit rate: \$109.84

### **Steamfitter -Temporary Services**

**OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
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The steamfitters shall not do any other work and shall not be permitted to work more than one shift in a twenty-four hour day. When steamfitters are present during the regular working day, no temporary services steamfitter will be required.

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$42.18**

Supplemental Benefit Rate per Hour: **\$44.84**

### **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

### **Shift Rates**

May be performed outside of the regular workday except Saturday, Sunday and Holidays. A shift shall consist of eight working hours. All work performed in excess of eight hours shall be paid at double time. No shift shall commence after 7:00 P.M. on Friday or 7:00 P.M. the day before holidays. All work performed after 12:01 A.M. Saturday or 12:01 A.M. the day before a Holiday will be paid at double time. When shift work is performed the wage rate for regular time worked is a thirty percent premium together with fringe benefits.

On Transit Authority projects, where work is performed in the vicinity of tracks all shift work on weekends and holidays may be performed at the regular shift rates.

Local #638

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## **STEAMFITTER - REFRIGERATION AND AIR CONDITIONER (Maintenance and Installation Service Person)**

### **Refrigeration and Air Conditioner Mechanic**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$39.50**  
Supplemental Benefit Rate per Hour: **\$15.81**

**Refrigeration and Air Conditioner Service Person V**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$32.46**  
Supplemental Benefit Rate per Hour: **\$14.16**

**Refrigeration and Air Conditioner Service Person IV**

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$26.89**  
Supplemental Benefit Rate per Hour: **\$12.80**

**Refrigeration and Air Conditioner Service Person III**

Filter changing and maintenance thereof, oil and greasing, tower and coil cleaning, scraping and painting, general housekeeping, taking of water samples.

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$23.08**  
Supplemental Benefit Rate per Hour: **\$11.79**

**Refrigeration and Air Conditioner Service Person II**

Filter changing and maintenance thereof, oil and greasing, tower and coil cleaning, scraping and painting, general housekeeping, taking of water samples.

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$19.14**  
Supplemental Benefit Rate per Hour: **\$10.85**

**Refrigeration and Air Conditioner Service Person I**

Filter changing and maintenance thereof, oil and greasing, tower and coil cleaning, scraping and painting, general housekeeping, taking of water samples.

Effective Period: 7/1/2017 - 6/30/2018  
Wage Rate per Hour: **\$14.00**  
Supplemental Benefit Rate per Hour: **\$9.76**

**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.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

### **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 #638B)

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## **STONE MASON - SETTER**

### **Stone Mason - Setter**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$53.62**

Supplemental Benefit Rate per Hour: **\$41.65**

### **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

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

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)

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## **TAPER**

### **Drywall Taper**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$47.82**

Supplemental Benefit Rate per Hour: **\$22.68**

### **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

### **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**

### **(Voice Installation Only)**

#### **Telecommunication Worker**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$40.35**

Supplemental Benefit Rate per Hour: **\$13.19**

Supplemental Note: The above rate applies for Manhattan, Bronx, Brooklyn, Queens. \$12.64 for Staten Island only.

#### **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

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

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**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

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.)

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## TILE FINISHER

### Tile Finisher

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$41.13

Supplemental Benefit Rate per Hour: \$31.18

### 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

### 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 (1¼) 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: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$53.19**

Supplemental Benefit Rate per Hour: **\$35.35**

### **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 (1¼) times the regular straight time rate of pay for the seven hours of actual off-shift work.

(Local #7)

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## **TIMBERPERSON**

### **Timberperson**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$48.00**

Supplemental Benefit Rate per Hour: **\$49.16**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 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.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Time and one half the regular hourly rate after 40 hours in any work week.

## 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.

(Local #1536)

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## TUNNEL WORKER

### Blasters, Mucking Machine Operators (Compressed Air Rates)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$62.37

Supplemental Benefit Rate per Hour: \$52.39

### Tunnel Workers (Compressed Air Rates)

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: \$60.21

Supplemental Benefit Rate per Hour: \$50.65

### Top Nipper (Compressed Air Rates)

Effective Period: 7/1/2017 - 6/30/2018

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

Wage Rate per Hour: **\$59.11**

Supplemental Benefit Rate per Hour: **\$49.74**

**Outside Lock Tender, Outside Gauge Tender, Muck Lock Tender (Compressed Air Rates)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$58.04**

Supplemental Benefit Rate per Hour: **\$48.81**

**Bottom Bell & Top Bell Signal Person: Shaft Person (Compressed Air Rates)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$58.04**

Supplemental Benefit Rate per Hour: **\$48.81**

**Changehouse Attendant: Powder Watchperson (Compressed Air Rates)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$50.87**

Supplemental Benefit Rate per Hour: **\$46.11**

**Blasters (Free Air Rates)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$59.52**

Supplemental Benefit Rate per Hour: **\$50.03**

**Tunnel Workers (Free Air Rates)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$56.97**

Supplemental Benefit Rate per Hour: **\$47.89**

**All Others (Free Air Rates)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$52.63**

Supplemental Benefit Rate per Hour: **\$44.29**

**Microtunneling (Free Air Rates)**

Effective Period: 7/1/2017 - 6/30/2018

Wage Rate per Hour: **\$45.58**

Supplemental Benefit Rate per Hour: **\$38.31**

**Overtime Description**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK  
§220 PREVAILING WAGE SCHEDULE

For Repair-Maintenance Work on Existing Equipment and Facilities - Time and one half the regular rate after a 7 hour day, or for Saturday, or for Sunday. Double time the regular rate for work on a holiday.  
For Small-Bore Micro Tunneling Machines - Time and one-half the regular rate shall be paid for all overtime.

**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  
Election Day  
Veteran's Day  
Thanksgiving Day  
Christmas Day

(Local #147)

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**WELDER**

**TO BE PAID AT THE RATE OF THE JOURNEYPEPERSON IN THE TRADE  
PERFORMING THE WORK.**

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NEW YORK CITY DEPARTMENT OF  
DESIGN + CONSTRUCTION

Issue Date - June 01, 2013  
Revised - January 15, 2015

# **DDC STANDARD GENERAL CONDITIONS FOR SINGLE CONTRACT PROJECTS**





NEW YORK CITY DEPARTMENT OF  
DESIGN + CONSTRUCTION

Issue Date - June 01, 2013  
Revised - January 15, 2015

No Text



**DIVISION 01 – DDC STANDARD GENERAL CONDITIONS  
SINGLE CONTRACT PROJECTS  
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NEW YORK CITY DEPARTMENT OF  
DESIGN + CONSTRUCTION

Issue Date - June 01, 2013  
Revised - January 15, 2015

NO TEXT



## SECTION 01 10 00 SUMMARY

### 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. 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 (Schedule A through F), (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" shall 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 SCOPE AND INTENT:

- A. Description of Project: Refer to the Addendum for a description of the project.

<b>REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 1.4 B</b>
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- 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, "SUSTAINABLE DESIGN REQUIREMENTS FOR LEED 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 shall be in accordance with ASHRAE and USGBC LEED-NC procedures, as described in Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS, and the Addendum to the General Conditions. The Contractor shall cooperate with the commissioning agent and provide whatever assistance is required.
- D. PROGRESS SCHEDULE: Refer to Section 01 32 00 CONSTRUCTION PROGRESS DOCUMENTATION 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 shall be performed by the Contractor as though it were originally delineated or described. The cost of such work shall 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 shall be performed by the Contractor. The cost of such work shall 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, shall 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 shall 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 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 before the submission of the bid as to what shall 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 shall be subject to the terms of the Contract. The Supplementary Drawings shall 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 shall 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 shall 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 shall verify all dimensions, quantities and details shown on the Contract Drawings, Schedules, or other data received from the Commissioner, and shall notify the Commissioner of all errors, omissions, conflicts and discrepancies found therein. Notice of such errors shall be given before the Contractor proceeds with any work. Figures shall be used in preference to scale dimensions and large-scale drawings in preference to small-scale drawings.

#### **1.7 SHOP DRAWINGS AND RECORD DRAWINGS:**

Refer to Division I Section 01 33 00 – SUBMITAL 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:**

Refer to Division I Section 01 50 00 – TEMPORARY FACILITIES SERVICES AND CONTROLS for the responsibilities of the Contractor.

#### **1.9 DUST CONTROL:**

The Contractor shall 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, shall 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 insure 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 shall 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 shall be accompanied by a schedule of the types and quantities of materials, and shall 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 shall 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 shall set apart and separately store at the place or places of storage all materials and shall clearly mark same "PROPERTY OF THE CITY OF NEW YORK", and further, shall 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 shall be stored at such locations as shall 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 shall 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 shall 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 shall be payable to the City of New York. It shall be in such terms and amounts as shall be approved by the Commissioner and shall be placed with a company duly licensed to do business in the State of New York. The Contractor shall 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 shall 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 shall 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, shall 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 shall have and may exercise any and all other remedies at law for the recovery of such cost, charges and expenses. There shall be no



increase in the Contract price for such costs, charges and expenses and the Contractor shall not make any claim or demand for compensation therefore.

6. The Contractor shall 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 shall 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, shall 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 shall 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 shall 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 shall 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 shall 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 shall 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 shall 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 shall 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, shall preclude the Contractor from payments under the Contract.





14. The Contractor shall include in each succeeding partial estimate requisition a summary of materials stored which shall 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 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 shall 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 shall 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 shall be deemed included in the total Contract Price. The Detailed Bid Breakdown shall reflect, and the Mobilization Payment shall be made, in accordance with the following schedule:

Contract Amount	Percent	Mobilization
Less than - \$ 50,000	x 0	= 0
\$ 50,000 - \$ 100,000	x	= \$ 6,000
\$ 100,001 - \$ 500,000	x 6	= \$ 6,000 (min) - \$ 30,000 (max)
\$ 500,000 - \$ 2,500,000	x 5	= \$ 30,000 (min) - \$ 125,000 (max)
Over - \$ 2,500,000	x 4	= \$ 125,000 (min) - \$ 300,000 (max)

The Contractor may requisition for one-half (1/2) of 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 bonds.
3. Approval by the Department of Design and Construction of the coordinated progress schedule for the project and the Contractor's Shop Drawing schedule.

The remaining balance of the Mobilization Payment may be requisitioned only after 10 percent (10%) of the Contract price, exclusive of the total amount of Mobilization Payments made or to be made hereunder, shall have been approved for payment.

- E. **ULTRA LOW SULFUR DIESEL FUEL AND BEST AVAILABLE TECHNOLOGY REPORTING:** The Contractor shall 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 shall 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 shall (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 shall 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) shall 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 shall 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 shall 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 shall be made as brief as possible, and only at such time stated.
  - 2 Under no circumstances shall 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 shall be avoided at all times and necessary noise shall 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 shall 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 shall be borne by the Contractor.



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- 6 The Contractor shall 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 shall give ample written notice in advance to the Commissioner and personnel at the facility of any required shutdown.

**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 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. 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, "SUSTAINABLE DESIGN REQUIREMENTS FOR LEED 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 shall be in accordance with ASHRAE and USGBC LEED-NC procedures, as described in Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS. The Contractor shall 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 without limitation the following.
  - 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: include without limitation the following:
  - 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 PROJECT 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" shall 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 shall 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 shall 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 accessibility 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 accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
- B. The Contractor shall prepare memoranda for distribution to its subcontractors and other involved entities, outlining special procedures required for coordination. Such memoranda shall include required notices, reports, and meeting minutes as applicable.
- C. Administrative Procedures: The Contractor shall 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 shall 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 shall 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 shall 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 15 days after the Notice to Proceed, the Contractor shall 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 list in Project meeting room, in temporary field office, and by each temporary telephone. Keep 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 shall have their representatives present to discuss all details relative to the execution of the work. The Resident Engineer shall 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 shall 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 shall 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.

2. Attendees: Authorized representative of the Client 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 shall 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 Requests for Information (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. Client 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
  - 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 shall 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. Client 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
  - 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
  - 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 shall prepare and submit an RFI in the form specified by the Resident Engineer.
  1. RFI shall 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 shall prepare, maintain, and submit a tabular log of RFIs organized by the RFI number monthly to the Resident Engineer.





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4. On receipt of responses and action to the RFI, the Contractor shall 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).

**1.8 CORRESPONDENCE:**

Copies of all correspondence to DDC shall be sent directly to the Resident Engineer at the job site.

**1.9 CONTRACTOR'S DAILY REPORTS:**

The Contractor shall 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 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 establishing an effective base line schedule for the project and documenting the progress of construction during performance of the Work by developing, revising as necessary, various documents including but not limited to the following:
1. Baseline Construction Schedule.
  2. Composite Schedule for entire project
  3. Recovery Composite Schedule
  4. Revised and/or updated Composite Schedule
  5. Submittals Schedule.
  6. Daily construction reports.
  7. Material location reports.
  8. Field condition reports.
  9. Special reports.
- B. RELATED SECTIONS: include without limitation the following:
1. Section 01 10 00 SUMMARY
  2. Section 01 32 22 PHOTOGRAPHIC DOCUMENTATION
  3. Section 01 33 00 SUBMITTAL PROCEDURES
  4. 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" shall 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. **Baseline Construction Schedule:**  
A horizontal bar chart type schedule (Microsoft Project OR similar program) listing all the activities and their duration for entire contract duration OR construction period, including logical ties and interrelations between the activities necessary for the timely and successful completion of the project. Critical path activities shall be clearly marked. The Baseline construction schedule is a preliminary schedule that must be reviewed and approved by the Resident Engineer.
- D. **Composite Schedule:**  
A composite horizontal bar chart type schedule (Microsoft Project OR similar program) listing all activities to be performed by the Contractor and its subcontractors, the duration of each activity including logical ties and interrelations between activities, and the sequence of each of necessary activities for the timely and successful completion of the project within the stipulated contract duration. Critical path activities shall be clearly marked. The Composite schedule must be signed and submitted by the Contractor within thirty (30) calendar days after the date established for commencement of the Contract, unless otherwise directed. The Composite Schedule must be reviewed and approved by the Resident Engineer.
- E. **Recovery Composite Schedule:** A Recovery Composite Schedule is not required unless the City issues an Acceleration Change Order.  
  
A Composite 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 keep the delays as minimum as possible and must establish the nature of efforts such as 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.  
  
Such schedule must be prepared and submitted within Five (5) calendar days of request by the Resident Engineer. The Recovery Composite Schedule must be reviewed and approved by the Resident Engineer.
- F. **Revised and/or Updated Composite Schedule:**  
  
A Baseline construction schedule OR Composite Schedule OR Recovery Composite 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 Composite Schedule must be reviewed and approved by the Resident Engineer.
- G. **Activity:** A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
- H. **Event:** The starting or ending point of an activity.
- I. **Fragment:** A part of the activity that breaks down activities into smaller activities for greater detail.
- J. **Milestone:** A key or critical point in time for reference or measurement.
- K. **Network Diagram:** A graphic diagram of a network schedule, showing activities and activity relationships.



## PART II – PRODUCTS

### 2.1 BASELINE CONSTRUCTION SCHEDULE:

- A. The Contractor shall prepare a Baseline horizontal bar-chart-type construction schedule for the project. Submit the Baseline Construction Schedule to the Resident Engineer within (15) fifteen calendar days after the date established for commencement of the Contract, unless directed otherwise. The Baseline Schedule must be reviewed and approved by the Resident Engineer.
1. Provide a separate time bar for each significant construction activity. Coordinate each activity on the schedule with other construction activities for proper interrelationship & sequence.
  2. Duration: The duration of each activity on the schedule besides installation must clearly show required duration of filing for permits, inspections, testing, approvals, shop drawings and materials submittals and approvals, fabrication, delivery, phasing for each construction activity.
  3. Schedule shall be time-scaled in not more than weekly increments, with the dates of the first day (Monday) of each week indicated.
  4. Completion of all the project activities shall be indicated in advance of the date established for completion of the Contract, allowing time for required inspection and punch list work.
  5. Clearly show time bar for all the tasks, to be completed before start of physical work of scheduled activities, including but not limited to obtaining required permit, subcontractor approval, submission and approval of shop drawings, field verification, time for fabrication and delivery, testing of materials and/or samples, preparation and approval of mock-up sample, curing, pre-testing of soil, pre-testing of equipment - including start up, testing & adjusting, filing for inspection by regulatory agencies, training, final use, etc. required to maintain orderly progress of the activity. A special consideration must be given to those activities requiring early approvals because of long lead-time for manufacture or fabrication.
  6. Phasing: Arrange all activities in proper sequence to reflect requirements for phased completion, work by other entities, work by the City, City furnished items, coordination with existing work, limitations arising due to continued occupancies, non-interruptible services, partial completion for occupancy, site restrictions, provisions for future work, seasonal variations, environmental control, and similar conditions of the project.
  7. Arrange all activities and/or show interrelationship and logical sequence of all activities, determine and mark all critical path activities including any phasing reflecting actual project condition.
  8. Keep at least two blank horizontal bars between all activities for recording actual progress and submitting Revised Schedule as defined in Sub-Section 1.3 G
  9. If necessary a new revised schedule shall be prepared in the same manner as outlined above.

### 2.2 COMPOSITE SCHEDULE FOR THE PROJECT:

- A. The Contractor shall prepare a Composite Schedule based on the approved Baseline Schedule. Such schedule shall indicate graphically and chronologically the start and completion of each and every activity, including all the pre-activity and post activity tasks. Keep at least two blank horizontal bars between all activities for recording actual progress and/or revisions.
1. If necessary the Contractor shall meet with each subcontractor and with the Resident Engineer to review and make warranted adjustments and finalize the Composite Schedule. Once the schedule is finalized, the Contractor shall sign and date a reproducible form of the Composite Schedule. The Composite Schedule must be finalized and signed by the Contractor within (30) thirty calendar days after the date established for commencement of the Contract, unless directed otherwise. The Composite Schedule must be reviewed and approved by the Resident Engineer.



### **2.3 RECOVERY COMPOSITE SCHEDULE:**

- A. A Recovery Composite Schedule is not required unless the City issues an Acceleration Change Order. A Recovery Composite 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, must be developed and submitted within (5) five calendar days of the request by the Resident Engineer. Such Recovery Composite Schedule shall include all information as defined in Article 1.3 F and shall be prepared in the same manner as outlined in Sub-Sections 2.1 and 2.2. The Recovery Composite Schedule must be reviewed and approved by the Resident Engineer.

### **2.4 REVISED AND/OR UPDATED COMPOSITE SCHEDULE:**

- A. The Contractor shall revise and/or update the approved Composite Schedule as directed. The Revised schedule shall be prepared in the same manner as outlined above in Sub-Sections 2.1 and 2.2.
- B. The Contractor shall mark actual progress, delays, work stoppage etc. in the row just below the approved schedule for the respective activity so that revisions can be compared.
- C. Such schedule also shall indicate graphically and chronologically any revisions to the start and completion of the remaining activities including revisions to all the pre-activity and post activity tasks for all subcontractors.
- D. If necessary, the Contractor shall meet with each subcontractor and with the Resident Engineer to review and make warranted adjustments and finalize the Revised Composite Schedule. Once the schedule is finalized, the Contractor shall sign and date a reproducible form of the Schedule. Such schedule must be prepared and submitted by the Contractor within Five (5) calendar days of request by the Resident Engineer. The Revised Composite Schedule must be reviewed and approved by the Resident Engineer.

### **2.5 SUBMITTALS SCHEDULE:**

- A. Preparation: The Contractor shall 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.
- B. SCHEDULE F: Schedule F sets forth all submittal requirements for shop drawings and material samples. Schedule F is included in the Addendum. At the kick-off meeting, the Contractor must review this Schedule with the Resident Engineer and the Design Consultant. Within 10 days after the kick-off meeting, the Contractor must complete information on Schedule F concerning the submission date, the required delivery date and the fabrication time. For all required submittals of shop drawings and material samples, the Schedule F provided by the Contractor must indicate a submission date which is at least 20 business days prior to the date of the manufacture of the item or materials to be installed. In addition, if so directed by the Commissioner, the Schedule F provided by the Contractor must indicate a submission date for shop drawings and/or material samples of specified items or materials which is within 60 business days after the kick-off meeting. In the event of any conflict between the Specifications and Schedule F, Schedule F shall take precedence; provided, however, in the event of an omission from Schedule F (i.e., Schedule F omits either a reference to or information concerning a submittal requirement which is set forth in the Specifications), such omission from Schedule F shall have no effect and the Contractor's submittal obligation, as set forth in the Specifications, shall remain in full force and effect.
- C. Review: The Resident Engineer will review the Schedule F submitted by Contractor. Upon acceptance, the Resident Engineer will date and sign the schedule as approved and transmit it to the Consultant, Contractor and others within DDC as he/she deems appropriate.



## 2.6 REPORTS:

- A. Daily Construction Reports: The Contractor shall submit to the Resident Engineer written Daily Construction Reports at the end of each work day, 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 shall be prepared by the Contractor's Superintendent and shall bear the Contractor's Superintendents signature. Each report shall contain the following information:

1. List of 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
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 Completions and occupancies.
18. Substantial Completions 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 shall submit a Material Location Report at weekly OR monthly intervals as determined and established by the Resident Engineer. Such report shall include a comprehensive list of materials delivered to and stored at Project site. List shall 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.

## 2.7 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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No Text



**SECTION 01 32 33**  
**PHOTOGRAPHIC DOCUMENTATION**

**REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SECTION 01 32 33**

**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 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 shall employ and pay for the services of a professional photographer who shall take photographs showing the progress of the work for all Contracts.

**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" shall 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 color prints of each photographic view for each trade to the Resident Engineer. Such photographs shall be included in each monthly progress report or as otherwise directed by the Resident Engineer.
- D. Construction Photograph Negatives: Submit a complete set of photographic negatives in individually protected negative sleeves with each submittal of prints. Identify negatives with label matching photographic prints.
- E. Digital Images: If Digital Media is used, submit a complete set of digital color image electronic files on CD-ROM with each submittal of prints. Identify electronic media with date photographs were taken. Submit images that have same aspect ratio as the sensor, un-cropped.

#### 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 years.

#### 1.6 COORDINATION:

- A. The Contractor and its subcontractor(s) shall cooperate with the photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities, including temporary lighting required to produce clear, well-lit photographs without obscuring shadows.

#### 1.7 COPYRIGHT:

- A. The Contractor shall include the provisions set forth below in the agreement between the Contractor and the Photographer who will provide the construction photographs described in this section. The Contractor shall 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, shall 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") shall 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 shall 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 shall retain no copyright or intellectual property interest in the Copyrightable Materials. The Copyrightable Materials shall 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 shall 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 shall be provided to the City.

## **PART II – PRODUCTS**

### **2.1 PHOTOGRAPHIC MEDIA:**

- A. Photographic Film: Medium format, 2-1/4 by 2-1/4 inches (60 by 60 mm).
- B. Digital Images:
1. Construction Progress Images: Color images in JPEG format with minimum sensor size of 1.3 megapixels.
  2. Presentation Quality Images: Provide Color images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 4.0 megapixels, and at an image resolution of not less than 1024 by 768 with 8"x10" original capture at 300 dpi or greater.
- 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 1inch 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 using the maximum range of depth of field, and that are 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. Film Images:
1. Date Stamp: Unless otherwise indicated, date and time stamp each photograph as it is being taken so stamp is integral to photograph.

2. Field Office Prints: Retain one set of prints of progress photographs in the field office at Project site, available at all times for reference. Identify photographs same as for those submitted to Commissioner.
- C. 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 CD-ROM in the field office at Project site, available at all times for reference. Identify images same as for those submitted to Commissioner.

### 3.2 PRE-CONSTRUCTION & PRE-DEMOLITION PHOTOGRAPHS:

- A. Before commencement of Contract work at the 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 NYC 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 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 shall 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, shall 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.



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Revised - January 15, 2015

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 color photographic prints of each view as directed.

**3.5 DVD RECORDING:**

- A. When DVD Recording of Demonstration and Training sessions is required for Non-Commissioned projects the Contractor shall 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. Take color photographs of minimum eight (8) unobstructed views of the completed project or project and site, as directed by the Commissioner and after all scaffolding, hoists, shanties, field offices or other temporary work has been removed and final cleaning is done after date of Substantial Completion for submission as Project Record Documents. 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**



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No Text



## SECTION 01 33 00 SUBMITTAL 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].

#### 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 shall not relieve the Contractor of responsibility for the accuracy of such Shop Drawings, nor for the proper fitting and construction of the work, nor of the furnishing of materials or work required by the Contract and not indicated on the Shop Drawings. Approval of Shop Drawings shall not be construed as approving departures from the Contract Drawings, Supplementary Drawings or Specifications.
- D. 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 DVD 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 | SUSTAINABLE DESIGN REQUIREMENTS 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.
- B. Design Consultant: "Design Consultant" shall 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. Submittals may be rejected for non-compliance with the Contract.
- E. Shop Drawings: Include 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 shall 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 shall 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) shall include, without limitation, the following information:
  - 1. General Construction work showing the reflective ceiling plan including starting points, ceiling and beam soffits elevations, ceiling heights, roof openings, etc.
  - 2. HVAC Contract work showing ductwork, heating and sprinkler piping, location of grilles, registers etc. and access doors in hung ceilings. Locations shall be fixed by elevations and dimensions from column centerlines and/or walls.
  - 3. Plumbing Contract work including piping, valves, cleanouts etc., indicating locations and elevations and shall indicate the necessary access doors.
  - 4. Electrical Contract work indicating fixtures, large conduit runs, clearances, pull boxes, junction boxes, sound system speakers, etc.
- B. The Contractor shall 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 Consulting where necessary, to resolve any conflicts that become apparent.

- C. Upon resolution of any conflicts, the Contractor shall provide a final Coordination Drawing(s) which will become the Master Coordination Drawing(s). The Master Coordination Drawing(s) shall 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) shall be provided by the Contractor to each of the appropriate subcontractor(s), the Resident Engineer and the Design Consultant for information.
- E. Shop Drawings shall not be submitted prior to acceptance of the final coordinated drawings and shall 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 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
- 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 shall 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 shall be, generally, as follows:

- a. The Contractor shall make available to its subcontractors the necessary Contract Documents and shall instruct such subcontractor to determine dimensions and conditions in the field, particularly with reference to coordination between the trade subcontractors. The Contractor shall direct its subcontractors to prepare Shop Drawings for submission to the Design Consultant in accordance with the requirements of these General Conditions. The Contractor shall also direct its subcontractors to "Ring Up" corrections made on all re-submissions for approval, so as to be readily seen, and that the symbol "sub" be used to identify the source of the correction or information that has been added.

The Contractor shall:

1. Review and be responsible to the Commissioner, for information shown on its subcontractor's Shop and Installation drawings and manufacturers' data, and also for 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 shall 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 shall be made in accordance with the Contract Drawings, Specifications and Supplementary Drawings, if any. The Shop Drawings shall be accurate and distinct and give all the dimensions required for the fabrication, erection and installation of the work.
3. Size of Drawings: The Shop Drawings, unless otherwise directed, shall 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 shall be numbered consecutively and shall 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 shall 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, if any, under which it is, or they are required
  - 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 shall be signed by the Contractor and, if applicable, the subcontractor responsible for preparation of the Shop Drawings. Each Shop Drawing shall 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 shall, in its statement, list and clearly describe each such 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 shall submit seven (7) copies of each Shop Drawing to the Design Consultant for his/her review and acceptance. 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 shall 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" shall 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 shall 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 shall be transmitted to the subcontractors so affected. [These accepted Shop Drawings shall 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 shall make specific mention of such variations in its letter of submittal. Acceptance of the Shop Drawings shall 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 shall conform to the procedures specified in Sub-Section 1.6 F, Shop Drawings.
2. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
3. Mark each copy of each 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 shall 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 shall 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" shall 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 00 35 06 - General Electrical Requirements.
  2. Samples shall be in triplicate, of sufficient size to show the quality, type, range of color, finish and texture of the material.
  3. Each of the samples shall 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 shall be as required in the Specifications.
  7. Samples on Display: When samples are specified to be equal to approved product, they shall 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 shall 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 shall be furnished equal in every respect to the accepted samples.
  9. The Acceptance of any samples will be given as promptly as possible, and shall be only for the characteristic color, texture, strength, or other feature of the material named in such approval, and no other. When this approval 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 shall 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 shall 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 Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL; Section 01 81 13, SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS; Section 01 81 13.13, VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES, SEALANTS, PAINTS AND COATINGS FOR LEED BUILDINGS; Section 01 81 19, INDOOR AIR QUALITY REQUIREMENTS FOR LEED BUILDINGS and Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS.
- B. LEED Building submittal information shall be assembled into one package per each applicable specification section, separate from all other non-LEED submittals. Each submittal package shall have a separate transmittal and identification as described in Sub-Section 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 Sub-Section 1.6 of Section 01 81 13 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED PROJECTS.
  - 1. Provide the quantity, length, area, volume, weight, and/or cost of each product submitted as required to satisfy LEED documentation requirements. Refer to Sub-Section 1.6 of Section 01 81 13 SUSTAINABLE DESIGN REQUIREMENTS FOR LEED PROJECTS.

**1.8 ULTRA LOW SULFUR DIESEL FUEL AND BEST AVAILABLE TECHNOLOGY REPORTING:**

- A. In accordance with Section 01 10 00 Summary, Sub-Section 1.5 E, the Contractor shall 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 shall be in accordance with the schedule, format, directions and procedures established by the Commissioner.

**1.9 CONSTRUCTION PHOTOGRAPHS AND DVD RECORDINGS:**

- A. Submit construction progress photographs and DVD 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.



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**PART II – PRODUCTS (Not Used)**

**PART III – EXECUTION (Not Used)**

**END OF SECTION 01 33 00**

**SUBMITTAL PROCEDURES**

**01 33 00 - 10**



**SECTION 01 35 03**  
**GENERAL MECHANICAL REQUIREMENTS**

**REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 35 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. The General Mechanical Requirements contained herein shall 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, as determined by the Commissioner, shall 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 -: shall mean 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 shall 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 shall 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 shall follow these Contract Drawings in laying out the work and verify the spaces in which it will be installed. The Contractor shall 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 ACCESSIBILITY:**

All work shall be installed by the Contractor so as to be readily accessible for inspection, operation, maintenance and repair. Minor deviations from the arrangement indicated on the Contract Drawings may be made to accomplish this, but they shall not be made without approval by the Commissioner.

#### **1.7 CHANGES IN PIPING, DUCTS, AND EQUIPMENT:**

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 shall make such changes as directed and approved, without extra cost to the City.

#### **1.8 CLEANING OF PIPING, DUCTS, AND EQUIPMENT:**

Piping, ducts and equipment shall 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 shall pay for repairs to other work damaged in the course of removing obstructions. For work on existing piping, ducts and equipment the Contractor shall 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:**

Unless otherwise particularly specified, all equipment of the same kind, type or classification, and used for identical purposes, shall be the product of one (1) manufacturer.

#### **1.10 SUPPORTING STRUCTURES DESIGNED BY THE CONTRACTOR:**

Unless otherwise specified, supporting structures for equipment to be furnished by the Contractor shall be designed by an Engineer licensed in New York State retained by the Contractor. Supporting structures shall be built by the Contractor of sufficient strength to safely withstand all stresses to which they may be subjected, within permissible deflections, and shall meet the following standards:

- A. Structural Steel - ASTM Standard Specifications, AISC and New York City Construction Codes.



- B. Concrete for supports for equipment shall conform to the Specifications for concrete herein, but in no case shall be less than the requirements of the New York City Construction Codes for average concrete.
- C. Steel reinforcement for concrete shall be of intermediate grade and shall meet the requirements of the Standard Specifications for Billet Steel-Concrete Reinforcement Bars, ASTM.
- D. Drawings and calculations shall 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 shall 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 shall 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 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 shall 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:**

As soon as conditions permit, the Contractor shall furnish all necessary labor and materials for, and shall 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 shall, prior to the acceptance test, make all changes, adjustments and replacements required.

#### **1.13 INSTRUCTIONS ON OPERATION:**

At the time the equipment is placed in permanent operation by the City, the Contractor shall make all adjustments and tests required by the Commissioner to prove that such equipment is in proper and satisfactory operating condition. The Contractor shall 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:**

On completion of the work, the Contractor shall obtain certificates of inspection, approval, acceptance and of compliance with all laws from all agencies and/or entities having jurisdiction over the work and shall deliver these certificates to the Commissioner in accordance with Section 01 77 00 CLOSEOUT PROCEDURES. The work shall not be deemed substantially complete until the certificates have been delivered. See General Comments regarding problems with specifying items required for substantial completion.

**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 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 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, shall take precedence.
- B. This Section includes the following:
1. Procedure for Electrical Approval
  2. Submittals
  3. Electrical Installation Procedures
  4. Electrical Conduit System Including Boxes (Pull, Junction and Outlet)
  5. Electrical Wiring Devices
  6. Electrical Conductors and Terminations
  7. Circuit Protective Devices
  8. Distribution Centers
  9. Motors
  10. Motor Control Equipment
  11. Schedule of Electrical 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:** means both wire and raceway (rigid steel, heavy wall conduit unless specifically indicated otherwise).
- B. **POWER WIRING:** means 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:** means that 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:** shall mean rigid steel, heavy wall conduit that is hot dipped galvanized inside and outside. The conduit shall 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 shall be used for all exposed work, for all underground conduits in contact with earth and for fire alarms systems, as required by the New York City Construction Codes.
- E. **ELECTRICAL METALLIC TUBING (EMT):** shall mean industry standard thin wall conduit of galvanized steel only. All elbows, bends, couplings and similar fittings which are installed as a part of the conduit system shall be compatible for use with electric metallic tubing. Couplings and terminating fittings shall be of the pressure type as approved by the Commissioner. Set screw fittings will not be acceptable. EMT shall 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):** Shall mean 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 shall 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 Sub-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 shall 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 shall 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 shall be made as required by the Commissioner of all electrical materials, electrical and associated mechanical equipment, and of appliances installed hereunder. The Contractor shall 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, the Contractor on written notice shall remove and promptly replace them with other materials in conformity with the Contract.
- D. **CERTIFICATE OF THE BUREAU OF ELECTRICAL CONTROL, OF THE DEPARTMENT OF BUILDINGS (B.E.C.):** The Contractor must file prior to requesting a substantial completion inspection a Certificate of Inspection issued by B.E.C. On completion of the work the Contractor shall obtain certificates of inspection, approval, acceptance and compliance from all agencies and/or entities having jurisdiction over the work and shall 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 shall be responsible for the equipment until it has been finally inspected, tested and accepted, in accordance with the requirements of the Contract.



2. After delivery and before and after installation, the Contractor shall protect all equipment against theft, injury or damage from all causes. The Contractor shall carefully store all equipment received for work, which is not immediately installed. If any equipment has been subject to possible injury by water, it shall 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, shall be made by the same manufacturer.

## 1.6 SUBMITTALS:

### A. CONTRACTOR'S ELECTRICAL DRAWINGS AND SAMPLES FOR APPROVAL:

1. The Contractor shall 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 shall be included. A letter, in triplicate, shall accompany each submittal.
2. The Contractor shall 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 shall 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 shall 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 shall submit statement in accordance with Section 01 33 00, SUBMITTAL PROCEDURES.
- D. **BULLETINS AND INSTRUCTIONS:** The Contractor shall 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 shall 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 shall 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 accessibility for repairs, even though this selection is the most costly.
- 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, shall be furnished and set by the Contractor installing the conduits. Sleeves in waterproofed floors shall be provided with flashing extending 12 inches in all directions from sleeve and secured to waterproofing. Flashing shall be turned down into space between pipe and sleeve and caulked watertight. Flashing shall be 20 oz. cold rolled copper. Sleeves shall be supplied with welded flanges similar to those supplied by the subcontractor for Plumbing Work and shall extend one (1) inch above finished floor.
- D. **COORDINATION:** The Contractor shall keep in close touch with the construction progress and obtain the necessary information for the accurate placement of its work in ample time 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 shall be repaired or replaced by the Contractor. The Contractor shall 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 shall 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, shall furnish this unit complete with internal wiring, connections, terminal boxes with copper connectors and/or lugs and ample electrical leads, ready for connection and operation. The cost of any wiring, re-wiring or other work required to be done on this unit in the field, shall 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 shall 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 shall be used throughout, unless otherwise directed by the Commissioner. Where the word 'conduit', without a modifier such as, rigid steel, EMT, etc., is specified to be used, it shall 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 shall be installed concealed in finished spaces.
2. **CONDUIT SIZES:** The sizes of conduit shall be as indicated on the Contract Drawings. Wherever conduit sizes are not indicated, the conduit shall meet the requirements of the New York City Electrical Code to accommodate the conductors to be installed therein.
3. Conduits shall be reamed smooth after cutting. No running threads will be permitted. Universal type couplings shall be used where required. Conduit joints shall be screwed up to butt. Empty conduits after installation shall have all open ends temporarily plugged to prevent the entrance of water or other foreign matter.
4. Conduits being installed in concrete or masonry shall be securely held in place during pouring and construction operations. A group of conduits terminating together shall be held in place by a template.
5. **UNDERGROUND STEEL CONDUITS:** Unless otherwise specified, all underground steel conduits in contact with earth shall 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 shall 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 shall 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 shall 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 shall secure and pay for all necessary permits and inspection fees and pay the cost of repaving.
7. **EXPOSED CONDUIT SUPPORTS:** Exposed conduit shall be supported by Galvanized hangers with necessary inserts, beam clamps of approved design or attached to walls or ceilings by expansion bolts. Exposed conduits shall be supported or fastened at intervals not more than five (5) feet.
8. Exposed conduit shall be installed parallel or at right angles to ceiling, walls and partitions. Where direction changes of exposed conduit cannot be made with neat bends, such as required around beams or columns, conduit type fitting shall be used.





9. The conduit shall be installed with an approved expansion joint:
  - 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. Conduit may only enter and leave a floating slab in the vertical direction, and then only in an approved manner. Horizontal entries into floating slabs are not permitted.
11. Conduit installed in pipe shafts shall 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 shall be provided to assure stability of the raceway system.
12. BUSHINGS AND LOCKNUTS: Approved bushings and locknuts shall be used wherever conduits enter outlet boxes, switch boxes, pull boxes, panel board cabinets, etc.
13. CONDUIT BENDS: shall be made without kinking conduit or appreciably reducing the internal diameter. All bends in conduit of two (2) inch in diameter or larger shall be made with an hydraulic or power pipe bender. The radius of the inner edge of any bend shall 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 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 shall 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 shall be turned to approximately 85% of the internal diameter of the raceway to be tested. Two (2) short wire brushes shall be included in the mandrel assembly. Snaking of conduits, ducts, etc., shall be performed by the Contractor in the presence of the Resident Engineer. Any conduits or ducts which reject the mandrel shall 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 shall be assigned to the various conduit runs, and as they test clear they shall 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 shall be tagged.
  - c. TEST RECORDS: As the conduit runs clear, a record shall 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 shall be signed by the Resident Engineer and submitted in triplicate for approval. This record shall be entered on the Contract Record Drawings under Section 01 78 39, CONTRACT RECORD DOCUMENTS.
  - d. CAPPING: All empty conduit and duct openings, after test, shall be capped or plugged by the Contractor as directed.
  - e. DRAG LINES: A drag line shall be left in all empty conduit.

**B. BOXES:**

1. The Contractor shall furnish and erect all pull boxes indicated on the plans or where required. Sides, top and bottom of pull boxes shall be Galvanized coated and shall 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 shall be removable and held in place by corrosion resistant machine screws. Pull boxes in damp locations shall have threaded hubs and gaskets and be NEMA 4X. All pull boxes shall 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 shall be supported from the black iron or structure.
3. The exact location of all outlets in finished rooms shall be as directed. When the interior finish has been applied, the Contractor shall make any necessary adjustment of its work to properly center the outlets. All outlet boxes for local switches near doors shall be located at the strike side of doors as finally hung, whether so indicated on the drawings or not.
4. Exposed wall outlet boxes shall be erected neatly and tight against the walls and securely anchored to same.
5. All wall outlets of each type shall be set accurately at the same level on each floor, except where otherwise specified or directed. Where special conditions occur, outlets shall 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
  - 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 shall be of approved design and construction; of form and dimensions suited and adapted to its specific location; the kind of fixture to be used and the number and arrangements of conduits, etc., connecting therewith. All ferrous outlet boxes shall meet the requirements for zinc coating as specified under Electrical Conduit Systems.
8. There shall be knockouts opened only for the insertion of conduit. Any outlet boxes with more openings than are necessary for conduit insertion shall be sealed by the Contractor without additional charge.
9. All outlet boxes and junction boxes for exposed work shall be galvanized cast iron or cast aluminum with threaded openings. Outlet boxes for exposed inside work in damp locations shall be galvanized cast iron or cast aluminum with threaded hubs and neoprene gaskets.
10. Junction boxes shall not be less than 4 11/16" square and shall be equipped with zinc coated plates. Where plates are exposed they shall be finished to match the room decor.



11. **FIXTURE SUPPORTS:** Outlet boxes supporting lighting fixtures shall be equipped with fixture studs held by approved galvanized stove bolts or integral with the box. Cast iron or malleable boxes shall have four (4) tapped holes for mounting required cover or fixtures.
12. Outlet boxes exposed to the weather or indicated W.P. shall be cast iron or cast aluminum and the covers made watertight with neoprene gaskets. The boxes shall have external lugs for mounting. Drilling of the body of the fitting for mounting will not be permitted. The cover screws shall 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** shall be of the best specification grade, quiet type, and shall have a rating of 20 Amperes at 277 volts, as manufactured by Bryant, Hubbell or approved equal. The mechanism shall be equipped with arc snuffers. They shall be of the tumbler type, single pole. Switches of the 3-way type shall have a similar rating.
- B. **RECEPTACLES:**
  1. **CONVENIENCE OUTLETS:** shall be of the best specification grade, duplex, two-pole, 3-wire, 20 Amperes at 125 volts. It shall have a grounding pole that shall be grounded to the conduit system. Receptacles shall be capable of both back and side wiring and shall have only one (1) grounding screw. Receptacles shall be Hubbell Cat. #5262 or approved equal.
  2. **HEAVY DUTY RECEPTACLE OUTLETS:** shall have the Ampere rating and the number of poles specified on the Contract Drawings and shall be Hubbell, Russell-Stoll, Bryant, AH & H or approved equal. Each outlet shall have a grounding pole, which shall be grounded to the conduit system.
  3. **FLOOR RECEPTACLES:** shall 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 shall 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 shall be in a gasketed, cast iron enclosure.
- E. **PLATES:**
  1. Every convenience outlet and switch outlet shall 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 shall 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 shall be of annealed copper of 98% conductivity. Aluminum wire or cable will not be permitted. The insulation shall be flame retardant, moisture and heat resistant, thermoplastic, type THW or THWN rated for 600 volts at 75 degrees C. for



both wet and dry locations. Wires No. 8 or larger shall be stranded. Wires and cables shall also be subject to the requirements of the NYCEC. Cables for incoming service or wire in conduits contiguous with the earth or in concrete or other damp or wet locations shall be synthetic rubber insulated with neoprene jacket, heat and moisture resistant and shall 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 shall 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 shall not be used for light or power.
- E. **COLOR CODE:** Wires shall have a phase color code, and multiple conductor cables shall be color coded.
- F. **CABLE DATA:** The Contractor shall 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 shall 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 shall not be installed in conduit before the rough plastering work is completed. No conductors shall be pulled into floor conduits before floor is poured.
  - 2. **CONDUIT SECURED IN PLACE** - No conductor shall 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 shall be left with sufficiently long ends for proper connection and stowing.
  - 4. **PULLING COMPOUNDS** - When required to ease the pulling-in of wires into conduit, only approved compounds as recommended by cable manufacturers shall be used.
  - 5. **PRESSURE CONNECTORS** - for wires shall be of the cast copper or forged copper pressure plate type. Connectors shall be O.Z., Burndy, National Electric Products or approved equal.
  - 6. Splices and feeder taps in the gutters of panel boxes shall 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, shall 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 shall be as approved by the connector manufacturer.



- b. For wire and cable No. 6 AWG and larger for branch circuit wiring the seamless tubular connector will only be accepted. Application of this connector shall be with a tool recommended by the connector manufacturer.
9. TAGS: All feeders and risers shall be tagged at both ends, and in all pull and junction boxes and gutter spaces through which they pass. Such tags shall be of fiber and have the feeder designation and size stamped thereon.
10. BRANCH CIRCUIT WIRING:
  - a. The Contractor installing branch circuit wiring shall test the work for correct connections and leave all loop splices in the fixture outlet boxes properly spliced and taped. The Contractor shall provide wire ends long enough for convenient connection to device.
  - b. NEUTRALS: No common neutrals shall be used except for lighting branch circuits. Each neutral wire shall 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 shall 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 shall be cast copper or forged copper pressure plate type. Lugs for 1/0 and larger shall be fastened with two (2) bolts.
2. All lugs shall 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 insure 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.

<b>REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.5</b>
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**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: shall be operable in any position and shall be of the quick-make, quick-break type on manual operation. The handle shall 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 shall be provided, in addition to the "On" and "Off" indication. All circuit breakers shall be of the bolted type.
2. TRIP RATING: Circuit breakers shall 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 shall be designed to break all poles simultaneously. They shall be provided with barriers between poles and arc suppressing devices.
4. ELEMENTS: Multipole circuit breakers shall have frames of not less than a 100 Ampere rating. Multipole circuit breakers for 480 volts AC operation shall have an NEMA interrupting rating of 18,000 Amperes, unless a higher rating is specified in the Specific Requirements 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 shall be provided with interchangeable trip elements, which can be replaced readily.
6. Single pole circuit breakers for branch circuits shall have a frame size of no less than 100 Amperes, and shall 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 shall 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 shall 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 shall insure constant calibration and be capable of withstanding excessive short circuit conditions without injury.
9. CONTACTS: shall be non-welding under operating conditions and of the silver to silver type.
10. TEMPERATURE RISE: Current carrying parts, except thermal elements, shall not rise in temperature in excess of 30 degrees C. while carrying rated current at rated frequency.
11. NUMBERING: Each circuit breaker shall be distinctly numbered when installed in a group with other breakers. The calibration of trip element shall 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 shall be of the type HD of a rating not less than 30 Amperes. Enclosures shall be provided with means for locking. For ratings above 60 Amperes terminals shall have double studs.

<b>REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.6</b>
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**3.6 DISTRIBUTION CENTERS:**

This Section sets forth the construction and installation procedure for Switchboards, Panel boards and Cabinets.

- A. PANELBOARDS-GENERAL TYPE: The panel boards shall be of the automatic circuit breaker type with individual breakers for each circuit, removable without disturbing the other units. Circuit breakers shall be in accordance with the requirements outlined under "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 shall be distinctly numbered.
- C. BUS-BAR CONSTRUCTION AND SUPPORT: Panel Boards shall be of the dead front type and shall have bus bars and branch circuits designed to suit the system and voltage. Current carrying parts, exclusive of circuit breakers shall be copper and based on a maximum density of 1,000 Amperes per square inch. Bus bars for the main switchboard shall be designed for the frame rating of the Service Breaker. Bus bars shall run up the center of the panel, unless otherwise indicated, and shall have connected thereto the various branch circuits. Unless otherwise specified, bus bars for each panel board shall be equipped with main lugs only and capacity as required on Contract Drawings. Where main protection is required, automatic circuit breakers shall be used. A neutral bus of at least the same capacity as a live bus bar shall be provided for the connection of all neutral conductors. Each terminal shall be identified. All current carrying parts, exclusive of circuit breakers, shall be of copper with a minimum number of joints. The bus bar structure shall be a self-supporting unit, firmly fastened to a ½



inch plastic board, extending the full length and width of assembly which shall 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 shall separate neutral bus from other parts of panel.

- D. **CIRCUIT BREAKER ASSEMBLY:** The entire circuit breaker and bus bar assembly shall be mounted on an adjustable metal base or pan and secured to the back of panel box. The panel shall have edges flanged for rigidity.
- E. **PANEL MOUNTING:** The panel shall be centered in the panel box to line up with door openings and set level and plumb so that no live parts are exposed with the door open.
- F. **PANEL CABINET:**
  - 1. **PANEL CABINET INSTALLATION:** When installed surface mounted in panel closets they shall be mounted on Kindorf channel.
  - 2. Where cabinets cannot be set entirely flush due to shallow walls or partitions or where cabinet is extra deep, the protruding sides of cabinet shall 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:** Nameplates where required, shall be made of engraved Lamicoid sheet, or approved equal. Letters and numbers shall be engraved white on a black background (except for Firehouse projects which shall have white letters on a red background). The Contractor shall submit an engraved sample for approval as to design and style of lettering before proceeding with the manufacture of the nameplate. Nameplates shall be of suitable size and shall 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 shall 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., shall be submitted for approval.
- I. **DIRECTORIES:** A directory shall 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 Plasticile, Plexiglass, Lucite, Polycarbonate or approved equal that is not less than 1/16 inch thick over cardboard or heavy paper. The directory shall be typewritten and show the number of each circuit, the name of circuit and lighting or equipment supplied. The size of riser feeder shall be as indicated on directory. The dimensions of directory shall be submitted for approval for each size of panel.
- J. **CONSTRUCTION**
  - 1. **FINISH:** Panel boxes, doors and trim for installation in dry locations, shall be zinc coated after fabrication by the hot-dip galvanizing or electroplate process on inside and outside surfaces. In damp locations, panel boards shall be enclosed and gasketed NEMA 3R type. Panel boards located outdoors or exposed to the weather shall be NEMA 3X type.
  - 2. **PAINTING:** Panel boxes, doors and trim shall receive a coat of approved priming paint and a second coat of approved paint in the field after installation. Paint shall be applied to the inside and outside of boxes and on both sides of trim. Panel trims and doors shall 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 shall apply to all motors furnished in the Contract.

- A. **MOTOR DESIGN:** All motors shall 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 shall prevail. Motors shall have standard NEMA frames and shall have nameplate ratings adequate to meet the specified conditions of operation. Motor performance under variable conditions of voltage and frequency shall be within the limits set in NEMA standards, unless modified in the Specifications. Motors shall be expressly designed for the hazard duty load, voltage and frequency as specified in the Contract. All motor windings shall be copper. All motors intended to operate on a 208 volt system shall 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 shall be considered as a standard for comparison. The requirements of the NEMA standards for motors and generators shall 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 shall bear a nameplate lettered "Quiet Motor." Springs and slip rings shall be of approved non-ferrous material.
- D. **BEARINGS:**
  - 1. Bearings, unless specified otherwise, shall be of the ball or roller type. Motors one (1) horsepower and larger that are equipped with ball roller bearings shall also have lubrication of the pressure-relief greasing type. The Contractor furnishing four (4) or more such motors shall also furnish, as part of the Contract, a pressure grease gun of rugged design, of approximately 10 ounce capacity, complete with necessary adapters. The Contractor shall also provide 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 shall in addition to having protected accessible fittings for oiling be provided with visible means for determining normal oil level. Lubrication shall be positive, automatic and continuous.
- E. **MOTOR TERMINALS AND BOXES:** Each motor shall 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 shall be furnished of ample size to make and house motor connections. These requirements shall be met irrespective of any other standards or practices. Size of cable terminals and conduit terminal box holes shall be subject to approval. For motors five (5) horsepower or larger, each terminal shall 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 shall be of cast iron with threaded hubs and gasketed covers. Cover screws shall be of non-corrosive material.
- F. **MOTOR TEMPERATURE RISES:** The motor nameplate temperature rises for the various types of motor enclosures shall 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 shall meet the requirements of NEMA standards for the size and type of the motors. Tests for heating shall 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 shall comply in design and safety features with such applicable codes, regulations and rulings, and shall 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 shall not exceed 1/4 horsepower.
- I. MOTORS RATED: ½ horsepower and larger shall 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 shall 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 shall 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 breaker, magnetic starter 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 shall furnish as many of these items as are 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 shall 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 30 horsepower, shall have magnetic across the line starters; motors rated above 30 horsepower shall be furnished with reduced voltage (autotransformer type) starter or part winding start with time delay to reduce inrush current. Size of starters shall be based on 200V operation.
  2. SLIP RING: A.C. Motors of the slip-ring type shall be furnished with primary across the line starters interlocked with secondary starting and regulating equipment. The interlocking feature shall 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 shall 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 shall be provided.

- D. **DISCONNECTING BREAKER:** All motor starters, unless otherwise specified, shall 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 shall be contained in the same housing with the starter and shall be operable from outside. Means shall 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 shall 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 shall be provided.
- G.
  - 1. **PANELS:** Motor control devices and appliances shall be mounted on approved insulating slabs with all wiring and connections made on the back of the slabs.
  - 2. **WIRING AND TERMINALS:** Wiring connections for currents of 100 Amperes or less may be made with copper wire or cable with special flameproof insulating coverings. Such wires shall be installed in a neat workmanlike manner, flat against the slab, and held in place by clips. Connections shall 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 shall 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.
  - 3. **COPPER BUS:** For currents exceeding 100 Amperes, copper bus shall be used in place of wires. The bus shall 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 shall provide sufficient areas to keep current density at not more than 1,000 Amperes per square inch.
- H. **COOPERATION:** The Contractor's subcontractor(s) who furnish electrically operated equipment shall 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.
- I. **SPARE PARTS:**
  - 1. **FURNISH:** The Contractor shall furnish the following spare parts pertaining to equipment furnished by each subcontractor.
    - One (1) set of contact fingers and springs and thermal elements for each three (3) (or fraction) of each size of magnetic contactor starter.
    - One (1) holding coil for each three (3) (or fraction) of each size of magnetic contactor starter.
  - 2. **WRAPPER MARKING:** All parts shall be delivered to the Resident Engineer neatly wrapped and boxed and plainly tagged and marked for identification and reordering.



NEW YORK CITY DEPARTMENT OF  
DESIGN + CONSTRUCTION

Division 01 – DDC STANDARD GENERAL CONDITIONS  
SINGLE CONTRACT PROJECTS

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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 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” shall 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 and one or more safety representatives, Commissioner’s designated representatives and other concerned parties for the purpose of reviewing the Contract Safety requirements. The Contractor’s safety requirements shall be reviewed, and implementation of safety provisions pertinent to the Work shall 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 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. Work shall additionally 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 submit copies of shipping manifests and permits from applicable federal, state or local authorities and disposal facilities, and submit certificates that the material has been disposed of in accordance with regulations to the Resident Engineer.
- 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 Bureau of Environmental and Geotechnical Services (BEGS) through the Resident Engineer.
- E. Request for Subcontractor Approval: Any subcontractor performing environmental work shall submit required documentation for approval to perform such work as required by DDC's BEGS.

## PART II – PRODUCTS

### 2.1 PERSONNEL PROTECTIVE EQUIPMENT:

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 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.
- B. The Commissioner shall determine whether the Contractor shall perform tests to determine if the material is hazardous. 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 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**



NEW YORK CITY DEPARTMENT OF  
DESIGN + CONSTRUCTION

Division 01 – DDC STANDARD GENERAL CONDITIONS  
SINGLE CONTRACT PROJECTS

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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. Temporary protection of historic materials during construction
  3. General Protection
  4. Protection during use of heat-generating equipment
  5. Photographic Documentation
  6. 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" shall 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. 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 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 work.
- B. Alternative Methods and Materials: If alternative methods and materials to those indicated are proposed for any phase of work, submit for Commissioner's approval a written description including evidence of successful use on other comparable projects, and program of testing to demonstrate effectiveness for use on this Project.
- C. 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 and the Addendum.
- 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 PROTECTION, GENERAL:**

- A. Comply with manufacturer's written instructions for precautions and effects of products and procedures on adjacent building materials, components, and vegetation.
- B. Ensure that supervisory personnel are present when work begins and during 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 shall 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 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 Commissioner immediately of drains or systems that are stopped or blocked. Do not begin Work of 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 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 shall 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 shall be given for each occurrence and location of work with heat-generating equipment.
  - 2. As far as practical, 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 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 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:

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:

For all projects involving a Landmark Structure or Site, the Contractor, at the completion of the work, shall 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 shall 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 New York City Landmarks Preservation Commission jurisdiction.

**END OF SECTION 01 35 91**



NEW YORK CITY DEPARTMENT OF  
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Division 01 – DDC STANDARD GENERAL CONDITIONS  
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**SECTION 01 40 00**  
**QUALITY REQUIREMENTS**

**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 the following:
- a. Definitions
  - b. Conflicting Requirements
  - c. Quality Assurance
  - d. Quality Control
  - e. Approval of Materials
  - f. Special Inspections (Controlled Inspection)
  - g. Inspections by Other City Agencies
  - h. Certificates of Approval
  - i. Acceptance Tests
  - j. 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 Document requirements.
- D. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
- E. Provisions of this Section do not limit requirements for the Contractor to provide quality-assurance and -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, "SUSTAINABLE DESIGN REQUIREMENTS FOR LEED 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 shall be in accordance with ASHRAE and USGBC LEED-NC procedures, as described in Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS. The Contractor shall 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" shall 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. 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 shall comply with the most stringent requirement as determined by the Commissioner. The Contractor shall 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 shall 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 shall 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 and the Addendum.
- 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 and the Addendum.



- 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 and the Addendum.
- 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 shall provide quality-control services as set forth in the Specifications and those required by Authorities having jurisdiction. The Contractor shall provide quality-control services 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 shall be borne by the Contractor and shall be deemed to be included in the Contract price. The Contractor shall 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 shall 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 shall not employ same entity engaged by the City, unless agreed to in writing by the Commissioner.
  4. The Contractor shall 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 shall submit a certified written report, in triplicate to the Commissioner, of each quality-control service.
  6. Testing and inspecting requested by the Contractor and not required by the Contract Documents are Contractor's responsibility.
  7. The Contractor shall 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 shall engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Results shall 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 shall 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 shall cooperate with entities performing required tests, inspections, and similar quality-control services, and shall provide reasonable auxiliary services as requested. The Contractor shall 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 -control services with a minimum of delay and to 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 shall 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 shall be subject to prior written approval by the Commissioner.
1. **NOTICE** - The Contractor shall 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 shall 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 shall comply with the foregoing before shipping any material.
- J. Certificate of Manufacture: When the Commissioner so requires, the Contractor shall 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 shall 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 B.S.A., M.E.A., B.E.C. Advisory Board, etc.
- K. Acceptance: When materials or manufactured products shall comprise 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 shall make the necessary inspections and tests, and the reports thereof shall 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 shall 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 shall 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 shall be in accordance with the Specifications and shall in no event be less than that necessary to conform to the requirements of the New York City 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 shall 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 shall have a plant of ample capacity and shall have successfully produced similar products. All approvals of materials or equipment that are legally required by the New York City Construction Codes and other governing Authorities must be obtained prior to installation.
- C. All Materials: Fixtures, fittings, supplies and equipment furnished under the Contract shall 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 shall 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 shall 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 New York City Construction Codes, shall 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 shall be an entity compliant with the requirements of the New York City Construction Codes. The Contractor shall 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 shall 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 shall notify the relevant Special Inspector in writing at least 72 hours before the commencement of any work requiring Special Inspection. The contractor shall be responsible for, and bear related costs to assure that all construction or work shall remain accessible and exposed for inspection purposes until the required inspection is completed.
4. Inspections and tests performed under "Special Inspection" shall 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 this 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 shall be responsible for and shall 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 shall 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 shall conform to the requirements of the Specifications, and shall 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 shall give written notice to all concerned 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 shall 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 shall 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 shall 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 shall 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 shall 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



NEW YORK CITY DEPARTMENT OF  
DESIGN + CONSTRUCTION

Division 01 – DDC STANDARD GENERAL CONDITIONS  
SINGLE CONTRACT PROJECTS

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## SECTION 01 42 00 REFERENCES

### 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 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 shall mean and intend approved, acceptable or satisfactory to the Commissioner.
- C. Design Consultant: "Design Consultant" shall 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.
- 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 shall, 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.D.A.A.G.	Americans with Disabilities Act (ADA) – Architectural Barriers Act (ABA)
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 Plumbing Code New York City Building Code New York City Mechanical Code New York City Fuel Gas Code
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.E.C.C	New York City Energy Conservation 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 shall 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 New York City Construction Codes adopts a different or earlier dated version of such standard.
- 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.
- 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)
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 (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)
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
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
FEME	Federal Emergency Management Agency
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.
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
IEST	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.
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)
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
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.
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 <b>Council</b> (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

**PART II – PRODUCTS (Not Used)**

**PART III – EXECUTION (Not Used)**

**END OF SECTION 01 42 00**





NEW YORK CITY DEPARTMENT OF  
DESIGN + CONSTRUCTION

Division 01 – DDC STANDARD GENERAL CONDITION  
SINGLE CONTRACT PROJECTS

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REFERENCES  
01 42 00 -12



**SECTION 01 50 00**  
**TEMPORARY FACILITIES, SERVICES AND CONTROLS**

**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 the following:
- a. Temporary Water System
  - b. Temporary Sanitary Facilities
  - c. Temporary Electric Power, Temporary Lighting System, And Site Security Lighting
  - d. Temporary Heat
  - e. Dewatering Facilities And Drains
  - f. Temporary Field Office for Contractor
  - g. Resident Engineer's Office
  - h. Material Sheds
  - i. Temporary Enclosures
  - j. Temporary Partitions
  - k. Temporary Fire Protection
  - l. Work Fence Enclosure
  - m. Rodent and Insect Control
  - n. Plant Pest Control Requirements
  - o. Project Identification Signage
  - p. Security Guards/Fire Guards on Site
  - q. Project Sign and Rendering
  - r. 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.
- B. Permanent Enclosure: As determined by 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.



- C. Design Consultant: "Design Consultant" shall 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.

#### 1.5 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 shall 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. Install, operate, maintain and protect temporary facilities, services and controls.
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.
  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 shall provide the temporary services, facilities and controls set forth in this Section during other than regular working hours if the Drawings and/or the Specifications indicate that the Work, or specific components thereof, must be performed during other than regular working hours. In such case, all costs for the provision of temporary services, facilities and controls during other than regular working hours shall be deemed included in the total Contract Price.
- B. The Contractor shall provide the temporary services, facilities and controls set forth in this Section during other than regular working hours if a change order is issued directing the Contractor to perform the Work, or specific components thereof, during other than regular working hours. In such case, compensation for the provision of temporary services, facilities and controls during other than regular working hours shall be provided through the change order.

#### 1.8 SERVICES BEYOND COMPLETION DATE:

- A. The Contractor shall 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 punch list work, as certified in writing by the Resident Engineer, or earlier if so directed in writing by the Commissioner. The Contractor shall 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. Provide undamaged materials in serviceable condition and suitable for use intended.
- B. Tarpaulins: Waterproof, fire-resistant UL labeled with flame spread rating of 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 Department of Environmental Protection.

### 2.2 EQUIPMENT:

- A. Provide undamaged equipment in serviceable condition and suitable for use intended.
- B. Water Hoses: Heavy-duty abrasive-resistant flexible rubber hoses, 100 feet (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 will 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. 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. Provide each facility ready for use when needed to avoid delay. Do 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:

<b>REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.2 A</b>
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- A. TEMPORARY WATER SYSTEM - NEW FACILITIES: During construction, the Contractor shall furnish a Temporary Water System as set forth below.
  - 1. Immediately after the Commissioner has issued an order to start work, the Contractor shall file an application with the Dept. of Environmental Protection 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 work, the Contractor shall file an application with the Department of Environmental Protection's Bureau of Water Supply and obtain a permit to install the temporary water supply system. The system shall be installed and maintained for the use of the Contractor and its subcontractors. A copy of the above mentioned permit shall be filed with the Commissioner. The Contractor shall 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 shall 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 shall take the necessary precautions to prevent the temporary water system from freezing. The Contractor shall 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 shall 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 shall 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 shall restore the existing water system to conditions existing before initial use.
  2. The Contractor shall be responsible for all repairs to the existing water system permitted to be used for temporary water service during construction. The Contractor shall 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 Department of Environmental Protection schedule of charges for Building Purposes.
- C. WASH FACILITIES: The Contractor shall 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.
  1. Dispose of drainage properly.
  2. Supply cleaning compounds appropriate for each condition.
  3. Include safety showers, eyewash fountains and similar facilities for the convenience, safety and sanitation of personnel.
- D. DRINKING WATER FACILITIES: The Contractor shall provide drinking water fountains or containerized tap-dispenser bottled-drinking water units, complete with paper cup supplies. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg. F (7 to 13 deg. C).

### 3.3 TEMPORARY SANITARY FACILITIES:

- A. The Contractor shall 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 shall provide temporary single-occupant toilet units of the chemical, aerated recirculation, or combustion type for use by all construction personnel. Units shall be properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material. Quantity of toilet units shall comply with the latest OSHA regulations.
  2. Toilets: 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 shall arrange for the use of existing toilet facilities by all personnel during the execution of the work. The Contractor shall be responsible to clean and maintain facilities in a condition acceptable to the Resident Engineer and, at completion of construction, to restore facilities to their condition at the time of initial use.
2. **MAINTENANCE** - The Contractor shall maintain the temporary toilet facilities in a clean and sanitary manner and make all necessary repairs.
3. **NUISANCES** - The Contractor shall not cause any sanitary nuisance to be committed by its employees or the employees of its subcontractors in or about the work, and shall 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 shall 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 shall 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 shall be provided as follows: The Contractor shall make all necessary arrangements with the Public Utility Company and pay all charges for the Temporary Electric Power system. The Contractor shall 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 shall make payment directly to the Public Utility Company.
- b. **APPLICATIONS FOR METER:** The Contractor shall make 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 shall 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 shall 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 shall be not less than 100 Amperes, 3-phase, 4-wire and shall be of sufficient capacity to take care of all demands for all construction operations and shall meet all requirements of the NYCEC.



**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 shall 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 shall 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 shall 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 shall 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 shall 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 shall be responsible for all costs due to this change over of service and it shall 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 shall 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 shall be under the supervision of the Contractor, but this shall 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 shall 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 shall provide adequate service for the temporary lighting system, or a minimum of 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 shall 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 shall be located near entrance on ground floor.
  3. ITEMS: The Temporary Lighting System provided by the Contractor shall 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 shall 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, 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, shall be borne by the Contractor.
  6. PIGTAILS: shall be furnished with left-hand sockets with locked type guards and 40 feet of rubber covered cable. The Contractor shall 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 shall 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, shall be replaced by the Contractor. All lamps shall be compact fluorescent.
  8. CIRCUIT PROTECTION: The Contractor shall furnish and install GFI protection for the Temporary Lighting and Site Security Lighting Systems.
  9. MAINTENANCE OF TEMPORARY LIGHTING SYSTEM:
    - a. The Contractor shall maintain the Temporary Lighting System in good working order during the scheduled hours established.
    - b. The Contractor shall 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 shall be removed by the Contractor when authorized by the Commissioner.
  11. HAND TOOLS: The temporary lighting system shall 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 (FOR NEW CONSTRUCTION ONLY):**

1. The Contractor shall furnish, install and maintain a system of site security lighting, as herein specified, to illuminate the construction site of the project, and it shall be connected to and energized from the Temporary Lighting System. All costs in connection with site security lighting shall 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 shall direct its subcontractors to cooperate, coordinate and exert every effort to accomplish an early complete installation of the site security lighting system. After the system is installed and in operation, if a part of the system interferes with the work of any trade, the Contractor shall 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 shall consist of flood lighting by pole mounted guarded sealed-beam units. Floodlight units shall be mounted 16 feet above grade. Floodlights shall 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 shall be installed in a manner acceptable to the Resident Engineer. The first lighting unit in each circuit shall be provided with a photoelectric cell for automatic control. The photoelectric cell shall be installed as per manufacturer's recommendations.
  4. All necessary poles shall be furnished and installed by the Contractor.
  5. The site security lighting shall be kept illuminated at all times during the hours of darkness. The Contractor shall, at its own expense, shall keep the system in operation, and shall furnish and install all material necessary to replace all damaged or burned out parts.
  6. The Contractor shall be on telephone call alert for maintaining the system during the operating period stated above.
  7. All materials and equipment furnished under this section shall remain the property of the Contractor and shall 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 shall mean 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 shall include the provision of heat to permit normal operations in such occupied areas.
  - a. The provision of Temporary Heat shall be in accordance with the temperature requirements set forth in Sub-Section 3.5 C herein.
  - b. The provision of Temporary Heat shall include the provision of: 1) all fuel necessary and required, 2) all equipment necessary and required, and 3) all operating labor necessary and required. Operating labor shall mean that minimum force required for the safe day to day operation of the system for the provision of Temporary Heat and shall include, without limitation, heating maintenance labor and/or Fire Watch as required by NYC Fire Department regulations. Operating labor may be required seven (7) days per week and during other than normal 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 shall include the provision of domestic hot water at the same temperature as the system which is being replaced. Domestic hot water shall 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, shall be 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 shall be 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 shall be 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 shall, 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 shall 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 shall 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 shall be responsible for the provision of Temporary Heat and shall 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 shall notify all its subcontractors and the Resident Engineer at least 30 days prior to the anticipated date that the building(s) will be enclosed.
  2. Commissioner Determination: The Commissioner shall 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 shall be responsible for the provision of Temporary Heat. The Commissioner's determination with respect to building enclosure shall 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 shall 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 shall 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 10 mil. Plastic 2) minimum 12 ounce waterproof canvas tarpaulins, or 3) a minimum three-eighths (3/8) inch thickness exterior grade plywood.
- d. Temporary covers for openings shall be the responsibility of the Contractor and such work shall 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 shall be the GREATER of the following: 1) 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, shall be the GREATER of the following: 68 degrees Fahrenheit or the temperature requirement for the particular type of work set forth in the Contract Documents.

D. DURATION:

1. The Contractor shall be required to provide Temporary Heat 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. The Contractor shall 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 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 shall 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 consecutive calendar days 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 consecutive calendar days (ccds). At a minimum, a full heating season shall extend from October 15<sup>th</sup> to April 15<sup>th</sup>.

Contract Duration	Full Heating Seasons Required
up to 360 ccds	1 full heating season
360 to 720 ccds	2 full heating seasons
more than 720 ccds	3 full heating seasons

E. METHOD OF TEMPORARY HEAT:

1. The method of temporary heat shall be in conformance with the New York City Fire Code and with all applicable laws, rules and regulations. Prior to implementation, such method shall be subject to the written approval of the Commissioner.
2. The method of temporary heat shall:
  - 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 SHALL 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 shall 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 shall 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, shall coordinate its operations in order to insure sufficient and timely performance of all required work, including work performed by trade subcontractors. The Contractor shall 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 shall 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 shall provide proper ventilating and drying, open and close the windows and other openings when necessary for the proper execution of the work and also when directed by DDC. The Contractor shall 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
  - a. The Contractor shall provide all labor and materials to promptly furnish and set all required equipment and 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 shall 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, shall be made by the Contractor at his/her expense. The starting date for the warranty or guarantee period for such equipment shall 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 shall 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 shall be placed so as to comply with the requirements specified hereinbefore, and shall 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, shall 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 shall 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 shall



include such allowance amount in its Total Contract Price. The Contractor shall 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 shall 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 shall be responsible for the provision of Temporary Heat, as directed by the Commissioner. The City shall pay such Contractor for all costs for labor, material, and equipment necessary and required for the same. Payment shall be made in accordance with Article 26 of the Contract, except that the cost of fuel shall 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 written acceptance by the Commissioner of the work, and that the need for such maintenance is not the fault of the Contractor, the Contractor shall provide the required maintenance of the permanent heating system for the period of time directed by the Commissioner. The City shall 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 shall be made in accordance with Article 26 of the Contract, except that the cost of fuel shall be as set forth in Paragraph (c) below.
- 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 shall be limited to the direct cost of such fuel. The Contractor shall 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 shall be responsible for providing the items set forth below and shall include all expenses in connection with such items in its Total Contract Price. The Contractor shall provide such items promptly when required and shall 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 shall 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 his Contract.
  - b. The Contractor shall 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 shall 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 other than normal working hours for the period of time required by seasonal weather conditions.



**J. RELATED PLUMBING WORK:**

1. The Contractor shall 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 shall include all expenses in connection with such items of work in its Total Contract Price. The Contractor shall provide such items of work promptly when required and shall 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 shall be responsible to provide such plumbing equipment to the City in near perfect condition and shall make any repairs required, other than for ordinary wear and tear on the equipment, at his expense. The starting date for warranty and/or guarantee period for such plumbing equipment shall be the date of Substantial Completion acceptance by the City.
3. For Projects requiring the installation of new and/or modified gas service, as well as associated meter installations, the Contractor shall 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 shall 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 shall be maintained at all times in proper working order.
4. Dispose of rainwater in a lawful manner that will not result in flooding 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 shall establish a temporary field office for its own use at the site during the period of construction, at which readily accessible copies of all Contract Documents shall be kept.
- B. The field office shall 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:** In charge of the office there shall be a responsible and competent representative of the Contractor, duly authorized to receive orders and directions and to put them into effect.
- D. Arrangements shall be made by the Contractor whereby its representative may be readily accessible by telephone.
- E. All temporary structures shall be of substantial construction and neat appearance, and shall be painted a uniform gray unless otherwise directed by the Commissioner.
- F. **CONTRACTOR'S SIGN** - The Contractor shall post and keep posted, on the outside of its field office, office or exterior fence or wall at site of work, a legible sign giving 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 event of an emergency at any time.



- G. ADVERTISING PRIVILEGES - The City reserves the right to all advertising privileges. The Contractor shall 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:

<b>REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.8 A</b>
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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 shall provide and install a lockset for the door to secure the equipment in the room. The Contractor shall provide two (2) keys to the Resident Engineer. After completion of the project the Contractor shall 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 shall 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.
  - b. One (1) 9000 B.T.U air conditioner or as directed by Commissioner. Wiring for the air conditioner shall 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 shall provide one (1) telephone, where directed and shall 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, shall remain the property of the Contractor.
5. Computer Workstation quantities shall 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.

<b>REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.8 B</b>
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B. DDC FIELD OFFICE TRAILER:

1. GENERAL: The Contractor shall, 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 shall be located at the Project site and shall be solely dedicated to the Project. Provision of the DDC Field Office shall commence within THIRTY (30) days from Notice to proceed and shall continue through forty-five (45) days after Substantial Completion of the required construction at the Project site. The Contractor shall 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 shall provide at its own cost and expense a mobile office trailer for use as the DDC Field Office. The Contractor shall install and connect all utility services to the



trailer within thirty (30) days from Notice to Proceed. The trailer shall have equipment in compliance with the minimum requirements hereinafter specified. Any permits and fees required for the installation and use of said trailer shall be borne by the Contractor. The trailer including furniture and equipment therein, except computer equipment specified in Sub-Section 3.8D.3 herein, shall remain the property of the Contractor.

3. Trailer shall be an office type trailer of the size specified herein, with exterior stairs at entrance. Trailer construction shall 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 shall 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 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 shall have aluminum insect screens. Provide wire mesh protective guards at all windows.
6. The interior shall 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 60 inches long by 36 inches wide with cabinet below and wall type plan rack at least 42 inches wide.
8. The washroom shall 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 shall be 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 shall be furnished.
9. HVAC: The trailer shall be equipped with central heating and cooling adequate to maintain a temperature of 72 degrees during the heating season and 75 degrees during the cooling season when the outside temperature is 5 degrees F. winter and 89 degrees F. summer.
10. Lighting shall be provided via ceiling mounted fluorescent lighting fixtures to a minimum level of 50 foot candles in the open and private office(s) along with sufficient lighting in the washroom. Broken and burned out lamps shall be replaced by the Contractor. A minimum of four (4) duplex convenience outlets shall be provided in the open office and two (2) each in the private office(s). These outlets shall be in addition to special outlet requirements for computer stations, copiers, HVAC unit, etc.
11. Electrical service switch and panel shall 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 shall conform to the New York City Electrical Code.
12. The following movable equipment shall 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 shall 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 shall 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 Sub-Section 3.8 B 1 herein, the temporary water and drainage connections and piping to the DDC Field Office trailer shall be removed by the Contractor and shall be plugged at the mains. All piping shall become the property of the Contractor for Plumbing Work and shall be removed from the site, all as directed. All repair work due to these removals shall be the responsibility of the Contractor.
  - b. ELECTRICAL WORK:
    - 1) The Contractor shall 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 shall be adequately sized 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 shall 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., shall be removed and disposed of as directed.
- 6) All repair work due to these removals shall be the responsibility of the Contractor.

c. MAINTENANCE

- 1) The Contractor shall 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 shall be responsible for providing (a) all office supplies, including without limitation, pens, pencils, stationery, filtered drinking water and sanitary supplies, and (b) 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 shall remain solely and completely with the Contractor. The Contractor shall 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 shall have all services disconnected and capped to the satisfaction of the Commissioner. All repair work due to these removals shall be the responsibility of the Contractor.

d. TELEPHONE SERVICE: The Contractor shall 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 shall include voice mail.
- 4) A remote bell located on outside of trailer
- 5) The telephone service shall continue until the trailer is removed from the site.

e. PERMITS: The Contractor shall 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 shall 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, shall 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. The Contractor shall provide a high volume copy machine (50 copies per minute) for paper sizes 8½ x 11, 8½ x 14 & 11 x 17. Copier shall remain at job site until the DDC Field office trailer is removed from the site.



2. The Contractor shall 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 shall be new, sealed in manufacturer's original packaging and shall have manufacturers' warranties. All items shall remain the property of the City of New York at the completion of the project.
3. **COMPUTER WORKSTATION:** The Contractor shall provide one complete computer workstation, in quantities specified in Sub-Section 3.8.B.3, as specified herein:
  - a. **Hardware/Software Specification:**
    - 1) Computer Equipment - Computers shall be provided for all contracts that have a Total Consecutive Calendar Days for construction duration as set forth in Schedule "A" of 180 CCD's or greater. Contracts of lesser duration shall not require computers.
    - 2) Computers furnished by the Contractor for use by City Personnel, for the duration of the contract, shall be in accordance with Specific Requirements, contained herein, shall remain the property of the City of New York at the completion of the project and shall 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 Assistant Commissioner of 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
      - 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 shall 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 shall be provided with the following:

- a) One (1) broad-band internet service account. Wideband Internet connectivity at a minimum throughput of 15 Mbps download and 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 (Minimum)
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 shall be the DDC Field Office/project Id (e.g. FLD K HWK666 McGuinness@earthlink.com).

- b) One (1) 600 DPI HP Laser Jet Printer (twelve (12) pages per minute or faster) with one (1) Extra Paper (Legal Size)
- c) All necessary cabling for equipment specified herein.
- d) Storage Boxes for Blank CD's
- e) Printer Table
- f) UPS/Surge Suppressor combo
- 5) All computers required for use in the Engineer's Field Office shall be delivered, installed, and setup in the Field Office by the Contractor.
- 6) All Computer Hardware shall 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 shall be provided by the Contractor, and shall 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 Information Technology Services at 718-391-1761.
- 10) Ownership: The equipment specified above shall, unless otherwise directed by the Commissioner, be the sole property of the City of New York upon delivery to the DDC Field Office. The Contractor shall prepare and maintain an accurate inventory of all equipment which it purchases for the DDC Field Office. Such inventory shall be provided to the City of New York. Upon completion of the



required services, as directed by the Commissioner, the Contractor shall turn such equipment over to the City of New York.

**E. HEAD PROTECTION (HARD HATS):**

1. The Contractor shall provide a minimum of 10 standard protective helmets for the exclusive use of Department of Design and Construction personnel and their visitors. Helmets shall be turned over to the Resident Engineer and kept in the DDC Field Office.
2. Upon completion of the project, the helmets shall become the property of the Contractor.

**3.9 MATERIAL SHEDS:**

- A. Material sheds used by the Contractor for the storage of its materials shall 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. Store combustible materials apart from the facility.

**3.10 TEMPORARY ENCLOSURES:**

- A. 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, insulate temporary enclosures.

**3.11 TEMPORARY PARTITIONS:**

- A. Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate occupied tenant areas from fumes and noise.
  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 2 layers of 3-mil (0.07-mm) polyethylene sheet, extending sheets 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 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. Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
- B. Prohibit smoking in all areas.
- C. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.



- D. 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. 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 shall furnish, erect and maintain a wood construction or chain-link fence to the extent shown on the drawings or required by the work enclosing the entire project on all sides. All materials used shall be new. Any permit required for the installation and use of said fence and costs shall be borne by the Contractor.
- B. WOOD FENCE shall be 7'-0" 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 shall be secured minimum 1/2 inch thick exterior grade plywood. Posts shall be firmly fixed in the ground at least 30" and thoroughly braced. Top edge of fence shall be trimmed with a rabbeted edge mould. Provide on the street traffic sides of fence, observation openings as directed.
  - 1. GATES - Provide an adequate number of double gates, complete with hardware, located as approved by the Resident Engineer. Double gates shall have a total clear opening of 14'-0" with two (2) 7'-0" hinged swinging sections. Hanging posts shall be 6" x 6" and shall extend high enough to receive and be provided with tension or sag rods for the swinging sections.
  - 2. PAINTING - The fence and gates shall 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" shall be painted on fence with three (3) inch high letters on 25 foot spacing for the entire length of fence on street traffic sides. Signs shall be stenciled five (5) feet above the sidewalk.
- C. CHAIN-LINK FENCING shall be minimum 2-inch thick, galvanized steel, chain-link fabric fencing; 8 feet high with galvanized steel pipe posts; minimum 2-3/8-inch OD line posts and 2-7/8-inch OD corner and pull posts, with 1-5/8-inch OD top and bottom rails. Fence shall be accurately aligned and plumb, adequately braced and complete with gates, locks and hardware as required. Under no condition shall fencing be attached or anchored to existing construction or trees.
- D.
  - 1. It shall 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 shall 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 shall be provided for protection of sidewalks and curbs.
  - 4. Where required, make provision for fire hydrants, lamp posts, etc.
  - 5. REMOVAL - When directed by the Resident Engineer, the fence shall be removed.

**3.14 RODENT AND INSECT CONTROL:**

- A. DESCRIPTION: The Contractor shall 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 premises requiring such special attention.

B. MATERIALS:

- 1 All materials shall be approved by the New York State Department of Environmental Conservation 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 shall 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 shall 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 shall 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 shall be placed during the period of construction and any consumed or decomposed bait shall be replenished as directed.
- 3 At least one 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, shall be placed at locations that are inaccessible to pets, human beings, children and other non-target species, particularly wildlife (for example-birds) in the project area.
- 4 The Contractor shall be responsible for collecting and disposing of all trapped and poisoned rodents found in live traps and tamper proof bait stations. The Contractor shall also be responsible for posting and maintaining signs announcing the baiting of each particular location.  
The Contractor shall be responsible for the immediate collection and disposal of any visible rodent remains found on streets or sidewalks within the project area.
- 5 It is anticipated that public complaints will be addressed to the Commissioner. The Contractor, where directed by the Commissioner, shall 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.
- 6 Emergency service during the regular workday hours (Monday through Friday) shall be rendered within 24 hours, if requested by the Commissioner, at no additional cost to the City.



**F. EDUCATION & NOTICES:**

- 1 The Contractor shall post notices on all Construction Bulletin Boards advising workers, employees, and residents to call the Engineer's Field Office to report any infestation or outbreak of rodents, rats, mice, water beetles, roaches and fleas within the project area. The Contractor shall provide and distribute literature pertaining to 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 shall 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 shall keep a record of all rodent and waterbug infestation surveys conducted by him/her and make available, upon request, to the Commissioner. The findings of each survey shall include, but not be limited to, recommended Integrated Pest Management (IPM) techniques, like baiting, trapping, proofing, etc., proposed for rodent and waterbug pest control.
2. The Contractor shall 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, shall 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.
1. All tree work performed within the quarantine areas must be performed by New York State Department of Agriculture and Markets (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 sub-contractor performing tree work has entered into a compliance agreement with NYSDAM. The terms of said compliance agreement shall be strictly complied with. Any host material so removed shall be delivered to a facility approved by NYSDAM. For the purpose of this contract host material shall be ALL species of trees.
  2. Any host material that is infested with the Asian Longhorned Beetle 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 shall submit to the Commissioner a copy of a valid Asian Longhorned Beetle compliance agreement entered into with NYSDAM and the Contractor or its sub-contractor performing tree work. If any host material is transported from the quarantine area the Contractor shall 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 shall be defined as all five boroughs of the City of New York. In addition, prior to the start of any tree work, the Contractor shall contact the





NYC Department of Parks & Recreation's 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 shall retain a Certified Arborist, as defined by New York City Department of Parks and Recreation (NYCDPR) regulations, to provide the services described below.

1. Surveys and Reports: The Certified Arborist shall, 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; (3) evaluation of the general health and condition of any infected plant material.
2. Frequency of Reports: The Certified Arborist shall 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 24 months in duration, the Certified Arborist shall conduct a survey and prepare a report at the midpoint of construction. Copies of each plant material assessment report shall 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 shall 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 50 (fifty) feet of the project's Contract Limit Lines (CLLs) or Property Lines (PLs).
  - b. Any part of the tree or shrub stands within 50 (fifty) 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 50-foot inclusionary perimeter as outlined above.
4. Tree Protection Plan: The Certified Arborist shall prepare, and the Contractor shall 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 NYCDPR jurisdiction as determined by the Department of Transportation, and (4) all trees that are located in proximity to the project site, as defined above. The Tree Protection Plan shall comply with the NYC 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 shall be submitted to the Resident Engineer prior to the commencement of construction. Implementation of the Tree Protection Plan for street trees and trees under NYCDPR jurisdiction shall 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 50 feet of the intersection of the project's site's property line with the street frontage property line.

- C. No Separate Payment. No separate payment shall 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 shall be deemed included in the Contractor's bid for the Project.

### 3.16 PROJECT IDENTIFICATION SIGNAGE:

- A. The Contractor shall 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 shall furnish and install a sign at the entrance (gates) as follows:

---

**NO TRESPASSING**

**AUTHORIZED PERSONNEL ONLY**

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- C. If no construction fence exists at the site, this notice shall 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 shall produce and install one (1) project sign which shall be posted and maintained upon the site of the project at a place and in a position directed by the Commissioner. The Contractor shall protect the sign from damage during the continuance of work under the Contract and shall 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 shall 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 shall provide all materials required for the production of the sign as specified herein. Workmanship shall be of the best quality, free from defects and shall be produced in a timely manner.
  - 3 Schedule: Upon project mobilization, the Contractor shall commence production and installation of the sign.
  - 4 Removal: At the completion of all work under the Contract, the Contractor shall remove and dispose of the project sign away from the site.
  - 5 Sign construction:
    - a. Frame: The frame shall be from quality dressed 2"x2" pine, fire retardant, pressure treated lumber, that surrounds the inside back edge of the sign. The sign shall have one (1) intermediate vertical and two (2) diagonal supports, glued and screwed for rigidity. Frame shall be painted white with two (2) coats of exterior enamel paint, prior to mounting of sign panel.
    - b. Edging: U-shaped, 22 gauge aluminum edging, with a white enameled finish to match sign



- background, shall run around entire edging of sign panel and frame. Corners shall be mitered for a tight fit. Channel dimensions shall 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 shall be constructed in one (1) piece of 14 gauge (.0785") 6061-T6 aluminum. This panel shall 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 shall 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 shall insert the project name and names and titles of personnel (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 shall 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 shall 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 shall 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 shall 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 shall 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 shall provide 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 shall 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 shall be no less than one (1) Security Guard on duty every day, including Saturdays, Sunday and Holidays, 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 shall not apply after the finishing painting of the plaster work is commenced; thereafter, not less than one (1) Security Guard shall be on duty continuously, 24 hours a day.

2. Every Security Guard shall be required to hold a "Certificate of Fitness" issued by the Fire Department. Every Security Guard shall, 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 shall be replaced by the Contractor upon the written demand of the Commissioner.
  4. Each Security Guard furnished by the Contractor shall 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 shall 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 shall 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 shall 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 shall 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, shall 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, shall be replaced by the Contractor at no additional cost to the City.

END OF SECTION 01 50 00



NEW YORK CITY DEPARTMENT OF  
DESIGN + CONSTRUCTION

Division 01 – DDC STANDARD GENERAL CONDITION  
SINGLE CONTRACT PROJECTS

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No Text



**SECTION 01 54 11**  
**TEMPORARY ELEVATORS AND HOISTS**

**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 the following:
1. Temporary Use, Operation and Maintenance of Elevators during Construction
    - a. For New buildings up to 15 Stories
    - b. For New buildings over 15 Stories
    - c. For Existing Buildings
  2. Temporary Construction Hoists and Hoist ways (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 15 STORIES:**

- A. **INSTALLATION:** The Contractor shall 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, and representatives of the DDC and other Governmental Agencies having jurisdiction of work at the project. The Contractor shall 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 shall 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 shall 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 shall be responsible for all costs in connection with the temporary elevator, including without limitation: (1) installing and operating the temporary elevator, (2) maintaining the temporary elevator 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 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 shall include all costs in connection with the temporary elevator, including without limitation, the costs specified herein.
- D. **COMMENCEMENT OF SERVICE:** The Contractor shall begin to provide temporary elevator service using the selected main passenger elevator no later than eight (8) weeks (40 working 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 (15 working days) after the machine room roof slab, or that portion of it surrounding the elevator shaft, has been placed the following work shall have been completed:
1. The shaft shall have been completely enclosed by either the permanent or a temporary enclosure meeting the requirements of the law.
  2. The machine room shall have been made completely watertight either by permanent or temporary construction. Beams or other devices, either permanent or temporary shall be provided which will enable the safe and practicable hoisting of the elevator machinery for installation.
  3. There shall have been installed on all floors at the shaft way entrances to the elevator, solid substantial frames and either sliding or swing doors with substantial hardware and door locks and any necessary approved wire mesh barricades for adjacent shaft ways.
  4. There shall have been furnished and installed solid substantial enclosures at front, back, sides and top of car platform enclosure, with emergency exit at top of car, excepting that the portion of the front at the elevator entrance shall have been provided with a substantial temporary door or gate.
- E. **ELECTRICAL INSTALLATION:** The Contractor, not later than 20 calendar days after the machine room roof slab or that portion of its surrounding the elevator has been placed, shall have furnished and installed temporary or permanent power and light feeders as required for the elevator used for temporary service and shall have connected 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 shaft way and for the car control and signal traveling cables. The Contractor shall make all these required connections as soon as the equipment is declared ready for such connections by the Resident Engineer.
- F. **REMOVAL:** When elevators for permanent use have been installed and are in condition for service, and when directed by the Commissioner, the Contractor shall 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 shall 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 shall furnish and install new governor and compensating ropes, new traveling cables and new controller parts, etc. The car and counterweight safeties shall 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 shall be installed and payment therefore will be made in accordance with Article 26 of the Contract.



- H. **REPLACEMENT:** The Contractor shall 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, excepting the replacement of hoisting ropes. All shaft ways, pits, motor rooms and sheave spaces used for temporary operation of elevators shall be thoroughly cleaned. Where lubricated rails are used they shall 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., shall be borne by the Contractor except for the replacement of hoisting ropes.
- I. **LIMITATIONS ON USE:** The temporary elevator shall not be used during its operation for the hoisting of materials or the removal of rubbish, but shall be limited only to the transportation of employees of the Contractor and/or its subcontractors, and 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 shall notify the Resident Engineer within 24 hours after such damage has occurred. As indicated above, the Contractor shall 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 \$100 per day for each day it fails to provide the temporary elevator service described in this section beginning with the 41<sup>st</sup> working 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 15 STORIES:**

- A. **INSTALLATION:** The Contractor shall 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, and representatives of the DDC and other Governmental Agencies having jurisdiction of work at the project. The Contractor shall 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 shall 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 shall not be operated simultaneously.
- B. **RESPONSIBILITY:** The Contractor shall 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 shall be responsible for all costs in connection with the temporary elevators; including without limitation: (1) installing and operating the temporary elevators, (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 shall





include all costs in connection with the temporary elevators, including without limitation, the costs specified herein.

- D. **LOW RISE ELEVATOR:** The Contractor shall begin to provide temporary elevator service using one (1) selected main passenger elevator no later than six (6) weeks (30 working days) after the 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) working days, after the 12th Floor slab, or that portion of it surrounding the elevator shaft, has been placed and stripped the following work shall have been completed:
1. The shaft shall have been completely enclosed up to the 12th Floor by either the permanent or a temporary enclosure meeting the requirements of the law.
  2. A temporary machine room enclosure shall have been provided at the 11th Floor and shall have been made completely watertight either by permanent or temporary construction. Beams or other devices, either permanent or temporary, shall be provided which will enable the safe and practicable hoisting of the elevator machinery for installation.
  3. There shall have been installed on all floors up to and including the 9th Floor at the shaft entrances to the elevator, solid substantial wood frames and either sliding or swing doors with substantial hardware and door locks, also any necessary approved wire mesh barricades for adjacent shaft ways.
  4. There shall have been furnished and installed solid substantial enclosures at front, back, sides and top of car platform enclosure, with an emergency exit at top of car, excepting that the portion of the front at the elevator entrance shall have been provided with a substantial temporary door or gate.
- E. **ELECTRICAL INSTALLATION:** The Contractor not later than 10 calendar days after the 12th Floor slab or that portion of it surrounding the elevator, has been poured and stripped, shall have furnished and installed temporary or permanent power and light feeders as required for the elevator used for temporary service and shall have connected such feeders to the terminals on the starter panels or controllers in the temporary machine room, to the low voltage transformers and car light outlets in the center of the shaftway and for the car control and signal traveling cables. The Contractor shall 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 shall begin to provide temporary elevator service to all floors, using a selected main passenger elevator, no later than eight (8) weeks (40 working 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 (15 working days) after the machine room roof slab, or that portion of it surrounding the elevator shaft, has been placed, the following work shall have been completed:
1. The shaft shall have been completely enclosed by either the permanent or temporary enclosure, meeting the requirements of the law.
  2. The machine room shall have been made completely watertight either by permanent or temporary construction. Beams or other devices, either permanent or temporary shall be provided which will enable the safe and practicable hoisting of the elevator machinery for installation.
  3. There shall have been installed on all floors at the shaft way entrances to the elevator, solid substantial frames and either sliding or swing doors with substantial hardware and door locks, also any necessary approved wire mesh barricades for adjacent shaft ways.
  4. There shall have been furnished and installed, solid substantial enclosures at front, back, sides and top of car platform enclosure, with an emergency exit at top of car, excepting that the portion of the front at the elevator entrance shall have been provided with a substantial temporary door or gate.
- G. **ELECTRICAL INSTALLATION:** The Contractor, not later than 20 calendar days after the machine room slab or that portion of it surrounding the elevator shaft has been placed, shall have furnished and installed temporary or permanent power and light feeders as required for the high rise elevator to be used for



- temporary service and shall have connected 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 shall 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 shall be shut down.
- I. REMOVAL: When one (1) or more elevators for permanent use have been installed and are in condition for service, and when directed by the Commissioner, the Contractor shall remove the temporary enclosures and 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 shall 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 shall furnish and install new governor and compensating ropes, new traveling cables, new controller parts, etc. The car and counterweight safeties shall 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 shall be installed and payment therefore will be made in accordance with Article 26 of the Contract.
- K. REPLACEMENT: The Contractor shall 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, excepting the replacement of hoisting ropes. All shaft ways, pits, motor rooms and sheaves spaces used for temporary operation of elevators shall be thoroughly cleaned down. Where lubricated rails are used they shall 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., shall be borne by the Contractor except for the replacement of hoisting ropes.
- L. LIMITATIONS ON USE: The temporary elevators shall not be used during their operation for the hoisting of materials or the removal of rubbish, but shall be limited only to the transportation of employees of the Contractor and/or its subcontractors, and 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 shall notify the Resident Engineer within 24 hours after such damage has occurred. As indicated above, the Contractor shall 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 \$100 per day for each day it fails to provide the temporary elevator service described in this Section beginning with the 31st working day after the 12th Floor slab, or that portion of the 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, and 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 shall 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 shall 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 shall 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, excepting the replacement of hoisting ropes. All shaft ways, pits, motor rooms and sheave spaces used for temporary operation of elevators shall be thoroughly cleaned down. Where lubricated rails are used they shall 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., shall 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 shall be installed and payment therefore will be made in accordance with Article 26 of the Contract.
- D. **LIMITATIONS ON USE:** The temporary elevator shall not be used during its operation for the hoisting of materials or the removal of rubbish, but shall be limited only to the transportation of employees of the Contractor and/or its subcontractors, and 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 shall notify the Resident Engineer within 24 hours after such damage has occurred. As indicated above, the Contractor shall 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 \$100 per day for each day it fails to provide elevator services described in this section beginning with 15 consecutive calendar days from Notice to Proceed. 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 shall 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 shall be constructed at such locations as will 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 shall 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.
- C. **ELEVATOR SHAFT:** Wherever possible, one or more of the permanent elevator shafts may be used as temporary hoist ways, providing such use complies with the requirements of the Building Code of the City of New York and has been approved by the Commissioner, and providing further it entails no interference with the progress of the work.
- D. **PROTECTION FOR INTERIOR HOISTS:** All interior material hoist ways shall be enclosed on each floor and shall be adequately protected with appropriate safety guards. In no event shall the protection be less than that required by law.

**END OF SECTION 01 54 11**



## SECTION 01 54 23 TEMPORARY SCAFFOLDING AND PLATFORMS

### 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. Section 01 35 26: Safety Requirements Procedures.
- C. 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 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 sites 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 shall comply with requirements of Chapter 33 (Safeguards During Construction or Demolition) of the 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 shall designate and employ a Jobsite Safety Coordinator, who shall be a competent person, who shall 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 supported scaffold certificate of completion. An alternate shall also be designated, in the event that the Jobsite Safety Coordinator is absent. The Jobsite Safety Coordinator shall:
  - 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.
  12. Keep a log of significant actions and events connected with the scaffolding.
- B. The Contractor shall be responsible for erecting, maintaining and dismantling the scaffolding and/or sidewalk shed in conformance with requirements of the New York City Building Code, OSHA and the Contract documents, including the specifications. The Contractor shall also be guided by generally accepted standards of scaffold industry practice as promulgated by the Scaffold Industry Association.
  - C. The Contractor shall 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 shall be responsible to ensure the following: (1) that the installation design is in compliance with requirements of the New York City 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 New York City Department of Buildings approved training provider are mandatory. These users have the duty to become familiar with the New York City 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 shall prepare, obtain and submit the following to the Resident Engineer:

- A. NYC Department of Buildings 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;
  16. All sidewalk sheds shall 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 shall be issued for each inspection and pull-test below, and shall be logged and maintained on site by the Jobsite Safety Coordinator for the duration of the project.
- B. Pull testing shall be required during design, and during or post erection, where anchorage is made into masonry. The Scaffold Engineer shall specify the test method, proof load and the number of trials.
- C. Sidewalk sheds shall be inspected after initial installation, major modification, or damage and thence every three months. Inspections shall be by a Scaffold Engineer for custom sheds and by a Competent Person employed by the Contractor for standard sheds.
- D. Scaffolds shall be inspected by the Scaffold Engineer during erection, post-erection and prior to use and thence every three months. The Scaffold Engineer shall repeat inspections after major alteration/modification, damage.
- E. A Qualified Person assigned by the Contractor shall 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 shall 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 shall 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 be available on-site at all times.
- 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 shall 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 shall 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**



NEW YORK CITY DEPARTMENT OF  
DESIGN + CONSTRUCTION

Division 01 – DDC STANDARD GENERAL CONDITION  
SINGLE CONTRACT PROJECTS

Issue Date - June 01, 2013

Revised - January 15, 2015

No Text

TEMPORARY SCAFFOLDING AND PLATFORMS

01 54 23 - 4



**SECTION 01 73 00**  
**EXECUTION**

**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 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

**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.
- B. Design Consultant: "Design Consultant" shall 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.

#### 1.5 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 II – PRODUCTS (Not Used)

#### PART III – EXECUTION

##### 3.1 DELIVERY OF MATERIALS:

- A. Material Orders: The Contractor shall furnish to the Commissioner a copy of each material order, indicating date of order and quantity of material, and shall also notify the Commissioner when materials have been delivered to the site and in what quantities.
- B. Ample Quantities: The Contractor shall deliver materials in ample quantities to insure 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 shall be delivered with unbroken seals and shall bear proper labels.
- D. Deliveries: The Contractor shall coordinate deliveries in order to avoid delaying or impeding the progress of the work.
- E. Handling: The Contractor shall 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, and periodically inspect to assure that stored products are undamaged and are maintained under required conditions.
- G. Stacking: All materials shall be properly stacked in convenient places adjacent to the site, or where directed, and protected in a satisfactory manner. Stacked materials shall be so arranged as to not interfere with visibility of traffic control devices.
- H. Overloading: If authority is given to store materials in any part of the project area, they shall 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 shall 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 shall devote its time and personal attention to the work and shall employ and retain at the project site, from the commencement until the entire completion of the work, a Contractor's Construction Superintendent. The Contractor's Construction Superintendent shall be registered with the New York City Department of Buildings in compliance with the Construction Superintendent Rule of the City of New York and shall be competent and capable of maintaining proper supervision and care of the work and shall be acceptable to the Commissioner. The Construction Superintendent shall, in the absence of the Contractor, and irrespective of any superintendent or foreman employed by any subcontractor, shall see that the instructions of the Commissioner are carried out.
- B. Replacement: The Contractor's Construction Superintendent on the job shall 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 of the Contractor in connection with the performance of the work.
- B. Responsibility: The Contractor shall establish all other lines and elevations required for its work and shall be solely responsible for the accuracy thereof.
- C. Safeguard All Points: The Contractor shall safeguard all points, stakes, grade marks and bench marks made or established by the Contractor on the work, shall re-establish same if disturbed and bear the entire expense of rectifying the work improperly installed due to not maintaining, not protecting or removing without authorization such established points, stakes, or marks.
- D. City Monuments and Markers: No work shall be performed near City monuments or marks so as to disturb them until the said monuments or marks have been referenced or reset or otherwise disposed of by the relevant Agency or party who installed them.
- E. Foundations: The Contractor shall 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 shall 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 shall establish the permanent lines of exterior walls. The Contractor shall furnish promptly, 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 shall 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, shall be a land Surveyor licensed in the State of New York and shall be subject to the approval of the Commissioner. The Surveyor shall not be a regular employee of the Contractor, nor shall the Surveyor have any interest in the Contract. The Surveyor shall not be employed by the Contractor in laying out any work, it being intended that the Surveyor's certification shall represent an independent and disinterested verification of such layout. The Surveyor shall report to the Department of Design and Construction's 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 shall 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 drawings shall be noted on the final certificate and there shall be included 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 shall submit to DDC for submission to the Department of Buildings a final Survey by the licensed Surveyor showing the location of the new Structure, before completion of the Structure. This Survey shall 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 Structures on the plan, together with the location and boundaries of the lot or plot upon which the Structure 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 shall 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 forces of the Department of Design and Construction 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, if any were referred to, were actually taken from the site at the times, places and in the manner indicated. The samples are available for inspection in the Department of Design and Construction Subsurface Exploration Section.
  - 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 and 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 work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
  - 1. Before construction, 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, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
  - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
  - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- C. Acceptance of Conditions: Examine substrates, areas, and conditions, with the subcontractor responsible for installation or application present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
  - 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.
  - 4. 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 the NYC 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 the NYC Department of Buildings (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 shall comply with all federal, state and local asbestos regulations affecting the work for this Contract.
- B. Contractor Responsibility: The Contractor shall comply with all federal, state and local environmental regulations, including without limitation USEPA and OSHA regulations which require the Contractor to assess if lead based paint will be disturbed during the work in order to protect his/her workers and the building occupants from migration of lead dust into the air. The Contractor shall comply with all federal, state and local environmental waste disposal regulation 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 shall verify all dimensions and conditions on the job so that all work will properly join the existing work.
- B. The Contractor, before commencing work, shall examine all adjoining work 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 shall report to the Commissioner any condition that will prevent it from performing work that conforms to the required standard.

- C. Existing Utility Information: 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. Coordinate with authorities having jurisdiction.
- D. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

### 3.8 DEFERRED CONSTRUCTION:

- A. Where necessity for deferred construction is certified by the Commissioner, in order to permit the installation of any item or items of equipment required to be furnished and installed concurrent with the time allowed for doing and completing the work of the Contract, the Contractor shall defer construction work limited to adequate areas as approved by the Commissioner.
- B. The Contractor shall 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: 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.
- 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 shall 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 shall be responsible for all costs in connection with such regulatory compliance, unless otherwise specified in the Contract.

### 3.11 TRANSPORTATION:

- A. Availability: It shall be the duty of the Contractor to determine the availability of transportation facilities and dockage for the use of its employees, equipment and material 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 shall 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 shall 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 shall 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: In the event that timely delivery of sleeves and other materials cannot be made, and to avoid delay, 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 shall fill around them with materials as required by the Contract. The necessary expenditures incurred for the boxing out and filling in shall 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 shall submit to the 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 shall be stamped and returned if approved and/or comments will be transmitted. The Contractor shall 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 shall not predicate its layout work on unapproved sketches.

**3.14 CUTTING AND PATCHING:**

- A. Responsibility: The Contractor shall do all cutting, patching and restoration required by its work, unless otherwise particularly specified in the Specifications.
- B. Restore Work: The Contractor shall restore any work damaged during the performance of the work.
- C. Competent Workers: All restoration work shall 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 shall 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 Commissioner's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- G. Existing Warranties: 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 shall 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, and as stated here, shall be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized. Comply with requirements of Section 01 74 19, CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL.
- B. Rubbish: Rubbish shall not be thrown from the windows or other parts of the project. Mason's rubbish, dirt and other dust-producing material shall be wetted down periodically.
- C. Location: The Contractor shall clean Project site and work area daily and sweep up and deposit, at a location designated on each floor, all of its rubbish, debris and waste materials, as it accumulates and when directed by the Resident Engineer. Wood crating shall 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 7 days during normal weather or 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: The Contractor shall be responsible for the removal of all rubbish, etc., from the site. The Contractor shall remove from the designated locations all piles of rubbish, debris, waste material and wood crating as they accumulate and when directed by the Resident Engineer, and shall remove them from the site. The Contractor shall employ and keep engaged for this purpose an adequate number of laborers.
- E. Surplus Materials: The Contractor shall 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 shall 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 shall thoroughly clean all equipment and materials furnished and installed and shall 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 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 shall take over and maintain the Project site, after order to start work.
- B. The Contractor shall 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 shall, 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 shall 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 shall 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 shall take over and maintain all project areas, after order to start work.
- B. Until the date of Final Acceptance, the Contractor shall be responsible for the safety of all project areas, including water, gas, electric and other mains and pipes and conduits and shall 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 shall be kept clear at all times, maintained, and if damaged, repaired to serviceable conditions with materials to match existing.
- D. The Contractor shall 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, shall comply with the New York City Dept. of Buildings, Bureau of Electrical Control requirements.

### **3.23 OBSTRUCTIONS IN DRAINAGE LINES:**

- A. The Contractor shall 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 shall be kept clear of any and all debris. Any stoppage shall be repaired immediately at the expense of the Contractor.

**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 | CONSTRUCTION RECORD DOCUMENTS                      |
| G. | Section 01 81 13 | SUSTAINABLE DESIGN REQUIREMENTS 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.
- B. Design Consultant: "Design Consultant" shall 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. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk or the like.



- D. Construction and Demolition 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.
- E. Diversion from Landfill: To remove, or have removed, from the site for recycling, reuse or salvage, material that might otherwise be sent to a landfill.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product.
- G. 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.
- H. Return: To give back reusable items or unused products to vendors.
- I. Reuse: To reuse excess or discarded construction material in some manner on the Project site.
- J. Salvage: To remove a waste material from the Project site for resale or reuse.
- K. 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.
- L. 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.

#### 1.5 WASTE MANAGEMENT PERFORMANCE REQUIREMENTS:

- A. The City of New York has established that this project shall generate the least amount of waste possible and that processes that ensure the generation of as little waste as possible due to error, inaccurate planning, breakage, mishandling, contamination, or other factors shall be employed.
- B. Of the waste that is generated during demolition, as many of the waste materials as economically feasible, and as stated here, shall be reused, salvaged, or recycled. Waste disposal in landfills shall be minimized.

<b>REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 1.5 C</b>
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- C. LEED CERTIFICATION: The City of New York will seek LEED (Leadership in Energy and Environmental Design) 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. A minimum of 75% of total Project demolition waste (by weight) shall be diverted 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
  11. Reuse items indicated on the Drawings and/or elsewhere in the Specification
- E. All fluorescent lamps, HID lamps and mercury-containing thermostats removed from the site shall be recycled.
- 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.

#### 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); also there are outlets that will pick up, and in some cases buy recyclable materials. Examples of information resources are as follows:
1. DDC's Sustainable Design web site:  
[http://www.nyc.gov/html/ddc/html/design/sustainable\\_home.shtml](http://www.nyc.gov/html/ddc/html/design/sustainable_home.shtml) This includes a manual on Construction and Demolition Waste Reduction and Recycling, a Sample Waste Management Plan and sample C&D Waste Management log. A standard Construction and Demolition Waste Management Log form is included at the end of this section.
  2. Web Resources  
(Information only; no warranty or endorsement is implied.)  
[www.wastematch.org](http://www.wastematch.org) Site of New York Waste Match, a materials exchange database and service  
[www.bignyc.org](http://www.bignyc.org) Site of Build It Green NYC, a non profit outlet for salvaged and surplus building materials  
[www.usgbc.org](http://www.usgbc.org) Site of the United States Green Building Council, with a description of the LEED certification process and requirements for C&D waste recycling  
[www.epa.gov/epawaste/index.htm](http://www.epa.gov/epawaste/index.htm) Site of the U.S. Environmental Protection Agency that discusses construction and demolition waste issues, and links to other resources.

#### 1.7 SUBMITTALS:

- A. The Contractor shall be responsible for the development and implementation of a Waste Management Plan for the Project. The Contractor's subcontractors shall assist in the development of that Plan, and collect and deposit their waste and recyclable materials in accordance with the approved Plan.
- B. DRAFT WASTE MANAGEMENT PLAN. Within fifteen (15) days after receipt of 'Notice to Proceed', or prior to any waste removal, whichever occurs sooner, the Contractor shall submit to the Commissioner a Draft Waste Management Plan. Include separate sections for demolition and construction waste. The Plan shall 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.
  2. Description of onsite and/or offsite sorting methods for all materials to be removed from site.
  3. If mixed construction and demolition waste is to be sorted off-site, provide a letter from the processor stating the average percentage of mixed construction and demolition 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. Materials handling procedures: 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: Description of regular meetings to be held to address waste management.
  8. Sample spreadsheet and description of how the implementation of the plan will be documented on a monthly basis.
- C. **FINAL WASTE MANAGEMENT PLAN.** Within fifteen (15) days of Commissioner's approval of the Draft Plan, the Contractor shall submit a Final Waste Management Plan.
- D. **PROGRESS REPORTS.** The Contractor shall submit monthly a 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 jobsite waste. A DDC C&D Waste Management Log form is available on the DDC Sustainable Design website and 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 tones/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
    - 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 measure 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.
  5. Include legible copies of on-site logs, weight tickets and receipts. Receipts shall 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 shall save such original documents for the life of the project plus seven (7) years.
- E. **LEED Submittal:** For LEED designated projects submit LEED Letter Template for Credit 2.2, 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.
- F. **Refrigerant Recovery.** Submit Qualification data for Refrigerant recovery technician. Statement of refrigerant recovery, signed by the refrigerant recovery technician responsible for recovering refrigerant



stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

#### **1.8 QUALITY ASSURANCE:**

- A. The Contractor shall designate a Waste Management Coordinator, to ensure compliance with this section. Coordinator shall be present at Project site full time 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 shall be discussed at the following meetings:
  - 1. Pre-demolition kick-off meeting
  - 2. Pre-construction kick-off meeting
  - 3. Regular job-site meetings
  - 4. Contractor toolbox meetings

#### **PART II – PRODUCTS (Not Used)**

#### **PART III – EXECUTION**

##### **3.1 WASTE PLAN IMPLEMENTATION:**

- A. The Contractor shall implement the Waste Management Plan, coordinate the Plan with all affected trades, and designate one individual as the Construction Waste Management 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 shall 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 shall oversee and document the results of the Plan. Monies received for salvaged materials shall remain with the Contractor, except the monies for those items specifically identified elsewhere in the specifications, or indicated on the drawings as belonging to others.
- C. Responsibilities of Subcontractors: Each subcontractor shall be responsible for collecting its waste, non-returned surplus materials, and rubbish, in accordance with the Waste Management Plan.
- D. Distribution. The Contractor shall distribute copies of the Waste Management Plan to each Subcontractor, Resident Engineer, Construction Manager, and Commissioner.
- E. Instruction: The Contractor shall provide on-site instruction of proper waste management procedures to be used by all parties in appropriate stages of the Project.
- F. Procedures. Conduct waste management operations to ensure minimum interference with site vegetation, roads, streets, walks and other adjacent occupied and used facilities.
  - 1. Collect co-mingled 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 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**



# CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT. LOG

**Contractor:**

Prepared by:

For Month:

[illegible]

Notes:

1 Volume (cubic yards) may be used instead of weight if used for ALL amounts and ALL materials.

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 Drawings and/or elsewhere in the Specification.
  3. Excluded material includes soil or land clearing debris.
  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.





NEW YORK CITY DEPARTMENT OF  
DESIGN + CONSTRUCTION

## CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT LOG

No Text



**SECTION 01 77 00**  
**CLOSEOUT 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].

**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 Leadership in Energy & Environmental Design (LEED) Rating System, as specified in Section 01 81 13, "SUSTAINABLE DESIGN REQUIREMENTS FOR LEED 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 shall be in accordance with ASHRAE and USGBC LEED- NC procedures, as described in Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS. The Contractor shall 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.
- B. Design Consultant: "Design Consultant" shall 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. Substantial Completion: shall mean the written determination by the Commissioner that the Work required under the Contract is substantially, but not entirely, complete.
- D. Final Acceptance: shall mean final written acceptance of all the Work by the Commissioner, a copy of which shall be sent to the Contractor.

#### 1.5 SUBSTANTIAL COMPLETION:

- A. Preliminary Procedures: Before requesting inspection to determine the date of Substantial Completion, the Contractor shall 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. 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 shall 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 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 shall request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
  - 2 Results of completed inspection will form the basis of requirements for Final Acceptance.

#### 1.6 FINAL ACCEPTANCE:

- A. Preliminary Procedures: Before requesting final inspection for Final Acceptance of the Work, the Contractor shall 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 Record 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, SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS.
  - 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 shall state that each item has been completed or otherwise resolved for acceptance, and shall 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 shall 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 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. The items of materials and/or equipment for which manufacturer warranties are required are listed in Schedule B of the Addendum. For each item of material and/or equipment listed in Schedule B, 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 in Schedule B and will be replaced or repaired within such specified period. The contractor shall 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 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 entire Project or for a portion of 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 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 shall complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Contractor shall 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.



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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, Department of Buildings (DoB); Department of Transportation (DoT); Department of Environmental Protection (DEP); Fire Department (FDNY); etc. Documentation to include, but 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.
  - 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 Record Documents as described in Section 01 78 39, CONTRACT RECORD DOCUMENTS, including but not limited to; approved documentation from Governing Authorities; as-built record drawings and specifications; product data; operation and maintenance manuals; Final Completion construction photographs; damage or settlement surveys; final property surveys; and similar final record information. 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 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, SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS.
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.
15. Complete final cleaning requirements, including touchup painting.
16. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.





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No Text



**SECTION 01 78 39**  
**CONTRACT RECORD DOCUMENTS**

**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 general procedural requirements for Contract Record Documents, including:
1. As-built Contract Record Drawings.
  2. As-built marked-up copies of Record Specifications, addenda and Change Orders.
  3. As-built marked-up Product Data
  4. Record Samples
  5. Construction Record Photographs
  6. Operating and Maintenance Manuals
  7. Final Site Survey
  8. Guarantees and Warranties
  9. Waste Disposal Documentation
  10. LEED Materials and Matrix
  11. Miscellaneous Record Submittals
- B. The Department of Design and Construction, at the start of construction (kick-off meeting), will furnish to the Contractor at no cost a complete set of Contract 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 shall maintain, during the progress of the work, an accurate record of the work as actually installed, on Contract Record Drawings, on Mylar (reproducible), in ink. Store record documents and samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain 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.

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 shall also show all connections, valves, gates, switches, cut-outs and similar operating equipment.

For projects designated to achieve a LEED rating the Contractor shall 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 shall 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.
- B. Design Consultant: "Design Consultant" shall 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.

**1.5 SUBMITTALS:**

- A. As-Built Contract Record Drawings: Comply with the following:
1. Progress Submission: As directed by the Resident Engineer, submit progress As-Built Contract Record Drawings at the 50% Construction Completion stage.
  2. Final Submission: Before substantial completion payment, the Contractor shall 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 shall 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 shall bear the legend "AS-BUILT CONTRACT RECORD DRAWING" in heavy block lettering, one half (1/2) inch high, and contain the following data:

**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. Record Drawing Title Sheet: The Contractor shall prepare a title sheet, the same size as the Contract Record Drawings, which shall 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 shall 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 shall 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 Commissioning Authority/Agent (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 shall 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 shall maintain one set of blue- or black-line white prints as applicable of the Contract Drawings and Shop Drawings. If applicable, the Record Contract Drawings and Shop Drawings shall 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 shall mark Record Prints 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 shall be distinctly encircled and identified by Change Order number correlating to changes listed on the "Title Sheet." The Contractor shall 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 Drawings.
  - 2. Revisions to details shown on 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.
  - 14. Record information on the Work that is shown only schematically.
- C. Progress Record Mylar's (reproducible): As directed by the Resident Engineer at 50% construction completion, review marked-up Record Prints with the Resident Engineer and the Design Consulting. When directed by the Resident Engineer transfer progress mark-ups to a full set of Mylar's (reproducible) and submit one blue line or black line record copy to the Resident Engineer. The marked-up Mylar's (reproducible) shall 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 Certificate of Substantial Completion, review marked-up Record Prints with the Resident Engineer and the Design Consulting. When authorized, complete mark-up of a full set of corrected Mylar's (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 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 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 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 shall meet with the Resident Engineer at the site to determine which of the Samples maintained during the construction period shall 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 OPERATING AND MAINTENANCE MANUALS:**

- A. The Contractor shall 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 shall be the same color. When multiple binders are used, correlate data into related consistent groupings. Binder front shall containing 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 shall 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. Arrange content by systems under Specification Section numbers and sequence of Table of Contents of the Project manual. Provide tabbed flyleaf for each separate product, equipment and/or system/subsystem with typed description of product and major component parts of equipment.
- E. Safety warnings or cautions shall be visibly highlighted within each maintenance procedure. Use of such highlights shall be limited to only critical items and shall not be used in an excessive manner which would reduce their effectiveness.
- F. 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.
- G. 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.
- H. All material within manuals shall be new. Copies used for prior submittals or used in construction shall not be used.
- I. Submit preliminary and final manual editions to the Commissioner according to the approved progress schedule.
- J. Manuals shall present all technical material to the greatest extent possible, with respect to text, tabular matter and illustrations. Illustrations shall preferably consist of line drawings. All applicable drawings shall be included. If available, color photograph prints may be included.
- K. Preliminary manual editions shall be as technically complete as the final manual edition. All illustrations shall be in final forms.
- L. Final manual editions shall be technically accurate and complete and shall represent all "as-built" systems, pieces of equipment, or materials, which have been accepted by the Commissioner. All illustrations, text and tabular material shall be in final form. All shop drawings shall be included as specified in individual Specification Sections.
- M. 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.
- N. Instructions for care and maintenance: Include manufacturers' recommendations for cleaning agents and methods, and recommended schedule for cleaning and maintenance.



- O. 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.
- P. Additional Requirements: Specified in individual Specification Sections.

## **2.6 DEMONSTRATION AND ORIENTATION DVD:**

- A. Non-Commissioned Projects: The Contractor shall submit final version of applicable Demonstration and Training DVD recordings in compliance with Section 01 79 00, DEMONSTRATION AND OWNER'S PRE-ACCEPTANCE ORIENTATION.

## **2.7 GUARANTEES AND WARRANTIES:**

- A. SCHEDULE B – Requirements for guarantees and warranties for the Project are set forth in Schedule B, which is included as part of the Addendum.
- B. FORM – For all guarantee requirements set forth in Schedule B, the Contractor shall provide a written guaranty, in the form set forth herein.
- C. 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



## **2.8 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.

## **2.9 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 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 Project.
- B. Maintenance of Record Documents and Samples: Store 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 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 79 39**



NEW YORK CITY DEPARTMENT OF  
DESIGN + CONSTRUCTION

Division 01 – DDC STANDARD GENERAL CONDITIONS  
SINGLE CONTRACT PROJECTS

Issue Date - June 01, 2013

Revised - January 15, 2015

No Text



**SECTION 01 79 00**  
**DEMONSTRATION AND OWNER'S PRE-ACCEPTANCE ORIENTATION**

**REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 79 00**

**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, when set forth in sections of the Project Specifications, for instructing 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 videotapes. (Non-Commissioned Projects)
- B. The Contractor shall provide the services of equipment manufacturers orientation specialists experienced in the type of equipment to be demonstrated.
- C. Separate Orientation sessions shall 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 shall 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.

**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
- F. Specific requirements for demonstration and training 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.



- B. Design Consultant: "Design Consultant" shall 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.

## 1.5 SUBMITTALS:

- A. Instruction Program: Submit three (3) copies of outline of 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 training, submit three (3) complete training manual(s) and three (3) applicable DVD 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 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 material to the Resident Engineer a minimum of fourteen (14) days prior to the scheduled training.
- F. Demonstration and Orientation Recordings:
1. Non-Commissioned Projects:
- a. The Contractor shall submit to the Commissioner three (3) copies of Demonstration and Orientation DVD (Digital Video Disk) recordings within seven (7) days of end of each training 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.
2. Commissioned Projects:
- a. Demonstration and Orientation DVD recordings for Commissioned projects will be recorded by the Commissioning Authority/Agent (CxA) under separate contract with the City of New



York. The Contractor performing Demonstration and Orientation shall cooperate with the CxA in the recording of each Demonstration and Orientation module.

#### **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 to comply with requirements in 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:
  - 1. 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.
  - h. Performance curves.
2. Documentation: Review the following items in detail:
    - a. Emergency manuals.
    - b. Operations manuals.
    - c. Maintenance manuals.
    - d. Project Record Documents.
    - e. Identification systems.
    - f. Warranties
3. 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.
    - f. Special operating instructions and procedures.
4. 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.
    - m. Special operating instructions and procedures.
5. Adjustments: Include the following:
    - a. Alignments.
    - b. Checking adjustments.
    - c. Noise and vibration adjustments.
    - d. Economy and efficiency adjustments.
6. Troubleshooting: Include the following:
    - a. Diagnostic instructions.
    - b. Test and inspection procedures.
7. 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.
  - h. Housekeeping practices
8. 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.
  - e. Review of spare parts needed for operation and maintenance.

### **PART III – EXECUTION**

#### **3.1 INSTRUCTION:**

- A. Facilitator: Engage a qualified facilitator to prepare instruction program and training 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 shall engage qualified instructors to instruct 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 times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
  - 1. Schedule orientation with the Resident Engineer with at least fourteen (14) days' advance notice.
- D. Evaluation: At conclusion of each orientation module, assess and document each participant's mastery of module(s) by use of an oral a written or a 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 RECORDINGS:**

- A. Non-Commissioned projects:
  - 1. The Contractor shall engage a qualified commercial Videographer to 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 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 DVD (Digital Video Disk) format.
  - 5. Recording: Mount camera on tripod before starting recording, unless otherwise necessary to show area of demonstration and orientation. Display continuous running time.
  - 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 each contractor. The provider of the Orientation program will videotape the sessions and provide a copy to the CxA for final review and comments. If necessary, Contractor shall edit the DVD recording per CxA comments.

**END OF SECTION 01 79 00**



**SECTION 01 81 13**  
**SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS**

**REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 81 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. 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

**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 |
| C. | Section 01 81 19    | INDOOR AIR QUALITY REQUIREMENTS FOR LEED BUILDINGS                                  |
| D. | Section 01 91 13    | GENERAL COMMISSIONING REQUIREMENTS  |

**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. 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.



- C. 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.
- D. Design Consultant: "Design Consultant" shall 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.
- E. Forest Stewardship Council (FSC) Certified Wood: Wood-based materials and products certified in accordance with the Forest Stewardship Council's principles and criteria.
- F. LEED: The Leadership in Energy & Environmental Design rating system developed by the United States Green Building Council.
- G. Rapidly Renewable Materials: 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.
- H. Regionally Manufactured Materials: 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.
- I. Regionally Extracted, Harvested, or Recovered Materials: Materials which are extracted, harvested, or recovered and manufactured within a radius of 500 miles from the Project site.
- J. Recycled Content: 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).
  - 1. 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.
  - 2. Discarded materials from one manufacturing process that are used as constituents in another manufacturing process are pre-consumer recycled materials.
  - 3. "Pre-consumer" may also be referred to as "post-industrial".
- K. 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.
- L. 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.



## 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) shall 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 shall 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 ( $\frac{1}{2} \times \text{pre-consumer percentage} \times \text{product value} + 1 \times \text{post-consumer percentage} \times \text{product value} = \text{total recycled content value}$ ).
      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 shall record the above information only for those materials or products permanently installed in the project. The EBMCF shall 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 (1<sup>st</sup> edition, May 1993)
  - b. Anti-corrosive and Anti-rust paints: refer to Green Seal standard GC-03 (2<sup>nd</sup> Edition, January 1997)
  - c. Aerosol Adhesives: refer to Green Seal standard GS-36 (1<sup>st</sup> 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 shall be 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.
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 shall be 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.
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 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. 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 shall 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 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.
    - 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 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 on a regular basis, and for assembling the required LEED documentation.
  - b. The Contractor shall be responsible for the provision, maintenance, and repair of all ESC measures.
  - c. Demonstration. The Contractor shall provide on-site instruction of proper construction practices required to prevent erosion and sedimentation.
  - d. Meetings. Urgent or ongoing ESC issues shall be discussed at weekly on-site job meetings.

#### 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 on a regular basis, and for assembling the required LEED documentation.
- 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 EBMCF and any other forms or templates required for the subcontractors to record LEED documentation. The Contractor shall 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 shall 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



## ENVIRONMENTAL BUILDING MATERIALS CERTIFICATION FORM

Project Name:

Project ID:

100

<sup>1</sup>**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.

<sup>2</sup> **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.

<sup>3</sup> 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.

<sup>4</sup> **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.

<sup>5</sup> **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.

**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.

<sup>9</sup> **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/unreated 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.

<sup>10</sup>**Added Urea Formaldehyde:** Applies to composite wood and adfibre products only (plywood, particleboard, MDF, OSB, wheatboard, strawboard). Resins or binders with added urea formaldehyde are prohibited.

<sup>11</sup>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: \_\_\_\_\_

NO TEXT



## SECTION 01 81 13.13

### VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES, SEALANTS, PAINTS AND COATINGS FOR LEED 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 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 and coatings, the requirements set forth in this Section shall 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 BUILDINGS
- I. Section 01 81 19 INDOOR AIR QUALITY FOR LEED BUILDINGS

##### 1.4 DEFINITIONS:

- A. **ADHESIVE:** Any substance used to bond one surface to another by attachment. Includes adhesive primers and adhesive bonding primers.
  - 1. **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.
- B. **CARCINOGEN:** A chemical listed as a known, probable, reasonably anticipated, or possible human

VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES,  
SEALANTS, PAINTS & COATINGS FOR LEED BUILDINGS



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).

- C. **CLEAR WOOD FINISH:** Clear/semi-transparent coating applied to wood substrates to provide a transparent or translucent solid film.
  - 1. **Lacquer:** Clear/semi-transparent coating formulated with cellulosic or synthetic resins to dry by evaporation without chemical reaction and provide a solid, protective film.
  - 2. **Sanding Sealer:** A sanding sealer that also meets the definition of a lacquer.
  - 3. **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.
- D. **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.
- E. **FLOOR COATING:** Opaque coating applied to flooring. Excludes industrial maintenance coatings.
- F. **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.
- G. **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).
- H. **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.
- I. **PAINT:** A pigmented coating. For the purposes of this specification, paint primers are considered to be paints.
  - 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.
- J. **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.
- K. **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.).
- L. **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).
- M. **SEALANT:** Any material with adhesive properties, formulated primarily to fill, seal, or waterproof gaps or joints



between surfaces. Includes sealant primers and caulks.

- N. 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.
- O. STAIN: Clear semi-transparent/opaque coating formulated to change the color but not conceal the grain pattern or texture of the substrate.
- P. 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.
- Q. 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.
- R. 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 shall 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, shall 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](http://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](http://www.aqmd.gov)
- C. Green Seal Standard GS-11- “Paints”, of Green Seal, Inc., Washington, DC, [www.greenseal.org](http://www.greenseal.org)
- D. Green Seal Standard GC-03- “Anti-Corrosive Paints”, of Green Seal, Inc., Washington, DC, [www.greenseal.org](http://www.greenseal.org)

#### 1.6 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”) shall 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 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.
- C. No product shall 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 shall 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

VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES,  
SEALANTS, PAINTS & COATINGS FOR LEED BUILDINGS



- |    |   |                     |
|----|---|---------------------|
| 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 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.
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:
5. 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  
 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 shall 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 shall 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 shall 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 shall 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 shall 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 SUSTAINABLE REQUIREMENTS FOR LEED 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**



**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 shall 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, poor housekeeping, shall 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. Section 01 81 13, SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS
- C. Section 01 81 13.13, VOLATILE ORGANIC COMPOUND (VOC) LIMITS FOR ADHESIVES, SEALANTS, PAINTS AND COATINGS.
- D. Division 9 (of the Specifications): Finishes.

**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" shall 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. Volatile Organic Compounds (VOC's): 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 VOC's are harmful, but many of those contained within building products contribute to the formation of smog and may irritate building occupants by their smell and/or health impact.



- D. 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 VOC's emitted by "source" materials and release them over a prolonged period of time.
- E. Materials that act as "sources" for VOC contamination: Products with high VOC contents that emit VOC's 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", First Edition, November 1995, The Sheet Metal and Air Conditioner Contractors National Association (SMACNA). (703) 803-2980, [www.smacna.org](http://www.smacna.org).
- B. ANSI/ASHRAE 52.2-1999, "Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size", [www.ashrae.org](http://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 shall not be allowed if such changes compromise the stated LEED BUILDING Performance Criteria.

#### 1.7 CONSTRUCTION IAQ MANAGEMENT PLAN :

- A. The Contractor shall prepare a Construction IAQ Management Plan in coordination with each subcontractor and submit the IAQ Management Plan to the Commissioner for approval in accordance with Section 01 33 00, SUBMITTAL PROCDEURES. The Construction IAQ Management Plan shall meet the following criteria:
  - 1. Construction activities shall be planned to meet or exceed the minimum requirements of the Sheet Metal and Air Conditioning National Contractors' Association (SMACNA) "IAQ Guidelines for Occupied Buildings under Construction", First Edition, 1995.
  - 2. Absorptive materials shall be protected from moisture damage when stored on-site and after installation.
  - 3. 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 grill, as determined by ASHRAE 52.2-1999.
  - 4. Filtration media shall be replaced immediately prior to occupancy. Filtration media shall have a Minimum Efficiency Reporting Value (MERV) of 13 as determined by ASHRAE 52.2-1999 if the project is pursuing Indoor Air Quality Credit 5: Indoor Chemical Pollutant Source Control.
  - 5. A "Sequence of Finish Installation Plan" shall be developed, highlighting measures to reduce the absorption of VOCs by materials that act as "sinks".
  - 6. Upon approval of the Plan by the Commissioner, it shall 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. Further description of the Construction IAQ Management Plan requirements is 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 shall be organized in accordance with the SMACNA format, and shall address measures to be implemented in each of the five categories (including subsections). All subsections shall 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 and 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.
  - b. Source Control
    - 1) Protect stored on-site or installed absorptive or porous materials.
    - 2) Do not use wet or damaged porous materials in the building.
    - 3) 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.
    - 4) Exhaust fumes from idling vehicles and gasoline fueled tools through use of funnels or temporary piping.
    - 5) Containers housing toxic materials and materials with VOC levels above the limits for interior adhesives, sealants, paints, and coatings described in these Specifications, shall be closed when not in use.
  - c. Pathway Interruption
    - 1) Depressurize work areas to 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.
  - 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 particulate filters. Activities which produce high levels of dust shall 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) Materials which become contaminated through direct exposure to moisture from



- precipitation, plumbing leaks, or condensation shall be replaced by the Contractor.
- 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 shall be a regular action topic at weekly site coordination meetings. Implementation of the Plan shall be documented in the meeting minutes.
2. Protection of Materials from Moisture Damage: As part of the “Housekeeping” section of the Construction IAQ Management Plan, measures to prevent installed materials or material stored on-site from moisture damage shall be described. This section should also describe measures to be taken if moisture damage does occur to absorptive materials during the course of construction.
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 shall be provided. The description shall 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 shall be installed after the installation of materials or finishes which have high short-term emissions of VOC's, 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. Develop and implement an Indoor Air Quality (IAQ) Management Plan for the pre-occupancy phase as follows:

OPTION 1 — Flush-Out

- After construction ends, prior to occupancy and with all interior finishes installed, 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 relative humidity no higher than 60%.

OR

- 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 shall be ventilated at a minimum rate of 0.30 cfm/sq.ft. of outside air or the design minimum outside air rate determined in EQ Prerequisite 1, whichever is greater. During each day of the flush-out period, ventilation shall begin a minimum of three hours prior to occupancy and continue during occupancy. These conditions shall be maintained until a total of 14,000 cu.ft./sq.ft. of outside air has been delivered to the space.

OR



**OPTION 2 — Air Testing**

- Conduct baseline IAQ testing, after construction ends and prior to occupancy, using testing protocols consistent with the United States Environmental Protection Agency Compendium of Methods for the Determination of Air Pollutants in Indoor Air and as additionally detailed in the LEED-NC Reference Guide.
- Demonstrate that the contaminant maximum concentrations listed below are not exceeded.

CONTAMINANT	MAXIMUM CONCENTRATION
Formaldehyde	27 parts per billion
Particulates (PM10)	50 micrograms per cubic meter
Total Volatile Organic Compounds (TVOC)	500 micrograms per cubic meter
* 4-Phenylcyclohexene (4-PCH)	6.5 micrograms per cubic meter
Carbon Monoxide (CO)	9 part per million and no greater than 2 parts per million above outdoor levels
* This test is only required if carpets and fabrics with styrene butadiene rubber (SBR) latex backing material are installed as part of the base building systems.	

- 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.
- The air sample testing shall be conducted as follows:
  - a. All measurements shall 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.
  - b. The building shall 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 encouraged, but not required, to be in place for the testing.
  - c. 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 shall 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.
  - d. Air samples shall 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.
- 6. Implementation and Coordination: Implement the Construction IAQ Management Plan, and coordinate the Plan with all affected trades. 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 Plan with the Commissioner on a regular basis, 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 shall distribute copies of the Construction IAQ Management Plan in accordance with Section 01 33 00, SUBMITTAL PROCEDURES.
- b. Instruction: The Contractor shall provide on-site instruction of appropriate site management to all Contractor's Subcontractors.
- c. Monitoring: The Construction IAQ Representative shall monitor the implementation of the Construction IAQ Management Plan.

#### **1.8 SUBMITTALS:**

Submit the following LEED-required records and documents in accordance with Section 01 33 00, SUBMITTAL PROCEDURES and Section 01 81 13, SUSTAINABLE DESIGN REQUIREMENTS FOR LEED BUILDINGS.

- A. A copy of the Construction IAQ Management Plan as defined in Sub-Section 1.07 herein.
- B. Product cut-sheets for all filtration media used during construction and installed immediately prior to occupancy, with MERV values highlighted. Cut sheets shall be submitted with the Contractor's or Subcontractor's 'approved' stamp as confirmation that the products are the products installed on the project.
- C. Provide the Commissioner with 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. The photographs shall 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 shall include integral date stamping, and shall 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 TAQ Testing report if applicable.

#### **1.9 QUALITY ASSURANCE:**

- A. The Contractor shall be responsible for preparing and implementing the Construction IAQ Management Plan and shall coordinate and incorporate the work of its subcontractors in the IAQ Management Plan.
- B. Responsibility of Subcontractors: Subcontractors for this project shall be responsible to cooperate with the Contractor in the preparation and implementation of the Construction IAQ Management Plan.

**PART II – PRODUCTS (Not Used)**

**PART III – EXECUTION (Not Used)**

**END OF SECTION 01 81 19**



**SECTION 01 91 13**  
**GENERAL COMMISSIONING REQUIREMENTS**

**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. OPR and BoD documentation 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:**

- A. This Section includes general requirements that apply to implementation of Commissioning without regard to systems, subsystems, and equipment being commissioned.
- B. This Section includes:
  - 1. Definitions
  - 2. Commissioning Team
  - 3. City's Responsibilities
  - 4. Each Contractor's Responsibilities
  - 5. Commissioning Authority's/Agent's (CxA) Responsibilities
  - 6. Commissioning Documentation
  - 7. Submittals
  - 8. Coordination

**1.3 RELATED SECTIONS:** Include without limitation the following:

- A. "HVAC Commissioning Requirements" indicated in other sections of the project specifications for specific requirements for commissioning HVAC systems.
- B. This project will be commissioned by an independent third party under separate contract with the City of New York. Commissioning shall be in accordance with ASHRAE and USGBC LEED procedures, and specific commissioning requirements of the Project Specifications, whichever is more stringent. The Contractor shall 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 OWNERS PRE-ACCEPTANCE ORIENTATION
  - 6. Section 01 81 13 SUSTAINABLE DESIGN REQUIREMENTS 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.





- B. Design Consultant: "Design Consultant" shall 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. Commissioner: The Commissioner of the Department of Design and Construction of the City of New York, his/her successors, or duly authorized representative(s).
- D. BoD: Basis of Design: A document, prepared by the Consultant Architect/Engineer, 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.
- E. Commissioning Plan: A document that outlines the organization, schedule, allocation of resources, and documentation requirements of the commissioning process.
- F. CxA: Commissioning Agent (Aka Commissioning Authority) under separate contract with the City of New York to provide Commissioning Services for this project.
- G. OPR: Owner's (City of New York) Project Requirements: A document, prepared by the Consulting Architect/Engineer) 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.
- H. Systems, Subsystems, Equipment, and Components: Where these terms are used together or separately, they shall mean "as-built" systems, subsystems, equipment, and components.
- I. TAB: Testing, Adjusting, and Balancing.

#### **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 shall 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. Consultant Architect/Engineer and other concerned entities.

#### **1.6 CITY'S RESPONSIBILITIES:**

- A. Provide the OPR documentation to the Commissioning Agent (CxA) for use in developing the commissioning plan; systems manual; operation and maintenance training plan; and testing plans and checklists.
- B. Assign operation and maintenance personnel and schedule them to participate in commissioning team activities.



- C. Provide the BoD documents, prepared by the Consulting Architect/Engineer and approved by the Commissioner, to the Commissioning Agent (CxA) for use in developing the commissioning plan, systems manual, and operation and maintenance training plan.

#### **1.7 CONTRACTOR'S RESPONSIBILITIES:**

- A. The Contractor shall provide utility services required for the commissioning process.
- B. As a member of the Commissioning Team, the Contractor and subcontractor(s) shall assign representatives with expertise and authority to act on behalf of the Contractor and its subcontractor(s) 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. Review and accept commissioning process test procedures provided by the CxA.
  - 4. Review and accept construction checklists provided by the CxA.
  - 5. Perform testing required in the Commissioning Schedule as per the Commissioning Process test procedures provided by the CxA.
  - 6. Complete installation checklists as Work is completed and return to CxA through the Resident Engineer.
  - 7. Cooperate with the CxA for resolution of issues recorded in the Issues Log.
  - 8. Evaluate performance deficiencies identified in test reports and, in collaboration with entity responsible for system and equipment installation, recommend corrective action.
  - 9. Submit As-Built documents, operation and maintenance manuals for systems and subsystems, and equipment in accordance with Section 01 78 39, CONTRACT RECORD DOCUMENTS.
  - 10. Provide orientation sessions for operation and maintenance personnel (sessions will be video recorded by the CxA) in accordance with Section 01 79 00, DEMONSTRATION AND OWNER'S PRE-ACCEPTANCE ORIENTATION.

#### **1.8 COMMISSIONING AGENT'S (CxA) RESPONSIBILITIES:**

- A. Organize and lead the commissioning team.
- B. Prepare a construction-phase commissioning plan. Collaborate through the Resident Engineer 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.
- 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 Resident Engineer to convene commissioning team meetings for the purpose of coordination, communication, and conflict resolution; discuss progress of the commissioning processes. Responsibilities include arranging for facilities, preparing agenda and attendance lists, and notifying participants. The Commissioning Agent CxA will prepare and distribute minutes to commissioning team members and attendees within three workdays of the commissioning meeting.
- E. At the beginning of the construction phase, coordinate with the Resident Engineer'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 training sessions, TAB Work, and Project completion.



- F. Observe and inspect construction. 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 Project-specific test and inspection procedures and checklists.
- H. Coordinate with the Resident Engineer to schedule, direct, witness, and document tests, inspections, and systems startup.
- I. Compile test data, inspection reports, and certificates and include them in the systems manual and commissioning report.
- J. Certify date of acceptance and startup for each item of equipment for start of warranty periods.
- K. 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.
- L. Record and edit demonstration and orientation sessions on DVD.
- M. Prepare commissioning reports.
- N. Assemble the final commissioning documentation, including the commissioning report and Systems Manual.

#### 1.9 COMMISSIONING DOCUMENTATION:

The Contractor shall assist the Commissioning Agent (CxA) in the development and compiling of the following Commissioning Documentation:

- A. Index of Commissioning Documents: The Commissioning Agent (CxA) will prepare an index including the storage location of each document.
- B. OPR: A written document prepared by the Commissioning Agent (CxA) that details the functional requirements of the Project and expectations of how it will be used and operated. This document includes the Project and design goals, measurable performance criteria, budgets, schedules, success criteria, and supporting information.
- C. BoD Document: A document prepared by the Consulting Architect/Engineer 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 explain the designed systems.
- D. Commissioning Plan: A document prepared by the Commissioning Agent (CxA) that outlines the schedule, allocation of resources, and documentation requirements of the commissioning process.
- E. Test Checklists: The Commissioning Agent (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.
- F. 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.
- G. Test and Inspection Reports: The Commissioning Agent (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 shall compile test and inspection reports and test and inspection certificates and include them in systems manual and commissioning report.



- H. Corrective Action Documents: The Commissioning Agent (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 shall retest systems and equipment requiring corrective action. The CxA will document retest results.
- I. Issues Log: The Commissioning Agent (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.
  - 1. Commissioning Report: The Commissioning Agent (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.
- J. Systems Manual: The Commissioning Agent (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. Commissioning Plan Pre-final Submittal: The Commissioning Agent (CxA) will submit six (6) copies of the pre-final commissioning plan to the Commissioner for review and distribution.
- B. Commissioning Plan Final Submittal: The Commissioning Agent (CxA) will submit six (6) hard copies and electronically formatted information of the final commissioning plan to the Commissioner. The final submittal will address previous review comments.
- C. Test and Inspection Reports: CxA will submit test and inspection reports.
- D. Corrective Action Documents: CxA will submit corrective action documents.

#### 1.11 COORDINATION:

- A. Coordinating Meetings: The Commissioning Agent (CxA) will coordinate with the Resident Engineer'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.
- B. Pre-testing Meetings: The Commissioning Agent (CxA) will coordinate with the Resident Engineer 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.
- C. Testing Coordination: The Commissioning Agent (CxA) will coordinate with the Resident Engineer 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.
  - 1. Coordinate schedule times with the Resident Engineer for tests, inspections, obtaining samples, and similar activities.
- D. Manufacturers' Field Services: The Commissioning Agent (CxA) will coordinate services of manufacturers' field services.

#### PART II – PRODUCTS (Not Used)



## **PART III – EXECUTION**

### **3.1 OPERATION & MAINTENANCE MANUALS**

- A. General
  - 1. The CxA shall review the Operation & Maintenance manuals provided by the Contractor or subcontractors for completeness of the document. The review process shall verify that Operation & Maintenance instructions meet specifications and are included for all commissioned equipment furnished by the Contractor.
  - 2. Published literature shall be specifically oriented to the provided equipment, indicating required operation and maintenance procedures, parts lists, assembly / disassembly diagrams and related information.
  - 3. The Contractor shall incorporate the standard technical literature into system specific formats for this facility as designed and as actually installed. The resulting Operation & Maintenance information shall be system specific, concise, to the point and tailored specifically to this facility. The CxA shall review these documents as necessary for final corrections by the Contractor.
- B. The Operation & Maintenance Manual review and coordination efforts shall be completed prior to Owner orientation sessions, as these documents are to be utilized in the training sessions.
- C. System Operations Manual
  - 1. The CxA shall prepare and deliver these documents with inputs from other agencies. The contractors will confirm the proper documents are onsite and readily available. Typically, the manual includes the following:
    - a. Commissioned systems single line diagrams (Mechanical, Electrical, Plumbing, and Building Management System (BMS) subcontractors).
    - b. As built sequences of operations, control drawings and original set points (Design Consultant and BMS subcontractor)
    - c. Operating instructions for integrated building systems (mechanical and BMS subcontractors).
    - d. Recommended schedule of maintenance requirements and frequency (subcontractors).
    - e. Recommended schedule for calibrating sensors and actuators (BMS subcontractor)

### **3.2 DEMONSTRATION AND INSTRUCTION**

- A. The Contractor shall schedule and coordinate instruction sessions for the facility's staff for each commissioned system. Demonstrations shall be held per Contract Documents, along with the appropriate schematics, handouts and visual / audio training aids onsite with equipment.
- B. The equipment vendors shall provide instruction on the specifics of each major equipment item including philosophy, troubleshooting and repair techniques.
- C. For additional prescription pertinent to instruction, refer to other specific divisions for demonstration and instruction requirements.

### **3.3 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 unsuitable loads / conditions were unavailable during the performance testing stages (in other words; the requirement for testing is warranted).
- B. If agreed upon by facility, Seasonal Testing can also be used for the Warranty Review. During which the CxA will interview the occupants, 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.



NEW YORK CITY DEPARTMENT OF  
DESIGN + CONSTRUCTION

### **3.4 RECORD DRAWINGS**

- A. The CxA shall review the as built contract documents to verify incorporation of both design changes and as built construction details. Discrepancies noted shall be corrected by the appropriate party.

**END OF SECTION 01 91 13**



NEW YORK CITY DEPARTMENT OF  
DESIGN + CONSTRUCTION

Division 01 – DDC STANDARD GENERAL CONDITIONS  
SINGLE CONTRACT PROJECTS

Issue Date - June 01, 2013

Revised - January 15, 2015

**NO TEXT**





FMS ID: PO79GENER



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](http://www.nyc.gov/buildnyc)

**Contract for Furnishing all Labor and Material Necessary and Required for:**

**CONTRACT NO. 1 ELECTRICAL WORK**

**Replacement of Generators at 2 NYPD  
Precincts**

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

Commerce Electrical Contracting Corp  
Contractor

Dated May 29, , 20 18

Approved as to Form  
Certified as to Legal Authority

[Signature]  
Acting Corporation Counsel

CL  
1/12/18

Dated June 12, , 20 18

Entered in the Comptroller's Office

First Assistant Bookkeeper

Dated \_\_\_\_\_, 20 \_\_\_\_\_





**Department of  
Design and  
Construction**

**PROJECT ID:**

**PO79GENER**

**LAW**

**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 3 OF 3**

**ADDENDUM TO THE GENERAL  
CONDITIONS**

**SPECIFICATIONS**

**FOR FURNISHING ALL LABOR AND MATERIALS  
NECESSARY AND REQUIRED FOR:**

**Replacement of Generators at 2  
NYPD Precincts**

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

**Various  
Manhattan**

**CONTRACT NO. 1**

**ELECTRICAL WORK**

**NYPD**

**Goldman Copeland**

**Date: December 20, 2017**





**Department of  
Design and  
Construction**

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

**ADDENDUM TO THE GENERAL CONDITIONS  
FOR SINGLE CONTRACT PROJECTS**

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**The General Conditions are hereby amended in accordance  
with the terms and conditions set forth in this Addendum.**

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**I. PROJECT DESCRIPTION**

**FMS #:** PO79GENER  
**PROJECT NAME:** Replacement of Generators at 2 NYPD Precincts

**PROJECT DESCRIPTION:** This project consists of Replacement of Generators at 2 NYPD Precincts. Additionally, the project will include the modification of switchgear, electrical services, mechanical, architectural and structural components.

**SITE A:**  
**PROJECT LOCATION:** NYPD 5<sup>th</sup> POLICE PRECINCT, 19 Elizabeth Street  
**BOROUGH:** Manhattan  
**CITY OF NEW YORK**  
**ZIP CODE:** 10013  
**COMMUNITY BOARD #:** Manhattan Community Board 3

**SITE B:**  
**PROJECT LOCATION:** NYPD 25<sup>th</sup> POLICE PRECINCT, 120 E 119<sup>th</sup> Street  
**BOROUGH:** Manhattan  
**CITY OF NEW YORK**  
**ZIP CODE:** 10035  
**COMMUNITY BOARD #:** Manhattan 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 (5<sup>th</sup> Police Precinct Only)

*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 F 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 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		
			X		
01 3591		Historic Treatment Procedures			
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		
	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	

<u>Section</u>	<u>Sub-Section</u>	<u>Sub-Section</u>	<u>Applies</u>	<u>Does not Apply</u>	<u>Applies as Amended</u>
<b>01 5411</b>	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	
<b>01 7300</b>	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	
<b>01 7419</b>	1.5 (C)	Waste Management Performance Requirements / LEED Certification		X	
<b>01 7900</b>		Demonstration and Owner's Pre-Acceptance Orientation	X		
<b>01 8113</b>		Sustainable Design Requirements for LEED Buildings		X	
<b>01 8113.13</b>		VOC Limits for Adhesives, Sealants, Paints and Coatings for LEED Buildings		X	
<b>01 8119</b>		Indoor Air Quality Requirements for LEED Buildings		X	
<b>01 9113</b>		General Commissioning Requirements		X	

#### AMENDED SECTIONS/SUB-SECTIONS

The Contractor is advised that the amended Sub-Sections set forth below are included in the General Conditions and apply to the Project.

#### Section Temporary Facilities, Services and Controls 015000, Add 1.6 C & D:

- C. NYPD precincts are 24 Hour facilities and are to maintain police operations during the construction. Contractor shall establish work scheduling and phasing with City of New York as to minimize disruption of police department operations.
- D. NYPD precincts are secure facilities and require contractors to be accompanied by City of New York representatives at all times within precincts.

#### VIII. SPECIAL EXPERIENCE REQUIREMENTS FOR THE PROJECT

Special Experience Requirements will apply to the Bidder only. Refer to page 3 of Volume 1 - Bid Booklet for further information.

#### 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 Bid Booklet contains a Notice which identifies a particular product from a designated manufacturer as a "Proprietary Item", 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 Bid Booklet. 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 Bid Booklet, 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 Bid Booklet. In the event of any conflict or inconsistency between (1) the Notice regarding Alternate Bids set forth in the Bid Booklet and (2) a provision in the Specifications and/or the Contract Drawings regarding Alternate Bids, the Notice set forth in the Bid Booklet shall prevail. If the agency is not requesting the submission of Alternate Bids, as indicated by the absence of a Notice in the Bid Booklet, 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, 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, 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) 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.
- (b) 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.
- (c) 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 Attachment 1 – Bid Information in the Bid Booklet
Information For Bidders	Performance and Payment Bonds		See Attachment 1- Bid Information in the Bid Booklet
Article 14 Contract	Time of Substantial Completion	Consecutive Calendar Days	720 ccd
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	60%
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: <u>1 (one)</u>
Article 75 Contract	Compensation to be Paid to Contractor		Amount for which the Contract was Awarded: <i>three million, three hundred twelve thousand nine hundred ninety seven</i> (\$ <u>3,312,997.00</u> ) Dollars
Article 79 Contract	MWBE Program		See MWBE Utilization Plan in the Bid Booklet

**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>The minimum limits shall be \$1,000,000.00 per occurrence and \$2,000,000.00 per project aggregate applicable to this <b>Contract</b>.</p> <p>Additional Insureds:</p> <p>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</p> <p>2. All person(s) or organization(s), if any, that Article 22.1.1(b) of the <b>Contract</b> 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).</p> <p>3. _____</p>
<div>■ Workers' Compensation      Art. 22.1.2</div> <div>■ Disability Benefits Insurance      Art. 22.1.2</div> <div>■ Employers' Liability      Art. 22.1.2</div> <div><input type="checkbox"/> Jones Act      Art. 22.1.3</div> <div><input type="checkbox"/> U.S. Longshoremen's and Harbor Workers Compensation Act      Art. 22.1.3</div>	<p>Workers' Compensation, Employers' Liability, and Disability Benefits Insurance: Statutory per New York State law without regard to jurisdiction.</p> <p><b>Note:</b> 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>

**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>■ Builders' Risk</div> <div>Art. 22.1.4</div>	<div>100 % of total value of <b>Work</b></div> <div><b>Contractor</b> the Named Insured; the <b>City</b> both an Additional Insured and one of the loss payees as its interests may appear.</div> <div>If the <b>Work</b> does not involve construction of a new building or gut renovation work, the <b>Contractor</b> may provide an installation floater in lieu of Builders Risk insurance.</div> <div>Note: Builders Risk Insurance may terminate upon <b>Substantial Completion</b> of the <b>Work</b> in its entirety.</div>
<div>■ Commercial Auto Liability</div> <div>Art. 22.1.5</div>	<div>\$1,000,000.00 per accident combined single limit</div> <div>If vehicles are used for transporting hazardous materials, the <b>Contractor</b> shall provide pollution liability broadened coverage for covered vehicles (endorsement CA 99 48) as well as proof of MCS 90</div>
<div><input type="checkbox"/> Contractor's Pollution Liability</div> <div>Art. 22.1.6</div>	<div>\$_____ per occurrence</div> <div>\$_____ aggregate</div> <div>Additional Insureds:</div> <div>1. City of New York, including its officials and employees, and</div> <div>2. _____</div> <div>3. _____</div>
<div><input type="checkbox"/> Marine Protection and Indemnity</div> <div>Art. 22.1.7(a)</div>	<div>\$_____ per occurrence</div> <div>\$_____ aggregate</div> <div>Additional Insureds:</div> <div>1. City of New York, including its officials and employees, and</div> <div>2. _____</div> <div>3. _____</div>

**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
<input type="checkbox"/> Hull and Machinery Insurance      Art. 22.1.7(b)	\$ _____ per occurrence  \$ _____ aggregate  Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
<input type="checkbox"/> Marine Pollution Liability      Art. 22.1.7(c)	\$ _____ each occurrence  Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
[OTHER]      Art. 22.1.8  <input type="checkbox"/> Ship Repairers Legal Liability	\$ _____ each occurrence
[OTHER]      Art. 22.1.8  <input type="checkbox"/> Collision Liability/Towers Liability	\$ _____ per occurrence  \$ _____ aggregate  Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
[OTHER]      Art. 22.1.8  <input type="checkbox"/> Railroad Protective Liability	\$ _____ per occurrence  \$ _____ aggregate  Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____

**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>■ 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</p> <p>2. _____</p> <p>3. _____</p>
<p>[OTHER] Art. 22.1.8</p> <p>□ 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

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30-30 Thomson Avenue, 4<sup>th</sup> Floor

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Long Island City, New York 11101

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**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
087100	Finish Hardware – Door Closers	10 Years
087100	Finish Hardware – Lock Sets	3 Years
230993	Automatic Temperature Control System (ATC)	1 Year
235300	Fuel Tank	10 Years
235300	Transfer Pumps	2 Years
238240	Flue Exhaust Condensate Acid Neutralizer	1 Year
263213	Engine Generator	5 Years
263600	Transfer Switches	18 Months

**(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-000.00  
TITLE SHEET

**NYPD 5TH PRECINCT**

T-000.00  
TITLE SHEET

**ARCHITECTURAL DRAWINGS**

A-050.00  
NOTES & SCHEDULES  
A-051.00  
CELLAR DEMOLITION PLAN  
A-100.00  
CELLAR FLOOR PLAN

**ELECTRICAL DRAWINGS**

E-001.00  
ELECTRICAL NOTES, SYMBOLS LIST  
E-050.00  
ELECTRICAL CELLAR FLOOR DEMOLITION PLAN  
E-100.00  
ELECTRICAL CELLAR FLOOR LIGHTING PLAN  
E-200.00  
ELECTRICAL CELLAR FLOOR POWER PLAN  
E-350.00  
ELECTRICAL ONE LINE DIAGRAM  
E-400.00  
ELECTRICAL PANEL SCHEDULES

**MECHANICAL DRAWINGS**

M-001.00  
MECHANICAL SYMBOLS AND NOTES  
M-010.00  
MECHANICAL 2007 FIRM MAP  
M-011.00  
MECHANICAL 2013 FIRM MAP  
M-050.00  
MECHANICAL CELLAR FLOOR DEMOLITION PLAN  
M-100.00  
MECHANICAL CELLAR PART PLAN  
M-200.00  
GENERATOR FUEL PIPING SYSTEM  
M-300.00  
MECHANICAL DETAILS SHEET

**STRUCTURAL DRAWINGS**

S-100.00  
CELLAR PLAN

S-101.00  
STRUCTURAL NOTES & DETAILS  
S-102.00  
STRUCTURAL DETAILS

ENERGY ANALYSIS DRAWINGS  
EN-001.00  
ENERGY ANALYSIS – MECHANICAL  
EN-100.00  
ENERGY ANALYSIS – LIGHTING  
EN-101.00  
ENERGY ANALYSIS – EXTERIOR WALL

PHOTOGRAPHS  
PH-001.00

H-001.00  
ASBESTOS ABATEMENT GENERAL NOTES  
H-002.00  
ASBESTOS ABATEMENT PARTIAL CELLAR FLOOR PLAN

**NYPD 25TH PRECINCT**

T-000.00  
TITLE SHEET

ARCHITECTURAL DRAWINGS  
A-050.00  
NOTES & SCHEDULES  
A-100.00  
CELLAR PLAN  
A-101.00  
FIRST FLOOR PLAN  
A-102.00  
SECOND FLOOR LOW ROOF PLAN

ELECTRICAL DRAWINGS  
E-001.00  
ELECTRICAL NOTES, SYMBOLS LIST  
E-050.00  
ELECTRICAL DEMOLITION PART PLAN  
E-200.00  
ELECTRICAL POWER PART PLANS  
E-201.00  
ELECTRICAL POWER PART PLANS  
E-350.00  
ELECTRICAL DEMOLITION PARTIAL RISER DIAGRAM  
E-351.00  
ELECTRICAL PARTIAL RISER DIAGRAM  
E-400.00  
ELECTRICAL PANEL SCHEDULES

MECHANICAL DRAWINGS  
M-001.00  
MECHANICAL SYMBOLS AND NOTES  
M-002.00  
MECHANICAL SCHEDULES  
M-010.00

MECHANICAL 2007 FIRM MAP  
M-011.00  
MECHANICAL 2013 FIRM MAP  
M-050.00  
MECHANICAL CELLAR DEMOLITION PLAN  
M-051.00  
MECHANICAL 1ST FLOOR AND 2ND FLOOR PART PLANS DEMOLITION  
M-100.00  
MECHANICAL CELLAR PLAN  
M-101.00  
MECHANICAL CELLAR PART PLAN  
M-102.00  
MECHANICAL 1ST FLOOR AND 2ND FLOOR PART PLANS  
M-200.00  
GENERATOR FUEL PIPING SYSTEM  
M-300.00  
MECHANICAL DETAILS SHEET

STRUCTURAL DRAWINGS  
S-100.00  
PARTIAL FRAMING PLANS AT CELLAR, FIRST AND SECOND FLOORS  
S-101.00  
DETAILS AND NOTES

ENERGY ANALYSIS DRAWINGS  
EN-001.00  
ENERGY ANALYSIS - MECHANICAL  
EN-100.00  
ENERGY ANALYSIS - LIGHTING

H-001.00  
ASBESTOS ABATEMENT GENERAL NOTES  
H-002.00  
ASBESTOS ABATEMENT PARTIAL CELLAR FLOOR PLAN  
H-002.00  
ASBESTOS ABATEMENT PARTIAL FIRST FLOOR PLAN

## SCHEDULE D

### Electrical Motor Control Equipment

**(Reference: 01 3506, Article 3.8 of the DDC Standard General Conditions)**

Requirements for electrical motor equipment may be included in one or more sections of the Specifications for the Contract for the Project. Schedule D set forth below delineates specific information for electrical motor control equipment. In the event of any conflict between the Specifications and this Schedule D, Schedule D shall take precedence; provided, however, in the event of an omission from Schedule D (i.e., Schedule D omits either a reference to or information concerning electrical motor equipment which is set forth in the Specifications), such omission from Schedule D shall have no effect and the Contractor's obligation with respect to the electrical motor control equipment, as set forth in the Specifications, shall remain in full force and effect.

<b>DB</b> Disconnect Circuit Breaker (Switch) <b>TS</b> Thermal Switch <b>MS</b> Magnetic Starter <b>CMS</b> Comb. Mag. Starter	<b>P</b> Pilot Light <b>F</b> Firestat <b>T</b> Thermostat <b>AL</b> Alternator	<b>BG</b> Break Glass Station <b>HOA</b> Hand-Off Auto. <b>PB</b> Push Button Station <b>RO</b> Remote "off"
--	--	---

Equip. Ident.	Location	# of Units	HP or KW	Volts and Phase	Control Type: See legend above	Remarks:
EUH-1	5 <sup>th</sup> Pct	1	5kW	208V 3Φ	T	
EF-1	5 <sup>th</sup> Pct	1	1/4HP	120V 1Φ	T	
EUH-1	25 <sup>th</sup> Pct	1	5kW	208V 3Φ	T	

SCHEDULE E

Separation of Trades

*NOT USED FOR SINGLE CONTRACTS*

## SCHEDULE F

### Submittals Schedule

**(Reference: Section 01 3300 Article 1.5 (C) of the General Conditions)**

The Schedule set forth below lists all submittal requirements for the Contract. In the event of any conflict between the Specifications and this Schedule F, Schedule F shall take precedence; provided, however, in the event of an omission from Schedule F (i.e., Schedule F omits either a reference to or information concerning a submittal requirement which is set forth in the Specifications), such omission from Schedule F shall have no effect and the Contractor's submittal obligation, as set forth in the Specifications, shall remain in full force and effect.

CONSULTANT:  
TELEPHONE NUMBER:  
DDC PROJECT MANAGER:  
TELEPHONE NUMBER:

DATE: \_\_\_\_\_

APPROVED: \_\_\_\_\_  
(DDC RESIDENT ENGINEER/CPM)

REPORT DATE		FMS ID #/PROJECT ID #: CONTRACT REGISTRATION #: PROJECT NAME:					CONTRACT #: TRADE: SHOP DRAWING LOG SHEET #									
SPEC. SECT. #	DESCRIPTION	COORD. WITH CONTR.	SUBMITTAL			SUB. DATE	REQ'D DEL.	FABRIC. TIME	SUBMISSIONS							
			SHOP DWG.	SAMPLE	CAT. CUTS				REC'D	RET'D	ACTION	REC'D	RET'D	ACTION		
013526	Safety and Health Program	X														
013526	Contractor's Safety Plan	X														
015000	Site Plan		X													
015000	Reports	X														
015412	Rigging	X	X													
015423	NYC DOB Scaffold & Sidewalk Shed Permits	X	X													
015423	Site Logistics/Site Safety Plan	X														
015423	Scaffold & Shed Installation Drawings	X	X													









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028013 ALLOWANCE FOR INCIDENTAL ASBESTOS ABATEMENT (25<sup>TH</sup> PRECINCT)  
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028213 ASBESTOS ABATEMENT (25<sup>TH</sup> PRECINCT)

**DIVISION 3- CONCRETE**

031000 CONCRETE FORMWORK  
032100 CONCRETE REINFORCING  
033000 CAST-IN-PLACE CONCRETE

**DIVISION 4- MASONRY**

042000 UNIT MASONRY  
042200 CONCRETE UNIT MASONRY

**DIVISION 5- METALS**

050920 METAL FASTENING  
051200 STRUCTURAL STEEL  
054000 COLD-FORMED METAL FRAMING  
054503 ANCHOR BOLTS, EXPANTION ANCHORS AND CONCRETE INSERTS

**DIVISION 8- OPENINGS**

081102 STEEL DOORS AND FRAMES  
087100 FINISH HARDWARE

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092116 GYPSUM BOARD SYSTEMS  
099101 CONSTRUCTION PAINTING

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230711 DUCT AND PIPING INSULATION  
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233300 AIR DUCT ACCESSORIES  
233900 FANS AND ACCESSORIES



235300	FUEL HANDLING SYSTEMS
238239	UNIT HEATERS
238240	FLUE EXHAUST CONDENSATE ACID NEUTRALIZER

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260519	LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
260526	GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
260529	HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS
260533	RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS
260544	SLEEVE SEALS FOR ELECTRICAL RACEWAYS
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262726	WIRING DEVICES
262813	FUSES
262816	ENCLOSED SWITCHES AND CIRCUIT BREAKERS
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263600	TRANSFER SWITCHES

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**CONTRACT # 1**  
**ELECTRICAL WORK**

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## SECTION 015412 - RIGGING REQUIREMENTS

### PART 1 – GENERAL

#### 1.1 RELATED DOCUMENTS

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

#### 1.2 SCOPE OF WORK

- A. The rigging contractor shall be fully responsible for all planning, engineering, transportation, lifting and positioning associated with the installation of the new generator, fuel tanks and other associated items as noted on plans.
- B. This general guideline outlines the rigger's responsibilities and the intent and scope of work to be performed by the rigger and identifies demolition and structural items associated with the rigging that are being performed by the contractor.
- C. Nothing in these requirements alleviates the rigger's role for being completely responsible for all rigging work involved with the generators. Many components of these requirements are performance-related and the rigging contractor shall be responsible for developing the lifting and installation techniques best suited to their methods and equipment.
- D. The rigger shall be fully responsible to schedule for and acquire all Commissioner agency approvals needed to perform the work. All work shall be undertaken with the highest safety considerations and with fully competent and experienced personnel.
- E. The rigging contractor shall have a valid Master Rigger license for Commissioner and follow all the rules and regulations required, pay all fees, do all filing relating to the rigging and all other work required by him in this project.

#### 1.3 INSTALLATION APPROACH

In general, a plan of the rigging and installation processes has been developed which serves as the guideline for the rigger to use in his formulation of the work, pricing and eventual execution. Other than certain structural and demolition items (performed by the contractor), which cannot be modified, the rigger has complete flexibility to select rigging methods best suited for the work as approved by Commissioner



- A. The new generator for the 5<sup>th</sup> Precinct shall be hoisted from Front Street level and lowered to ground floor via airshaft breezeway. As such, the contractor (for whom the rigging subcontractor shall be working) shall perform the following as described elsewhere.
    - 1. Fully investigate all components of the installation.
    - 2. Clear and make ready the area for the work of the rigging contractor.
    - 3. Obtain street closing permit.
  - B. The rigger shall fully coordinate all work with the contractor to ensure all items to be performed by the rigger can be accomplished as per the intent of the drawings and specifications.
  - C. The rigger shall receive, disassemble (if required), and prepare all equipment for the storage, transportation, hoisting, lowering and positioning and related activities needed to install the generator and other equipment in the final locations.
  - D. It is envisioned that the rigging activities will involve a combination of a vertical street drop and an angular insertion through the existing opening. Any damage to the existing structure shall be repaired by the rigger.
  - E. Upon completion of all work, the rigger shall disassemble and remove all rigging equipment.
- 1.4 RIGGER'S SCOPE OF WORK
- A. Become familiar with specifications of the new generator and other equipment and all building conditions that affect the work.
  - B. Orchestrate and develop a coordinated plan with the contractor such that the work provides adequate protection to safely and efficiently lift, insert and maneuver the generator.
  - C. Develop a complete rigging plan that satisfies the intent of these specifications and drawings and accomplishes the work in a safe and professional manner.
  - D. Acquire all Commissioner permits and agency approvals for all rigging activities requiring permits.
  - E. Receive, store, prepare and rig the equipment for all transporting and lifting operations.
  - F. Provide all labor, equipment, material and structural engineering necessary to rig, lift and install the equipment as per drawings and specifications.
  - G. Transport and deliver the equipment to the site.
  - H. Safely and as per regulations lift and insert the cooling tower into the existing opening.
  - I. Provide all labor, material and equipment to properly and safely transport the new equipment from the opening to its final position in the generator room or roof. The method of transporting across the generator room floor shall be approved by Commissioner. All material, skids, floor protection and miscellaneous steel shall be included in the rigger's responsibilities. That skids and/or rigging beams welded to the legs of the generator shall be used as a means of distributing floor loads.



1. The contractor shall provide floor protection and the rigger shall be responsible to maintain the protection during the work period.
  2. Transporting the generator across the cellar floor shall be performed preferably by multiple wood rollers. Skates may be used as long as provisions are made for an adequate number, properly spaced, using dunnage. (The method of transportation across the cellar floor shall be submitted and approved by the Commissioner.)
  3. All lifting and jacking needed to maneuver and/or reassemble generator components shall be performed from the cellar floor slab, not from the structure or slab above. The rigger shall provide all floor plates and dunnage needed to distribute concentrated loads. Submit intended approach to Commissioner for approval.
- J. Upon completion of installation, remove the rigging equipment and material.
- K. All work shall be properly scheduled and coordinated with Commissioner and the engineer.
- L. The contractor is responsible for existing equipment demolition or he may delegate this responsibility to the rigger.
1. The demolished generators and fuel tanks and related equipment may be removed in "suitcase" sized sections.
  2. May be removed through the existing opening. The rigger will be responsible for all permits for use of this route out of the cellar generator room.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION 015412



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**SECTION 02 41 00  
SELECTIVE SITE DEMOLITION**

**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 DESCRIPTION**

- A. Scope:
1. Contractor shall furnish all labor, materials, equipment and incidentals required for demolition, removals and disposal Work shown, specified and required to complete the project. Included are all modifications of existing facilities as shown and required to complete the Work.
  2. Included, but not limited to, are demolition and removals of existing materials, equipment, or work necessary to install the new Work as shown and specified and to connect same with existing work in an approved manner. The Work includes structural concrete, foundations, walls, doors, windows, structural steel, metals, roofs, masonry, attachments, appurtenances, manholes, piping, electrical and mechanical equipment, insulation, paving, curbs, utilities and similar existing facilities.
  3. Demolitions, removals and modifications which may be specified under other Sections shall conform to requirements of this Section.
  4. The Contractor shall adhere to the requirements of Section 608 of the Federal Clean Air Act for handling (i.e. capture, removal, recycling disposal, etc.) hydrochlorofluorocarbon (HCFC) and chlorofluorocarbon (CFC) substances used as refrigerants or otherwise in existing equipment. The Contractor is required to utilize only USEPA certified "technicians" to remove, service, maintain, dispose of etc. equipment containing such substances.
  5. Demolition of below grade foundations and site improvements to depth to avoid conflict with new construction or site work.
  6. Protection of site work and adjacent structures.
  7. Disconnection, capping and removal of utilities. Dismantled items to be retained by the Commissioner and to be reinstalled.
  8. No explosives are permitted.

**1.3 SUBMITTALS**

- A. In accordance with the procedures and requirements set forth in the General Conditions and Division I, the Contractor shall submit the following to the Commissioner for approval
1. Schedule: Submit for approval proposed methods, equipment, and operations sequence. Include coordination for shut-off, capping, temporary services, continuation of utility services, and other applicable items.
  2. Submit selective demolition schedule.



3. Informational Submittals: Submit copies of any notifications, authorizations and permits required to perform the Work. Submit a shipping receipt or bill of lading for all containers of asbestos-containing material (ACM) shipped. Submit a shipping receipt or bill of lading for all universal waste shipped. Submit copies of site-specific storm water pollution prevention plan (SWPPP).

#### **1.4 JOB CONDITIONS**

##### **A. Protection:**

1. Contractor shall execute the demolition and removal Work to prevent damage or injury to structures, existing building services, occupants thereof and adjacent features which might result from falling debris or other causes, and so as not to interfere with the use, and free and safe passage to and from adjacent structures.
2. Contractor shall provide interior and exterior shoring, bracing and support to prevent movement, settlement, or collapse of existing structures or facilities. The Commissioner assumes no responsibility for the actual condition of the structures or facilities adjacent to the Work or the structures or facilities designated for removal or modifications.
3. Contractor shall provide interior and exterior shoring, bracing and support to prevent movement, settlement, or collapse of existing structures or facilities. The Commissioner assumes no responsibility for the actual condition of the structures or facilities adjacent to the Work or the structures or facilities designated for removal or modifications.
4. Closing or obstructing of roadways, sidewalks, and passageways adjacent to the Work by the placement or storage of materials will not be permitted, and all operations shall be conducted with a minimum interference to vehicular or pedestrian traffic.
5. Contractor shall erect and maintain barriers, lights, sidewalk sheds, and other required protective devices.
6. Contractor shall repair damages caused by his operation to facilities to remain, or to any property belonging to the City of New York, utilities, or occupants of the facilities.
7. Contractor shall design, erect, install and maintain temporary partitions and enclosures required to eliminate dust, noise and debris from adjacent buildings.
8. The Work shall comply with the applicable provisions and recommendation of ANSI A10.2, Safety Code for Building Construction, all governing codes and as hereinafter specified.
9. Contractor shall exercise precautions for fire protection. Burning of debris shall not be permitted.

##### **B. Scheduling:**

1. Contractor shall carry out all operations so as to avoid interference with operations.
2. The Contractor shall proceed with the removal of the equipment, piping and appurtenances in a sequence designed to maintain facility operations.



3. The Contractor shall be solely responsible for making all necessary arrangements and for performing all necessary work involving the discontinuance or interruption of all utilities or services.
  4. Any equipment piping and appurtenances removed without proper authorization, shall immediately be replaced to the satisfaction of the Commissioner at no cost to the City of New York.
- C. Notification
1. At least 48 hours prior to commencement of a demolition or removal, Contractor shall notify the Commissioner in writing of his proposed schedule therefore. Commissioner will inspect the existing equipment and review with the Contractor those items which are to remain the property of the City of New York. No removals shall be started without the permission of the Commissioner.
- D. Explosives:
1. Do not bring explosives on site. No explosives will be permitted for this Project.

## **PART 2 - PRODUCTS (Not Applicable)**

## **PART 3 - EXECUTION**

### **3.1 GENERAL**

- A. Disposition of Materials and Equipment.
1. All materials and equipment removed from existing work, shall become the property of the Contractor, except for those items which the Commissioner has identified and marked, to remain the property of the City of New York. All materials and equipment so marked by the Commissioner shall be carefully removed by the Contractor, so as not to be damaged, and shall be cleaned of all solids and stored on or adjacent to the site in a protected place specified by the Commissioner.
  2. Contractor shall dispose of all demolition materials, equipment, debris, and all other items not to remain as property of City of New York, off the site and in conformance with all existing applicable laws and regulations.
- B. There is no guarantee by the Commissioner that the number of fixtures, amount of equipment or any other material of value existing in the buildings and structures to be removed and/or demolished at the bidding time will be present in the structures when they are demolished. Contractor shall have no claim against the City of New York because of the absence of such fixtures and materials.
- C. Surfaces of walls, floors, ceilings, or other areas which are exposed by any of the removals specified herein, and which will remain as architecturally finished surfaces and which have holes, scars, chipped or other damaged surfaces revealed by the removal shall be repaired by the Contractor with the same or matching materials as the existing surface or as may be otherwise approved by the Commissioner.
- D. Pollution Controls: Provide suitable methods to completely prevent solid waste leachate from waste handling operations from entering work areas and entering the ground.



Use water sprinkling, temporary enclosures, and other suitable methods to limit the amount of dust and dirt rising and scattering in the air to the lowest practical level, and to completely prevent solid waste leachate from waste handling operations from entering Work and areas and entering the ground. Comply with governing regulations pertaining to environmental protection.

1. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.
  2. Clean adjacent structures, facilities, and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to conditions existing prior to the start of the Work.
- E. Building Demolition and Removals:
1. Unless otherwise approved by Commissioner, proceed with demolition and removals from the top of the structure.
  2. Locate, identify, disconnect and seal or cap off utilities in buildings/structures to be demolished.
  3. Demolish concrete and masonry in small sections.
  4. Break up and remove foundations and slabs where shown.
  5. Locate demolition and removal equipment throughout the structure in such a way and remove materials as frequently as necessary so as to not impose excessive loads to supporting walls, floors or framing.
- F. The Contractor and the Commissioner shall jointly survey the condition of the adjoining structures prior to the execution of the work. Photographs and records shall be made of any prior settlement or cracking of structures, pavements, and the like, that may become the subject of possible damage claims. Photographs shall be taken in accordance with the requirements of the General Conditions.
- G. Do not close or obstruct streets, walks, drives or other occupied or used spaces or facilities without the written permission of the Commissioner and the City of NY. Do not interrupt utilities servicing occupied or used facilities without the written permission of the Commissioner and City of NY. If necessary, provide temporary utilities.
- H. Cease operations if public safety or remaining structures are endangered. Perform corrective measures immediately. Notify City of New York and the Commissioner. Do not resume operations until directed by the Commissioner.
- I. Do not damage building/mechanical/electrical elements and improvements indicated to remain.
- J. Do not use demolition debris as backfill.

### **3.2 STRUCTURAL REMOVALS**

- A. Contractor shall remove concrete and structures to the lines and grades shown unless otherwise directed by the Commissioner. Where no limits are shown, the limits shall be 4 inches outside the item to be installed. The removal of masonry beyond these limits shall be at the Contractor's expense and these excess removals shall be reconstructed to the satisfaction of the Commissioner with no additional compensation to the Contractor.





- B. Locate, identify, disconnect and seal or cap off existing utilities in buildings, tanks, chambers and structures to be demolished.
- C. Determine the thickness of existing concrete to be removed and the extent to which they are reinforced. No additional compensation will be made because of variations from the thickness shown or for variations in the amount of reinforcement.
- D. All concrete, brick, tile, concrete block, roofing materials, reinforcement, structural or miscellaneous metals, plaster, wire mesh and other items contained in or upon the structure shall be removed and taken from the site, unless otherwise approved by the Engineer. Demolished items shall not be used in backfill.
- E. After removal of parts or all of masonry walls, slabs and like work which tie into new Work or existing work, the point of junction shall be neatly repaired so as to leave only finished edges and finished surfaces exposed.

### **3.3 PAVEMENT, CURB AND SIDEWALK REMOVALS**

- A. If required, remove existing pavement and gravel roadway including base and surface courses, stabilized sub-bases, curbs, and gutters as required to construct new facilities or as shown. Before removing, saw a straight joint at least 1-1/2-inches deep between sidewalk and pavement designated for removal and that left in place. Provide neat saw cuts at limits of pavement removal as indicated. Curbs and gutters shall be removed to the nearest construction joint beyond the end of demolition symbol shown on the Contract Drawings.
- B. If required, determine the thickness of existing pavement, base, sub-base, curb, gutter, driveway pavement, and sidewalk to be removed and the extent to which they are reinforced. No additional compensation will be made because of variations from the thickness shown or for variations in the amount of reinforcement.
- C. Provide for satisfactory transition between replaced pavement and sidewalks and the portions remaining in place.

### **3.4 MECHANICAL REMOVALS**

- A. Mechanical removals shall consist of dismantling and removing of existing piping, equipment, and other appurtenances as specified, shown, or required for the completion of the Work. It shall include cutting, capping, draining, and plugging as required, except that the cutting of existing piping for the purpose of making connections thereto will be included under Division 23.
- B. Existing piping shall be removed where shown. All removed piping shall be removed to the nearest solid support, capped and left in place. Where piping that is to be removed passes through existing walls, it shall be cut off and properly capped on each side of the wall.
- C. When underground piping is to be altered or removed, the remaining piping shall be properly capped. Abandoned underground piping may be left in place unless it interferes with new Work or is shown or specified to be removed.
- D. Any demolition or changes to potable water piping, gas piping and other plumbing and heating system work shall be made in conformance with all applicable codes. Portions of the potable water system that may have been altered or opened shall be pressure tested and disinfected in accordance with Division 23 and local codes. Other plumbing piping and heating piping shall be pressure tested only.



- E. Refer also to the Drawings for walls, doors, partitions and equipment relocations necessary to complete demolition and removals Work and new facilities.
- F. Provide all caps, plugs, blind flanges, shut-off valves and other work and materials required to remove from service existing piping and necessary to keep existing piping in service where shown or required.
- G. When utility lines are encountered that are not indicated on the Drawings, notify Commissioner and City of New York prior to further work in that area. Excavate and remove utility lines serving buildings to be demolished to a distance of 5 feet beyond the outside perimeter of the demolition.
- H. Provide a permanent leak-proof closer for water and gas lines. Plug sewer lines with flowable fill to a minimum plug length of 1 foot to prevent groundwater infiltration.

### **3.5 ELECTRICAL REMOVALS**

- A. Electrical removals shall consist of the removal of existing transformers inside the structures, distribution switchboards, control panels, motors, conduits and wires, poles and overhead wiring, panelboards, lighting fixtures, and miscellaneous electrical equipment all as required to perform the Work.
- B. All existing electrical equipment and fixtures to be removed shall be removed by the Contractor with such care as may be required to prevent unnecessary damage, to keep existing systems in operation and to keep the integrity of the grounding systems.
- C. Where shown or otherwise required, wiring and exposed conduits shall be removed. Concealed conduits which are not to be reused shall be plugged and made watertight. All openings in buildings for entrance of abandoned conduit or direct-burial cable shall be patched and made watertight.
- D. Panelboards where shown shall be removed and disposed of off the site or as directed by the Commissioner. All cutting and patching necessary for the removal and replacement of panelboards shall be performed.
- E. Lighting fixtures shall be removed.
- F. Switches, receptacles, starters and other miscellaneous electrical equipment, shall be removed and disposed of off the site or as directed by the Commissioner. Care shall be taken in removing all equipment so as to minimize damage to architectural and structural members. Any damage incurred shall be repaired.

### **3.6 MISCELLANEOUS REMOVALS**

- A. Contractor shall remove miscellaneous concrete walls, slabs, pipe supports, equipment pads, and curbs where shown on the Drawings or where necessary for the modification of the existing structures. Anchor bolts shall be cut back one inch below the surface and patched.

### **3.7 MODIFICATIONS AND CLOSURES**

- A. Modifications shall conform with all applicable Specifications, the Drawings, and the directions and approvals of the Commissioner.
- B. Where alterations require cutting or drilling into existing floors, walls, and roofs the damages shall be repaired in an approved manner. Contractor shall repair such openings with the same or matching materials as the existing floor, wall, or roof or as otherwise



- approved by the Commissioner. All repairs shall be smoothly finished unless otherwise approved by the Commissioner.
- C. Openings in existing concrete slabs, ceilings, roofs, masonry walls, floors and partitions which are not to be used in the new Work shall be closed and sealed as shown.
  - D. All existing structures are to remain in service, demolish the portions to be removed, repair damages, and leave the structure in proper condition for the intended use. Remove concrete and masonry to the lines designated by drilling, chipping, and other suitable methods. Leave the resulting surfaces true and even, with sharp straight edges that will result in neat joints with new construction or be satisfactory for the purpose intended. Where existing reinforcing rods are to extend into new construction, remove the concrete so that the reinforcing is clean and undamaged. Cut off other reinforcing flush with the surface.
  - E. New Work shall be keyed into the existing in an acceptable manner. In general, the same or matching materials as the existing adjacent surface shall be used. The finished closure shall be a smooth, tight, sealed, permanent closure with all exposed surfaces smooth finished and acceptable to the Commissioner.
  - F. Where existing reinforcement is to be exposed and incorporated into new concrete work, this reinforcement shall be sand blasted clean of all rust and concrete residue and painted with a zinc-rich primer paint.

### **3.8 CLEANUP**

- A. Contractor shall remove from the site all debris resulting from the demolition operations as it accumulates. Upon completion of the Work, all materials, equipment, waste, and debris of every sort shall be removed and premises shall be left, clean, neat and orderly.

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**SECTION 02 41 19  
SELECTIVE STRUCTURAL DEMOLITION**

**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 WORK INCLUDED**

- A. This section covers the demolition, removal and disposal of portions of the existing structures and equipment as shown on the Contract Documents. The demolition work shall not proceed until an approved phasing plan has been developed.
- B. Contractor will be responsible for demolition removals and disposals within the existing building and of adjacent affected areas, all as shown or required by this contract.

**1.3 PROTECTION**

- A. Demolition and removal Work shall be performed by competent workmen experienced in the various types of demolition and removal work required and shall be carried through to completion with due regard to the safety of City of New York employees, workmen on the Site and the public. The Work shall be performed with as little nuisance as possible.
- B. The Work shall comply with the applicable provisions and recommendation of ANSI A10.2, Safety Code for Building Construction, all governing codes and as hereinafter specified.

**PART 2 - PRODUCTS - NOT USED**

**PART 3 - EXECUTION**

**3.1 GENERAL**

- A. The Contractor shall provide, erect and maintain lights, barriers, weather protection, warning signs and other items as required for proper protection of the public and workmen engaged in demolition operations, and adjacent construction.
- B. The Contractor shall provide adequate fire protection in accordance with FDNY requirements.
- C. The Contractor shall be responsible for any damage to the existing structure, contents or systems by reason of the insufficiency of protection provided.



### **3.2 WORKMANSHIP**

- A. The demolition and removal Work shall be performed as described in the Contract Documents. The Work required shall be done with care. The Contractor shall be responsible for any damage which may be caused by demolition and removal Work to any part or parts of new and existing structures or items designated for reuse or to remain.
- B. Where equipment is shown or specified to be removed and relocated, the Contractor shall not proceed with removal of this equipment without specific prior approval of the Engineer. Upon approval, and prior to commencing removal operations, the equipment shall be operated in the presence of representatives of the Contractor, Commissioner. Such items shall be removed with care, under the supervision of the trade responsible for reinstallation and cleaned, protected and stored until required. Material or items damaged during removal shall be replaced with similar new material or items. Any equipment that is removed without proper authorization and is required for operation shall be replaced at no cost to the City of New York.
- C. Materials or items to be demolished and not designated to become the property of the City of New York or to be reinstalled shall become the property of the Contractor and shall be removed from the property and legally disposed of.
- D. The Contractor shall execute the Work in a careful and orderly manner, with the least possible disturbance to the public and to nearby building or structures.
- E. In general, masonry and concrete shall be demolished in small sections, and where necessary to prevent collapse of any construction, the Contractor shall install temporary shores, struts, and bracing.
- F. The Contractor shall remove temporary work, such as enclosures, signs, guards, and the like when such temporary work is no longer required or when directed at the completion of the Work.

### **3.3 CONDITION OF BUILDINGS, STRUCTURES AND EQUIPMENT**

- A. The City of New York does not assume responsibility for the actual condition of items to be demolished and removed.
- B. Conditions existing at the time of inspection for bidding purposes will be maintained by the City of New York so far as practicable.
- C. The information regarding the existing structures and equipment shown on the Contract Drawings is based on original contract drawings, field inspection and a general survey only. Neither the Engineer nor the City of New York will be responsible for interpretations or conclusions drawn therefrom by the Contractor.

### **3.4 MAINTENANCE**

- A. The Contractor shall provide on-site dump containers for collection of the demolished waste materials, debris and rubbish, and shall wet down dry materials to lay down and prevent blowing dust.



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- B. At reasonable intervals during the progress of the demolition and removal Work or as directed by the Commissioner, the Contractor shall clean the sites and properties, and dispose of waste materials, debris and rubbish in accordance with all regulatory requirements.

++ END OF SECTION ++



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**SECTION 028013 – GENERAL CONTRACTOR WORK**  
**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 (cumingtonite-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 Asbestos abatement contractor is responsible to retain a NYSDOL Licensed 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 demonstrate compliance with the special experience requirements set forth in subparagraphs (1) through (5) below. The asbestos abatement contractor must, submit documentation demonstrating compliance with all listed requirements. 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, must demonstrate for the three year period prior to the work, that it has been licensed by the New York State Department of Labor, as an "Asbestos abatement contractor".
  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 provide evidence of having successfully performed and completed in a timely fashion at least five (5) asbestos abatement projects of similar size and complexity. The aggregate cost of these projects must be at least \$250,000.00 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 of the owner or the owner's representative who is familiar with the asbestos abatement contractor's work, brief description of the 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, 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.

- B. Insurance Requirements: The asbestos abatement contractor must provide asbestos liability insurance in the following amount: 1 million dollars per occurrence, 2 million dollars aggregate (combined single limit). The City of New York shall be named as an additional insured on such insurance policy.
- C. 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.

### **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;

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- 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**

- A. 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.
- B. 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.

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- C. **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 X 0.65 = 65 sq.ft.      65 x unit price = Payment

100 X 2.62 = 262 sq.ft.      262 x unit price = Payment

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- 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)  
 $1000 \text{ S.F.} \times (1.5) \times \text{the Unit Price} = \text{Payment}$

- 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.



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- 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.

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- 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. Material Safety Data Sheets (MSDS) 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 MSDS 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

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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,

GENERAL CONTRACTOR WORK ALLOWANCE FOR INCIDENTAL ASBESTOS ABATEMENT

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.

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- 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**

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**SECTION 028013 – GENERAL CONTRACTOR WORK**  
**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 (cumingtonite-grunerite), crocidolite (riebeckite), tremolite, anthrophyllite and actinolite.

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- 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 Asbestos abatement contractor is responsible to retain a NYSDOL Licensed 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 demonstrate compliance with the special experience requirements set forth in subparagraphs (1) through (5) below. The asbestos abatement contractor must, submit documentation demonstrating compliance with all listed requirements. 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, must demonstrate for the three year period prior to the work, that it has been licensed by the New York State Department of Labor, as an "Asbestos abatement contractor".
  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 provide evidence of having successfully performed and completed in a timely fashion at least five (5) asbestos abatement projects of similar size and complexity. The aggregate cost of these projects must be at least \$250,000.00 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 of the owner or the owner's representative who is familiar with the asbestos abatement contractor's work, brief description of the 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, 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

GENERAL CONTRACTOR WORK ALLOWANCE FOR INCIDENTAL ASBESTOS ABATEMENT

Department of Design and Construction to demonstrate that it has the requisite capacity to perform the required services of this contract.

- B. Insurance Requirements: The asbestos abatement contractor must provide asbestos liability insurance in the following amount: 1 million dollars per occurrence, 2 million dollars aggregate (combined single limit). The City of New York shall be named as an additional insured on such insurance policy.
- C. 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.

**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**

- A. 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.
- B. 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.

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- C. **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 X 0.65 = 65 sq.ft.      65 x unit price = Payment

100 X 2.62 = 262 sq.ft.      262 x unit price = 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)  
 $1000 \text{ S.F.} \times (1.5) \times \text{the Unit Price} = \text{Payment}$

- 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.



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- 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.

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- 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. Material Safety Data Sheets (MSDS) 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 MSDS 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,

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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.

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- 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**

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## **SECTION 028213**

### **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 New York Police Department (NYPD) - 5<sup>th</sup> Police Precinct, 19 Elizabeth Street, New York, New York 10013.
- 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 Design Drawings titled “NYPD 5th Police Precinct – Replacement of Generator,” dated 02/18/16 prepared by Goldman Copeland Consulting Engineers.
  - 2. “Final Report of Asbestos Survey Services, NYPD 5<sup>th</sup> Police Precinct, Replacement of Generator” performed by LiRo Engineers, Inc. dated 03/09/16.
  - 3. “Limited Asbestos Survey Services, Replacement of Generator, NYPD 5<sup>th</sup> Police Precinct, Cellar Ceilings,” performed by LiRo Engineers, Inc. dated 08/05/16.
- 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.

## ASBESTOS ABATEMENT

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 found within these areas such as assumed asbestos containing fire door insulation, etc.
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 charges 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 H-002.00: Cellar Floor Plan**

- a. Remove and dispose of asbestos containing Assumed Asbestos Containing Fire Door Insulation within Work Area 1. ACM within Work Area 1 shall be removed utilizing NYCDEP Title 15, Chapter 1, § 1-106 Tent Containment Procedure.

Work Area	Removal Procedure	Approximate Square Feet (Sq. Ft.)	Approximate Linear Feet (Ln. Ft.)
1	NYCDEP Title 15, Chapter 1, § 1-106 Tent Containment Procedure	40 Sq. Ft. of (Assumed) ACM Fire Door (36"X80") Insulation (2 Doors)	-

## ASBESTOS ABATEMENT

- D. The facility is under the jurisdiction of the New York City Police Department (NYPD). 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:

## ASBESTOS ABATEMENT

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:
2. Shall be performed at no additional charge to the City.
3. Shall be performed at times not interfering with the other activities in the building.
4. Shall be performed only with written consent from the Commissioner and the Facility Manager.
5. 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.

## ASBESTOS ABATEMENT

- P. Stages of Asbestos Removal Work:
- a. 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 demonstrate compliance with the special experience requirements set forth in subparagraphs (1) through (5) below. The asbestos abatement contractor must submit documentation demonstrating compliance with all listed requirements. 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, as an "Asbestos Abatement Contractor".
  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 provide evidence of having successfully performed and completed in a timely fashion at least 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 of the owner or the owner's representative who is familiar with the asbestos abatement contractor's work; brief description of the 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, supervisory personnel and equipment necessary to carry out the

## **ASBESTOS ABATEMENT**

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.

- 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. 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

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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:

## 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



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(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) more than 25 linear feet or more than 10 square feet of 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.

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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 of 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 of 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.

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- 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. NYCDEP or DEP: The New York City Department of Environmental Protection.
- 38. 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.
- 39. DOB: The New York City Department of Buildings.
- 40. 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.
- 41. ELAP: Environmental Laboratory Approval Program administered by the New York State Department of Health.
- 42. 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.
- 43. 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.
- 44. 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.
- 45. EPA or USEPA: United States Environmental Protection Agency.

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- 46. 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.
- 47. 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.
- 48. FDNY: The Fire Department of the City of New York.
- 49. 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.
- 50. 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.
- 51. 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.
- 52. 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.
- 53. HEPA vacuum equipment: "HEPA vacuum equipment" shall mean vacuuming equipment with a HEPA filter.
- 54. Holding Area: Chamber in the equipment decontamination enclosure located between the washroom and an uncontaminated area.

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55. Homogeneous Work Area: Portion of the Work Area that contains one type of ACM and/or where one type of abatement is used.
56. 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 wellbeing, or significant discomfort and inefficiency among worker or among the citizens of the community.
57. 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 wellbeing; 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 wellbeing; and
  - c. To prescribe methods to eliminate, control, or reduce such stresses when necessary to alleviate their efforts.
58. 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.
59. 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.
60. 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.
61. 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.

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- 62. Movable Object: Unit of equipment or furniture in the Work Area that can be removed from the Work Area.
- 63. 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.
- 64. NESHAPS: National Emission Standards for Hazardous Air Pollutants.
- 65. NFPA: The National Fire Protection Association.
- 66. NIOSH: National Institute for Occupational Safety and Health.
- 67. DEP or NYCDEP: New York City Department of Environmental Protection
- 68. NYSDOL: New York State Department of Labor.
- 69. 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.
- 70. NYSDOH: The New York State Department of Health.
- 71. 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.
- 72. 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.
- 73. OSHA: Occupational Safety and Health Administration.
- 74. Outside air: "Outside air" shall mean the air outside the work place.
- 75. 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.
- 76. 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.
- 77. Personal Protective Equipment (PPE): Appropriate protective clothing, gloves, eye protection, footwear, and head gear.

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- 78. Phase Contrast Microscopy (PCM): The measurement protocol for the assessment of the fiber content of air. (NIOSH Method 7400).
- 79. Physician: Person licensed or otherwise authorized under Article 131 Section 65.22 of the New York State Education Law.
- 80. Plasticize: To cover floors and walls with fire retardant plastic sheeting as herein specified or by using spray plastics as acceptable to the Department.
- 81. 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)
- 82. Project Designer: A person who holds a valid Project Designer Certificate issued by the New York State Department of Labor.
- 83. Project Monitor: A person who holds a valid Project Monitor Certificate issued by the New York State Department of Labor.
- 84. 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.
- 85. 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.
- 86. 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.
- 87. 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.
- 88. 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.
- 89. 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.

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90. Replacement material: Any material used to replace ACM that contains less than .01 percent asbestos.
91. Shift: A worker's, or simultaneous group of workers', complete daily term of work.
92. 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.
93. 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.
94. Staging Area: Work Area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the Work Area.
95. Strip: To remove asbestos materials from any part of the facility.
96. 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.
97. Surface barriers: The plasticizing of walls, floors, and fixed objects within the work area to prevent contamination from subsequent work.
98. Surfactant: Chemical wetting agent added to water to improve penetration.
99. 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.
100. Visible Emissions: Emissions containing particulate material that are visually detectable without the aid of instruments.
101. 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.
102. 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.
103. 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.



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104. Wet methods: "Wet methods" shall mean the use of amended water or removal encapsulants to minimize the generation of fibers during ACM disturbance.
105. Work Area: Designated rooms, spaces, or areas of the building or structure where asbestos abatement activities take(s) place.
106. 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.
107. Work Place: The work area and the decontamination enclosure system(s).
108. 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.
109. 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 PAGING 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 digital telephone paging device ("Beeper") and/or cellular telephones which can be activated by a telephone number in the 212 or 646 or 718 or 917 or 929 area code. He shall supply the Department of Design and Construction with the activation number for the device and he is liable to respond back to the calls from DDC within the next one (1) hour period after he 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.

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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. 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

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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. The 8-hour time weighted average airborne concentration of fibers to which any passerby may be exposed shall not exceed 0.01 fibers per cubic centimeter of air when fibers have a physical dimension longer than 5 micrometers as determined by the method prescribed in these Specifications.
2. 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.
3. 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.
4. 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.

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5. 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.
6. 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 cutoff switch shall be able to turn off the equipment on all floors.
7. 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.
8. 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.
9. 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.
10. 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.

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### 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;

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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. The general contractor shall submit, as required, an asbestos abatement permit due to one or more of the activities listed in 1.07 (B) (1-8) and (B) (13) of this specification. The asbestos abatement contractor is responsible for submitting, with an asbestos project notification, a work place safety plan (WPSP) and any other applicable construction documents. These documents must be prepared 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

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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 asbestos abatement 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.

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- (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 general contractor 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, and shall be advised on safe decontamination.
- 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.



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- 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 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, 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,

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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 NYCDEP identification numbers of Waste Hauler.
- l. Description of the final clean-up procedures to be used.
- m. Name and qualifications of laboratory for 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. Material Safety Data Sheets (MSDS) 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 MSDS are reviewed.
- p. Worker Training and Medical Surveillance: Asbestos abatement contractor shall submit a list of the persons who will be employed by him in the removal work. Present evidence that workers have received

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proper training required by the regulations and the medical examinations required by OSHA 29 CFR 1926.1101.

- 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 on title page the project name, name, address and phone number of Environmental Control Representative; name, address and phone number of asbestos abatement contractor; name, address and phone number of asbestos abatement contractor and City's air testing entity; emergency numbers including, but not limited to local Fire/Rescue Department. Log book shall contain a list of personnel approved by the laboratory 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 a copy of the logbook containing a day-to-day record of personnel log entries countersigned by the Construction Project Manager every day.
- r. 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. 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.

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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 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 and NYSDOL for the project, with any amendments or variances;
  - d. Copies of all asbestos abatement permits, including associated approved plans and work place safety plan;

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- 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).
9. The asbestos abatement contractor shall submit one of the following certifications to the DOB, 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

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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 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.
- E. The a asbestos abatement contractor will have at all times in his possession and in view at the job site the OSHA regulations 29 CFR 1910.1001, and 1926.1101 Asbestos, and Environmental Protection Agency 40 CFR, Part 61, subpart B: National Emission Standard for asbestos, asbestos stripping, work practices and disposal of asbestos waste. He shall also have 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 a 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:

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1. American National Standards Institute (ANSI)  
(Successor to USASI and ASA)  
25 West 43<sup>rd</sup> Street (between 5<sup>th</sup> and 6<sup>th</sup> Avenue) 4<sup>th</sup> 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, 8<sup>th</sup> 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

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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, 21<sup>st</sup> 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.



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- 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.
- 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.
- 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 setup 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.

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4. Insure 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.

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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.

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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 the 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.

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- 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.

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- 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 system shall NOT be used to remove refuse.
- 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.

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- 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 Factors<sup>5</sup>

Type of Respirator	Half mask	Full face piece	Helmet/hood
1. Air-Purifying Respirator <sup>1,2</sup>	<sup>3</sup> 10	50	.....
2. Powered Air-Purifying Respirator (PAPR)	50	1,000	<sup>4</sup> 25/1,000
3. Supplied-Air Respirator (SAR) or Airline Respirator			
• Demand mode	10	50	.....
• Continuous flow mode	50	1,000	<sup>4</sup> 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

Notes:

<sup>1</sup>Employers 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.

<sup>2</sup>The 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.

<sup>3</sup>This APF category includes filtering face pieces, and half masks with elastomeric face pieces.

<sup>4</sup>The 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 face piece respirators, and receive an APF of 25.

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<sup>5</sup>These 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.



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- 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

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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 two sets of fresh filters, for use by personnel who are authorized to inspect the worksite. 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.

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- 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-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. Respirators, disposable coveralls, head covers and foot covers shall be provided by the asbestos abatement contractor for the Facilities Representative, Construction Project Manager and any other authorized representative who may inspect the Work Area. Provide two respirators and six respirator filter changes per day.

### **1.17 AIR MONITORING - ASBESTOS ABATEMENT CONTRACTOR**

- A. Asbestos abatement contractor shall employ a qualified industrial hygiene laboratory to analyze air samples in accordance with OSHA Regulations, 1926.1101 (Asbestos Standards for Construction) and New York City regulations.
- B. 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).
- C. Industrial hygiene laboratory shall also be a current proficient participant in the NIST/NVLAP Quality Assurance Program for the identification of bulk samples. Laboratory identification number shall be submitted to and approved by the City.
- D. Air monitoring responsibilities for the asbestos abatement contractor's employees, shall be performed by a representative of the industrial hygiene laboratory retained by the asbestos abatement contractor.
- E. Asbestos abatement contractor shall submit to the City all credentials of the designated (as defined in OSHA 1926.1101) and industrial hygiene laboratory representative for approval.

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- F. Air monitoring and inspection shall be conducted by the Asbestos abatement contractor's competent person (as defined in OSHA 1926.1101).
- G. Continuous (daily or per shift) monitoring and inspection will include Work Area samples, personnel samples from the breathing zone of a worker to accurately determine the employees' 8-hour TWA (unless Type C respirators are used) and decontamination unit clean room samples.
- H. Work Area samples and employee personnel samples shall be taken using pumps whose flow rates can be determined to an accuracy of +5-percent, at a minimum of two liters per minute. This must be demonstrated at the job site.
- I. Sampling and analysis methods shall be per NIOSH 7400A.
- J. Test Reports:
  - 1. Promptly process and distribute one copy of the test results, to the Commissioner.
  - 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 by facsimile notify the Commissioner within 24 hours of the results of each test, followed by written notification within three days.
- K. 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.
- L. All costs for required air monitoring by the asbestos abatement contractor's competent person shall be borne by the asbestos abatement contractor.
- M. 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.
- N. All samples shall be accompanied by a Chain of Custody Record that shall be submitted to the Construction Project Manager upon completion of analysis.

### **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.

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- 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.

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- 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 <sup>a</sup>	5 <sup>a</sup>	5 <sup>a</sup>
3.	Exterior Foam and Vertical Surfaces	-	5 <sup>c</sup>	5 <sup>d</sup>
4.	Interior Foam	10	5 <sup>c</sup>	10 <sup>d</sup>
Small Asbestos Projects				
1.	Full Containment	6	3	6
2.	Glovebag inside Tent	3 <sup>b</sup>	3 <sup>b</sup>	3 <sup>b</sup>
3.	Tent	3 <sup>b</sup>	3 <sup>b</sup>	3 <sup>b</sup>
4.	Exterior Foam and Vertical Surfaces	-	3 <sup>c</sup>	3 <sup>d</sup>
5.	Interior Foam	6	3 <sup>c</sup>	6 <sup>d</sup>
Minor Projects				
1.	Glovebag inside Tent	-	-	1 <sup>d</sup>
2.	Tent	-	-	1 <sup>d</sup>
3.	Exterior Foam and Vertical Surfaces	-	-	1 <sup>d</sup>
4.	Interior Foam	-	-	1 <sup>d</sup>

**Notes:**

- a. if more than three (3) tents then two (2) samples required per enclosure.
- b. if more than three (3) tents then one (1) sample required per enclosure.
- c. samples shall be taken within the work area(s).
- d. area 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.

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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.

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- 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.



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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.

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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. Area air sampling during abatement shall be conducted as specified in the following documents except as restricted or modified herein:
1. Measuring Airborne Asbestos Following an Abatement Action, US EPA document 600/4-85-049 (Nov., 1985);
  2. Guidance for Controlling Asbestos-Containing Materials in Buildings; US EPA Publication 560/5-85- 024 (June, 1984);
  3. Methodology for the Measurement of Airborne Asbestos by Electron Microscopy US EPA Contract No. 68-02- 3266;
  4. Mandatory and non-mandatory Electron Microscopy Methods set forth in 40 CFR Part 763, Subpart E, Appendix A.
  5. NIOSH 7400 method using “A” counting rules
- N. In accordance with the above criteria, area samples (see NYCDEP Asbestos Control Program Regulations) shall conform to the following schedule:

Area Samples for Analysis by	Minimum Volume	Flow Rate
PCM, 25mm cassettes	560 liters	5 to 15 liters/minute
TEM, 25mm cassettes	560 liters	1 to 10 liters/minute
TEM, 37mm cassettes	1,250 liters	1 to 10 liters/minute

- O. 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.

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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.
- P. 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.
- Q. 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

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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.

### **R. 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, 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 information into the DEP ARTS database within 24 hours of work area completion to 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 Third Party Air Monitoring Firm within 48 hours of receipt.

## **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.

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### **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.

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- 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.

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- 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.

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- 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. Wire brushes maybe used for cleaning pipe joints within glove-bags upon written approval of the Construction Project Manager.
- 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



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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, NECA 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 NEC, 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.

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- 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 (.006") 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

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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 (NYCDOS) 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.

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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 (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 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 twelve inches.

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- (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.
- 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

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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 tool, 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, 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.
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.

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- 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 twelve 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.
- 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.
  - (2) 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

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placed at the holding area entrance to prevent unauthorized access into the Work Area.

### B. 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.

### C. 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 job 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.



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### **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.

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- 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-vacuuuming 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;

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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

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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.

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- 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.

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- 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 cutoff 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-asbestos contaminated waste.

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- 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.

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- (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 AFDs 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 Areas 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.



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- 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.

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- 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

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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.

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- (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 utilizing NYCDEP Title 15, Chapter 1 §1-106 Tent 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 polyethylene sheeting. Filters in HVAC systems shall be removed and treated as asbestos-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.

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- d. Provide and install decontamination enclosure systems in accordance with PART 3 - EXECUTION, Sections 3.01 and 3.02 of these Specifications. Decontamination facilities may be remote from the Work Areas.
- e. Construct rigid framework to support Work Area barriers. 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.
- f. Seal floor drains, sumps, shower tubs, and other collection devices with two layers of fire retardant 6-mil plastic and minimum 3/8" 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. Any opening greater than 32 square feet shall be framed with 2-inch by 4-inch studding placed 16 inches on center.
- g. Install and initiate operation of AFDs to provide a negative pressure and a minimum of four air changes per hour and negative pressure of -0.02" of water column 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 vacuums to produce a negative air pressure inside the enclosure is prohibited.
- h. Maintain emergency and fire exits from the Work Areas 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. 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.
- i. Temporary lighting within the Work Area and decontamination system shall be provided as required to achieve minimum illumination levels.
- j. Hand power tools used to drill, cut into, or otherwise disturb ACM shall be manufacture equipped with HEPA filtered local exhaust ventilation.
- k. 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.
- l. There shall be an airlock at the entrance to the tent, unless there is an attached worker or waste decontamination system.

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- m. Plasticize the area after pre-cleaning, using the following procedures. Do not apply polyethylene sheeting to the wall and ceiling surfaces that will be demolished to access ACM.
  - (1) Cover floor with one layer of fire retardant 6-mil polyethylene sheeting, turning layer a minimum of 12 inches up wall, and seal layer to wall.
  - (2) Cover walls with one layer of fire retardant 6-mil polyethylene sheeting, overlapping wall layer a minimum of 12 inches, and seal layer to floor layer.
  - (3) Cover ceilings with one layer of fire retardant 6-mil polyethylene sheeting, overlapping wall layer a minimum of 12 inches, and seal layer to wall layer.
  - (4) Repeat procedure for second layer. All joints in polyethylene sheeting shall be glued and taped in such a manner as to prohibit air passage. Joints on plastic layers shall be staggered to reduce the potential for water to penetrate.
  - (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 as described in this Specification.
  - (7) Repeat preparation of areas accessed by demolition activities as described above.
  - (8) 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.
  - (9) Protect non-ACM insulation within the Work Area(s) with two individual layers of fire retardant 6-mil polyethylene sheeting. Sheeting shall remain in-place until satisfactory clearance air monitoring results are achieved.
- n. Installation of glove-bags for removal of thermal system insulation, when required:
  - (1) General: Glove-bag operations shall be performed using commercially available glove-bags of at least fire retardant 6-

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mil, transparent plastic appropriately sized for the diameter of the material to be removed. The use of "moveable" glove-bag techniques is strictly forbidden. At no time, shall the glove-bag be sized to allow for the removal of more than three linear feet of insulation. Glovebag procedures may only be used in conjunction with full containment of the work area or the tent procedure.

- (2) Place the necessary tools and materials inside of the tool pouch of the glove-bag before the glove-bag procedure begins.
  - (3) Place duct-tape securely around the affected area to form a smooth area to which the glove-bag can be securely fastened.
  - (4) Attach glove-bag to the cable, wire or pipe. Seal top of glove-bag by double folding and stapling. Place duct-tape along the seam to form an airtight seal. Seal sides of glove-bag, where cable, wire or pipe passes through, with duct-tape to form an airtight seal.
  - (5) If the material adjacent to the work section is damaged, terminates, is jointed or contains an irregularity, wrap the section in two layers of 6-mil fire retardant polyethylene sheeting and seal airtight with duct-tape.
  - (6) Smoke test each glove-bag as indicated below. The Third-Party Air Monitor shall be present during all smoke testing.
  - (7) The glovebag shall be placed under negative pressure utilizing a HEPA vacuum, and a smoke tube shall then be aspirated to direct smoke at all seams and seals from outside the glovebag. Any leaks detected by the smoke test shall be duct taped airtight.
  - (8) All necessary tools and materials shall be brought into the work area before the glovebag procedure begins.
  - (9) Glovebag procedures shall be conducted by workers specifically trained in glovebag procedures and equipped with appropriate personal protective equipment.
  - (10) The insulation diameter worked shall not exceed one half the bag working length above the attached gloves.
- o. Glovebag procedures shall be conducted by workers specifically trained in glovebag procedures and equipped with appropriate personal protective equipment.
- p. Pre-Removal Inspections

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- (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 Thermal Insulation Using Glove-Bag Techniques:
- a. Mist material with amended water. Allow sufficient time for the amended water to penetrate the material to be removed.
  - b. Remove the insulation using hand tools such as knives or scissors.
  - c. Exercise caution when removing insulation.
  - d. Remove any residual asbestos-containing insulation from the substrate using wet cleaning methods and nylon-bristled hand brushes.
- (1) Any insulation ends created by this procedure shall be sealed with encapsulant prior to bag removal or thoroughly wetted before bag removal and sealed with wettable cloth end caps and spray glue or any combination of these materials immediately following bag removal.
  - (2) The tool pouch shall be separated from the bag prior to disposal by twisting it and the wall to which it is attached several times, and taping the twist to hold it in place, thus sealing the bag and the pouch which are severed at the midpoint of the twist. Alternatively, the tools can be pulled through with one or both glove inserts, thus turning the gloves inside out. The glove(s) is/are then twist sealed forming a new pouch, taped and several mid-seal forming two separate bags.
  - (3) A HEPA vacuum shall be used for evacuation of the glovebag in preparation for removal of the bag from the surface for clean-up in the event of a spill, and for post project clean-up.
  - (4) With the glovebag collapsed and the ACM in the bottom of the bag, the bag shall be twisted several times and taped to seal that section during bag removal.



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- (5) A 6-mil plastic bag shall be slipped around the glovebag while it is still attached to the surface. The bag shall be detached from the surface by removing the tape or cutting the top with blunt scissors.
  - (6) The asbestos-containing waste, the clean-up materials, and protective clothing shall be wetted sufficiently, double-bagged minimizing air content, sealed separately, and disposed of in conformance with applicable regulations.
- 3. Removal of ACM Utilizing Tent Containment Procedure:
  - a. Tent procedures shall be limited to the removal of less than 260 linear feet and 160 square feet of ACM and shall not result in disturbance of ACM during tent erection.
  - b. Mist material with amended water and/or foam. Allow sufficient time for the amended water to penetrate the material to be removed.
  - c. Cut bands, wire or other items placed over insulation or ACM.
  - d. Remove the ACM using hand tools such as knives or scrapers.
  - e. Exercise caution when removing ACM.
  - f. Remove any residual asbestos-containing material from the substrate using wet cleaning methods.
  - g. Seal exposed ends of remaining insulation or ACM with a "wetable cloth" and/or encapsulant.
  - h. Place the removed 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.
  - i. Following the completion of removal of ACM, all visible residue shall be removed from the substrate.
- 4. Following Removal of ACM Utilizing Tent Containment or Tent/Glovebag Procedure:
  - a. Clean all visible accumulations of loose ACM. Metal shovels shall not be used within the Work Area.
  - b. Accumulations of dust shall be cleaned continuously until completion of clean up.

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- c. After removal of all visible accumulations of ACM, the area shall be:
  - (1) Wet cleaned using rags, mops or sponges.
  - (2) Permitted sufficient time to dry, prior to HEPA vacuuming all substrates.
  - (3) Lightly encapsulated to lockdown residual asbestos. A thin coat of an encapsulating agent shall be applied to any surfaces in the Work Area which were not the subject of removal or other remediation activities. In no event shall encapsulant be applied to any surface that was the subject of removal or other remediation activities prior to obtaining satisfactory clearance air monitoring results. 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.
  - (4) The Third-Party Air Monitor will conduct a visual observation of the Work Area to verify the absence of asbestos-containing waste materials.
  - (5) 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.
    - (a) All waste shall be removed from the Work Area and holding areas.
    - (b) All tools and equipment are to be removed and decontaminated in the decontamination enclosure system.
  - (6) 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.
  - (7) The Work Area shall be vacated for a minimum of one hour to allow fibers to settle prior to clearance air monitoring, when required.
- d. Final Barrier Removal

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- (1) Upon receipt of acceptable clearance testing results polyethylene sheeting (inside layers) and Isolation Barriers shall be removed and disposed accordingly as ACM. The tent shall be collapsed inward, enclosing the contaminated clothing. This contaminated material shall be disposed of in another plastic bag. The HEPA vacuum shall be decontaminated and sealed.
  - (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 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.

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- 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.

## ASBESTOS ABATEMENT

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

## ASBESTOS ABATEMENT

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.

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- 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 registered hazardous 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

## 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 repackage 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.



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- 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.

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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 028213**

### **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 New York Police Department (NYPD) - 25<sup>th</sup> Police Precinct, 120 East 119<sup>th</sup> Street, New York, New York 10035.
- 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 Design Drawings titled “NYPD 25th Police Precinct – Replacement of Generator,” dated 02/18/16 prepared by Goldman Copeland Consulting Engineers.
  - 2. “Final Report of Asbestos Survey Services, NYPD 25<sup>th</sup> Police Precinct, Replacement of Generator” performed by LiRo Engineers, Inc. dated 03/09/16.
- 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.

## ASBESTOS ABATEMENT

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 found within these areas such as exhaust insulation and roof membranes (all layers), etc.
  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 charges 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 H-002.00: Partial Cellar Floor Plan

- a. Remove and dispose of asbestos containing Exhaust Insulation within Work Area 1. ACM within Work Area 1 shall be removed utilizing NYCDEP Title 15, Chapter 1, § 1-105 Tent and Glove-Bag Procedure.

Work Area	Removal Procedure	Approximate Square Feet (Sq. Ft.)	Approximate Linear Feet (Ln. Ft.)
1	NYCDEP Title 15, Chapter 1, § 1-105 Tent and Glove-Bag Procedure	15 Sq. Ft. of Asbestos Containing 8" Exhaust Insulation - White	-

### 2. Drawing H-003.00: Partial Roof Plan

- b. Remove and dispose of asbestos containing Roof Membrane 1<sup>st</sup> layer (top) and asbestos contaminated Roof Membrane 2<sup>nd</sup> layer (middle) and Roof Membrane 3<sup>rd</sup> layer (bottom) within Work Area 2. ACM within Work Area

## ASBESTOS ABATEMENT

2 shall be removed utilizing NYCDEP Title 15, Chapter 1, § 1-107 Foam Procedure for Roof Removal.

Work Area	Removal Procedure	Approximate Square Feet (Sq. Ft.)	Approximate Linear Feet (Ln. Ft.)
2	NYCDEP Title 15, Chapter 1, § 1-107 Foam Procedure for Roof Removal	110 Sq. Ft. of Asbestos Containing Roof Membrane 1 <sup>st</sup> Layer (Top) – Black and Asbestos Contaminated Roof Membrane 2 <sup>nd</sup> Layer (Middle) Black and 3 <sup>rd</sup> Layer (Bottom ) - Black	—

- D. The facility is under the jurisdiction of the New York City Police Department (NYPD). 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.

## ASBESTOS ABATEMENT

- 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.

## **ASBESTOS ABATEMENT**

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:
2. Shall be performed at no additional charge to the City.
3. Shall be performed at times not interfering with the other activities in the building.
4. Shall be performed only with written consent from the Commissioner and the Facility Manager.
5. 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:

- a. 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 demonstrate compliance with the special experience requirements set forth in subparagraphs (1) through (5) below. The asbestos abatement contractor must submit documentation demonstrating compliance with all listed requirements. 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, as an "Asbestos Abatement Contractor".

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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 provide evidence of having successfully performed and completed in a timely fashion at least 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 of the owner or the owner's representative who is familiar with the asbestos abatement contractor's work; brief description of the 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, 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.
- 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. 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.

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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.

## ASBESTOS ABATEMENT

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 (cumingtonite-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.

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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) more than 25 linear feet or more than 10 square feet of 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 of 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 of 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.

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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. NYCDEP or DEP: The New York City Department of Environmental Protection.
38. 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.
39. DOB: The New York City Department of Buildings.
40. 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.
41. ELAP: Environmental Laboratory Approval Program administered by the New York State Department of Health.
42. 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

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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.

43. 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.
44. 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.
45. EPA or USEPA: United States Environmental Protection Agency.
46. 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.
47. 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.
48. FDNY: The Fire Department of the City of New York.
49. 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.
50. 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.
51. 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

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(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.

52. 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.
53. HEPA vacuum equipment: "HEPA vacuum equipment" shall mean vacuuming equipment with a HEPA filter.
54. Holding Area: Chamber in the equipment decontamination enclosure located between the washroom and an uncontaminated area.
55. Homogeneous Work Area: Portion of the Work Area that contains one type of ACM and/or where one type of abatement is used.
56. 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 wellbeing, or significant discomfort and inefficiency among worker or among the citizens of the community.
57. 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 wellbeing; 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 wellbeing; and
  - c. To prescribe methods to eliminate, control, or reduce such stresses when necessary to alleviate their efforts.
58. 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.

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- 59. 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.
- 60. 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.
- 61. 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.
- 62. Movable Object: Unit of equipment or furniture in the Work Area that can be removed from the Work Area.
- 63. 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.
- 64. NESHAPS: National Emission Standards for Hazardous Air Pollutants.
- 65. NFPA: The National Fire Protection Association.
- 66. NIOSH: National Institute for Occupational Safety and Health.
- 67. DEP or NYCDEP: New York City Department of Environmental Protection
- 68. NYSDOL: New York State Department of Labor.
- 69. 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.
- 70. NYSDOH: The New York State Department of Health.
- 71. 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.



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- 72. 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.
- 73. OSHA: Occupational Safety and Health Administration.
- 74. Outside air: "Outside air" shall mean the air outside the work place.
- 75. 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.
- 76. 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.
- 77. Personal Protective Equipment (PPE): Appropriate protective clothing, gloves, eye protection, footwear, and head gear.
- 78. Phase Contrast Microscopy (PCM): The measurement protocol for the assessment of the fiber content of air. (NIOSH Method 7400).
- 79. Physician: Person licensed or otherwise authorized under Article 131 Section 65.22 of the New York State Education Law.
- 80. Plasticize: To cover floors and walls with fire retardant plastic sheeting as herein specified or by using spray plastics as acceptable to the Department.
- 81. 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)
- 82. Project Designer: A person who holds a valid Project Designer Certificate issued by the New York State Department of Labor.
- 83. Project Monitor: A person who holds a valid Project Monitor Certificate issued by the New York State Department of Labor.
- 84. 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.
- 85. 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

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into the respirator. There are a number of test atmospheres, test agents, and exercises to perform during the test.

86. 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.
87. 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.
88. 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.
89. 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.
90. Replacement material: Any material used to replace ACM that contains less than .01 percent asbestos.
91. Shift: A worker's, or simultaneous group of workers', complete daily term of work.
92. 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.
93. 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.
94. Staging Area: Work Area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the Work Area.
95. Strip: To remove asbestos materials from any part of the facility.
96. 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.
97. Surface barriers: The plasticizing of walls, floors, and fixed objects within the work area to prevent contamination from subsequent work.
98. Surfactant: Chemical wetting agent added to water to improve penetration.

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99. 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.
100. Visible Emissions: Emissions containing particulate material that are visually detectable without the aid of instruments.
101. 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.
102. 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.
103. 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.
104. Wet methods: "Wet methods" shall mean the use of amended water or removal encapsulants to minimize the generation of fibers during ACM disturbance.
105. Work Area: Designated rooms, spaces, or areas of the building or structure where asbestos abatement activities take(s) place.
106. 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.
107. Work Place: The work area and the decontamination enclosure system(s).
108. 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.
109. Work Site: Premises where abatement activity is being performed. May be composed of one or more Work Areas.

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### 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 PAGING 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 digital telephone paging device ("Beeper") and/or cellular telephones which can be activated by a telephone number in the 212 or 646 or 718 or 917 or 929 area code. He shall supply the Department of Design and Construction with the activation number for the device and he is liable to respond back to the calls from DDC within the next one (1) hour period after he 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.

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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. 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. The 8-hour time weighted average airborne concentration of fibers to which any passerby may be exposed shall not exceed 0.01 fibers per cubic centimeter of air when fibers have a physical dimension longer than 5 micrometers as determined by the method prescribed in these Specifications.

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2. 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.
3. 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.
4. 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.
5. 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.
6. 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 cutoff switch shall be able to turn off the equipment on all floors.
7. 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.
8. 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

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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.
9. 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.
10. 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

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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;



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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. The general contractor shall submit, as required, an asbestos abatement permit due to one or more of the activities listed in 1.07 (B) (1-8) and (B) (13) of this specification. The asbestos abatement contractor is responsible for submitting, with an asbestos project notification, a work place safety plan (WPSP) and any other applicable construction documents. These documents must be prepared 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 asbestos abatement 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.

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- 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 general contractor 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.

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- 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, and shall be advised on safe decontamination.
- 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 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, 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

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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 NYCDEP identification numbers of Waste Hauler.
  - l. Description of the final clean-up procedures to be used.
  - m. Name and qualifications of laboratory for asbestos abatement contractor's Air Monitor including AIHA accreditation, and proof of NIOSH PAT and NIST/NVLAP Bulk Quality Assurance Proficiency

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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. Material Safety Data Sheets (MSDS) 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 MSDS are reviewed.
- p. Worker Training and Medical Surveillance: Asbestos abatement contractor shall submit a list of the persons who will be employed by him in 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.
- 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 on title page the project name, name, address and phone number of Environmental Control Representative; name, address and phone number of asbestos abatement contractor; name, address and phone number of asbestos abatement contractor and City's air testing entity; emergency numbers including, but not limited to local Fire/Rescue Department. Log book shall contain a list of personnel approved by the laboratory 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 a copy of the logbook containing a day-to-day record of personnel log entries countersigned by the Construction Project Manager every day.

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- r. 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. 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.

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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 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 and NYSDOL 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).
9. The asbestos abatement contractor shall submit one of the following certifications to the DOB, 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

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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 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.
- E. The a asbestos abatement contractor will have at all times in his possession and in view at the job site the OSHA regulations 29 CFR 1910.1001, and 1926.1101 Asbestos, and Environmental Protection Agency 40 CFR, Part 61, subpart B: National Emission Standard for asbestos, asbestos stripping, work practices and disposal of asbestos waste. He shall also have one copy of NYC Title 15, Chapter 1 of RCNY and NYS DOL ICR 56 at the job site at all times.



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- F. Familiarity with Pertinent Codes and Standards: In procuring all items used in this work, it is the a 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 43<sup>rd</sup> Street (between 5<sup>th</sup> and 6<sup>th</sup> Avenue) 4<sup>th</sup> 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

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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, 8<sup>th</sup> 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, 21<sup>st</sup> 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.

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### 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.
- 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.
- 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.

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- 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 setup 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. Insure 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:

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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:

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- 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 the asbestos

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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.

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### **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 system shall NOT be used to remove refuse.
- 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



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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 Factors<sup>5</sup>

Type of Respirator	Half mask	Full face piece	Helmet/hood
1. Air-Purifying Respirator <sup>1,2</sup>	<sup>3</sup> 10	50	.....
2. Powered Air-Purifying Respirator (PAPR)	50	1,000	<sup>4</sup> 25/1,000
3. Supplied-Air Respirator (SAR) or Airline Respirator			
• Demand mode	10	50	.....
• Continuous flow mode	50	1,000	<sup>4</sup> 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

Notes:

<sup>1</sup>Employers 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.

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<sup>2</sup>The 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.

<sup>3</sup>This APF category includes filtering face pieces, and half masks with elastomeric face pieces.

<sup>4</sup>The 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 face piece respirators, and receive an APF of 25.

<sup>5</sup>These 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-

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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

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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 two sets of fresh filters, for use by personnel who are authorized to inspect the worksite. 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.

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- 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-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. Respirators, disposable coveralls, head covers and foot covers shall be provided by the asbestos abatement contractor for the Facilities Representative, Construction Project Manager and any other authorized representative who may inspect the Work Area. Provide two respirators and six respirator filter changes per day.

### **1.17 AIR MONITORING - ASBESTOS ABATEMENT CONTRACTOR**

- A. Asbestos abatement contractor shall employ a qualified industrial hygiene laboratory to analyze air samples in accordance with OSHA Regulations, 1926.1101 (Asbestos Standards for Construction) and New York City regulations.
- B. 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).

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- C. Industrial hygiene laboratory shall also be a current proficient participant in the NIST/NVLAP Quality Assurance Program for the identification of bulk samples. Laboratory identification number shall be submitted to and approved by the City.
- D. Air monitoring responsibilities for the asbestos abatement contractor's employees, shall be performed by a representative of the industrial hygiene laboratory retained by the asbestos abatement contractor.
- E. Asbestos abatement contractor shall submit to the City all credentials of the designated (as defined in OSHA 1926.1101) and industrial hygiene laboratory representative for approval.
- F. Air monitoring and inspection shall be conducted by the Asbestos abatement contractor's competent person (as defined in OSHA 1926.1101).
- G. Continuous (daily or per shift) monitoring and inspection will include Work Area samples, personnel samples from the breathing zone of a worker to accurately determine the employees' 8-hour TWA (unless Type C respirators are used) and decontamination unit clean room samples.
- H. Work Area samples and employee personnel samples shall be taken using pumps whose flow rates can be determined to an accuracy of +5-percent, at a minimum of two liters per minute. This must be demonstrated at the job site.
- I. Sampling and analysis methods shall be per NIOSH 7400A.
- J. Test Reports:
  - 1. Promptly process and distribute one copy of the test results, to the Commissioner.
  - 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 by facsimile notify the Commissioner within 24 hours of the results of each test, followed by written notification within three days.
- K. 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.
- L. All costs for required air monitoring by the asbestos abatement contractor's competent person shall be borne by the asbestos abatement contractor.

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- M. 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.
- N. All samples shall be accompanied by a Chain of Custody Record that shall be submitted to the Construction Project Manager upon completion of analysis.

### 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.

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- 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 <sup>a</sup>	5 <sup>a</sup>	5 <sup>a</sup>
3.	Exterior Foam and Vertical Surfaces	-	5 <sup>c</sup>	5 <sup>d</sup>
4.	Interior Foam	10	5 <sup>c</sup>	10 <sup>d</sup>
Small Asbestos Projects				
1.	Full Containment	6	3	6
2.	Glovebag inside Tent	3 <sup>b</sup>	3 <sup>b</sup>	3 <sup>b</sup>
3.	Tent	3 <sup>b</sup>	3 <sup>b</sup>	3 <sup>b</sup>
4.	Exterior Foam and Vertical Surfaces	-	3 <sup>c</sup>	3 <sup>d</sup>
5.	Interior Foam	6	3 <sup>c</sup>	6 <sup>d</sup>
Minor Projects				
1.	Glovebag inside Tent	-	-	1 <sup>d</sup>
2.	Tent	-	-	1 <sup>d</sup>
3.	Exterior Foam and Vertical Surfaces	-	-	1 <sup>d</sup>
4.	Interior Foam	-	-	1 <sup>d</sup>

Notes:

- a. if more than three (3) tents then two (2) samples required per enclosure.
- b. if more than three (3) tents then one (1) sample required per enclosure.
- c. samples shall be taken within the work area(s).
- d. area 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.



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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.

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- 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:

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- 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.

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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. Area air sampling during abatement shall be conducted as specified in the following documents except as restricted or modified herein:
1. Measuring Airborne Asbestos Following an Abatement Action, US EPA document 600/4-85-049 (Nov., 1985);
  2. Guidance for Controlling Asbestos-Containing Materials in Buildings; US EPA Publication 560/5-85- 024 (June, 1984);
  3. Methodology for the Measurement of Airborne Asbestos by Electron Microscopy US EPA Contract No. 68-02- 3266;
  4. Mandatory and non-mandatory Electron Microscopy Methods set forth in 40 CFR Part 763, Subpart E, Appendix A.
  5. NIOSH 7400 method using "A" counting rules
- N. In accordance with the above criteria, area samples (see NYCDEP Asbestos Control Program Regulations) shall conform to the following schedule:

Area Samples for Analysis by	Minimum Volume	Flow Rate
PCM, 25mm cassettes	560 liters	5 to 15 liters/minute
TEM, 25mm cassettes	560 liters	1 to 10 liters/minute
TEM, 37mm cassettes	1,250 liters	1 to 10 liters/minute

- O. 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.

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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.
- P. 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.
- Q. 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

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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.

### **R. 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, 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 information into the DEP ARTS database within 24 hours of work area completion to 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 Third Party Air Monitoring Firm within 48 hours of receipt.

### **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.

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### **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.

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- 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.



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- 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.

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- 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. Wire brushes maybe used for cleaning pipe joints within glove-bags upon written approval of the Construction Project Manager.
- 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

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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, NECA 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 NEC, 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.

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- 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 (.006") 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

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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 (NYCDOS) 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.

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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 (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 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 twelve inches.

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- (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.
- 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

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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 tool, 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, 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.
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.



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- 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 twelve 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.
- 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.
  - (2) 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

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placed at the holding area entrance to prevent unauthorized access into the Work Area.

B. 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.

C. 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 job 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.

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- 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;

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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.

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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.

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- 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.

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- 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 cutoff 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-asbestos contaminated waste.



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- 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

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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 AFDs 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 Areas 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

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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.

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- 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

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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.

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- (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 utilizing NYCDEP Title 15, Chapter 1 §1-105 Tent and Glove-bag 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 polyethylene sheeting. Filters in HVAC systems shall be removed and treated as asbestos-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.

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- d. Provide and install decontamination enclosure systems in accordance with PART 3 - EXECUTION, Sections 3.01 and 3.02 of these Specifications. Decontamination facilities may be remote from the Work Areas.
- e. Construct rigid framework to support Work Area barriers. 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.
- f. Seal floor drains, sumps, shower tubs, and other collection devices with two layers of fire retardant 6-mil plastic and minimum 3/8" 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. Any opening greater than 32 square feet shall be framed with 2-inch by 4-inch studding placed 16 inches on center.
- g. Install and initiate operation of AFDs to provide a negative pressure and a minimum of four air changes per hour and negative pressure of -0.02" of water column 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 vacuums to produce a negative air pressure inside the enclosure is prohibited.
- h. Maintain emergency and fire exits from the Work Areas 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. 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.
- i. Temporary lighting within the Work Area and decontamination system shall be provided as required to achieve minimum illumination levels.
- j. Hand power tools used to drill, cut into, or otherwise disturb ACM shall be manufacture equipped with HEPA filtered local exhaust ventilation.
- k. 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.
- l. There shall be an airlock at the entrance to the tent, unless there is an attached worker or waste decontamination system.

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- m. Plasticize the area after pre-cleaning, using the following procedures. Do not apply polyethylene sheeting to the wall and ceiling surfaces that will be demolished to access ACM.
  - (1) Cover floor with one layer of fire retardant 6-mil polyethylene sheeting, turning layer a minimum of 12 inches up wall, and seal layer to wall.
  - (2) Cover walls with one layer of fire retardant 6-mil polyethylene sheeting, overlapping wall layer a minimum of 12 inches, and seal layer to floor layer.
  - (3) Cover ceilings with one layer of fire retardant 6-mil polyethylene sheeting, overlapping wall layer a minimum of 12 inches, and seal layer to wall layer.
  - (4) Repeat procedure for second layer. All joints in polyethylene sheeting shall be glued and taped in such a manner as to prohibit air passage. Joints on plastic layers shall be staggered to reduce the potential for water to penetrate.
  - (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 as described in this Specification.
  - (7) Repeat preparation of areas accessed by demolition activities as described above.
  - (8) 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.
  - (9) Protect non-ACM insulation within the Work Area(s) with two individual layers of fire retardant 6-mil polyethylene sheeting. Sheeting shall remain in-place until satisfactory clearance air monitoring results are achieved.
- n. Installation of glove-bags for removal of thermal system insulation, when required:
  - (1) General: Glove-bag operations shall be performed using commercially available glove-bags of at least fire retardant 6-



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mil, transparent plastic appropriately sized for the diameter of the material to be removed. The use of "moveable" glove-bag techniques is strictly forbidden. At no time, shall the glove-bag be sized to allow for the removal of more than three linear feet of insulation. Glovebag procedures may only be used in conjunction with full containment of the work area or the tent procedure.

- (2) Place the necessary tools and materials inside of the tool pouch of the glove-bag before the glove-bag procedure begins.
  - (3) Place duct-tape securely around the affected area to form a smooth area to which the glove-bag can be securely fastened.
  - (4) Attach glove-bag to the cable, wire or pipe. Seal top of glove-bag by double folding and stapling. Place duct-tape along the seam to form an airtight seal. Seal sides of glove-bag, where cable, wire or pipe passes through, with duct-tape to form an airtight seal.
  - (5) If the material adjacent to the work section is damaged, terminates, is jointed or contains an irregularity, wrap the section in two layers of 6-mil fire retardant polyethylene sheeting and seal airtight with duct-tape.
  - (6) Smoke test each glove-bag as indicated below. The Third-Party Air Monitor shall be present during all smoke testing.
  - (7) The glovebag shall be placed under negative pressure utilizing a HEPA vacuum, and a smoke tube shall then be aspirated to direct smoke at all seams and seals from outside the glovebag. Any leaks detected by the smoke test shall be duct taped airtight.
  - (8) All necessary tools and materials shall be brought into the work area before the glovebag procedure begins.
  - (9) Glovebag procedures shall be conducted by workers specifically trained in glovebag procedures and equipped with appropriate personal protective equipment.
  - (10) The insulation diameter worked shall not exceed one half the bag working length above the attached gloves.
- o. Glovebag procedures shall be conducted by workers specifically trained in glovebag procedures and equipped with appropriate personal protective equipment.
- p. Pre-Removal Inspections

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- (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 Thermal Insulation Using Glove-Bag Techniques:
- a. Mist material with amended water. Allow sufficient time for the amended water to penetrate the material to be removed.
  - b. Remove the insulation using hand tools such as knives or scissors.
  - c. Exercise caution when removing insulation.
  - d. Remove any residual asbestos-containing insulation from the substrate using wet cleaning methods and nylon-bristled hand brushes.
- (1) Any insulation ends created by this procedure shall be sealed with encapsulant prior to bag removal or thoroughly wetted before bag removal and sealed with wettable cloth end caps and spray glue or any combination of these materials immediately following bag removal.
  - (2) The tool pouch shall be separated from the bag prior to disposal by twisting it and the wall to which it is attached several times, and taping the twist to hold it in place, thus sealing the bag and the pouch which are severed at the midpoint of the twist. Alternatively, the tools can be pulled through with one or both glove inserts, thus turning the gloves inside out. The glove(s) is/are then twist sealed forming a new pouch, taped and several mid-seal forming two separate bags.
  - (3) A HEPA vacuum shall be used for evacuation of the glovebag in preparation for removal of the bag from the surface for clean-up in the event of a spill, and for post project clean-up.
  - (4) With the glovebag collapsed and the ACM in the bottom of the bag, the bag shall be twisted several times and taped to seal that section during bag removal.

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- (5) A 6-mil plastic bag shall be slipped around the glovebag while it is still attached to the surface. The bag shall be detached from the surface by removing the tape or cutting the top with blunt scissors.
  - (6) The asbestos-containing waste, the clean-up materials, and protective clothing shall be wetted sufficiently, double-bagged minimizing air content, sealed separately, and disposed of in conformance with applicable regulations.
- 3. Removal of ACM Utilizing Tent Containment Procedure:
  - a. Tent procedures shall be limited to the removal of less than 260 linear feet and 160 square feet of ACM and shall not result in disturbance of ACM during tent erection.
  - b. Mist material with amended water and/or foam. Allow sufficient time for the amended water to penetrate the material to be removed.
  - c. Cut bands, wire or other items placed over insulation or ACM.
  - d. Remove the ACM using hand tools such as knives or scrapers.
  - e. Exercise caution when removing ACM.
  - f. Remove any residual asbestos-containing material from the substrate using wet cleaning methods.
  - g. Seal exposed ends of remaining insulation or ACM with a "wetable cloth" and/or encapsulant.
  - h. Place the removed 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.
  - i. Following the completion of removal of ACM, all visible residue shall be removed from the substrate.
- 4. Following Removal of ACM Utilizing Tent Containment or Tent/Glovebag Procedure:
  - a. Clean all visible accumulations of loose ACM. Metal shovels shall not be used within the Work Area.
  - b. Accumulations of dust shall be cleaned continuously until completion of clean up.

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- c. After removal of all visible accumulations of ACM, the area shall be:
- (1) Wet cleaned using rags, mops or sponges.
  - (2) Permitted sufficient time to dry, prior to HEPA vacuuming all substrates.
  - (3) Lightly encapsulated to lockdown residual asbestos. A thin coat of an encapsulating agent shall be applied to any surfaces in the Work Area which were not the subject of removal or other remediation activities. In no event shall encapsulant be applied to any surface that was the subject of removal or other remediation activities prior to obtaining satisfactory clearance air monitoring results. 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.
  - (4) The Third-Party Air Monitor will conduct a visual observation of the Work Area to verify the absence of asbestos-containing waste materials.
  - (5) 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.
    - (a) All waste shall be removed from the Work Area and holding areas.
    - (b) All tools and equipment are to be removed and decontaminated in the decontamination enclosure system.
  - (6) 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.
  - (7) The Work Area shall be vacated for a minimum of one hour to allow fibers to settle prior to clearance air monitoring, when required.
- d. Final Barrier Removal

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- (1) Upon receipt of acceptable clearance testing results polyethylene sheeting (inside layers) and Isolation Barriers shall be removed and disposed accordingly as ACM. The tent shall be collapsed inward, enclosing the contaminated clothing. This contaminated material shall be disposed of in another plastic bag. The HEPA vacuum shall be decontaminated and sealed.
  - (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 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.
- D. Removal of ACM Roofing and Flashing Materials utilizing NYCDEP § 1-107 Foam Procedure for Roof Removal shall be as follows:
1. Preparation procedures:
    - a. These procedures apply only to the removal of asbestos-containing roofing material (ACRM) from exterior roof surfaces. The work area on the roof shall be cordoned off with clearly visible barriers such as caution tape, and only authorized persons shall have access.
    - b. The foam or viscous liquid shall be non-toxic, shall not require special respiratory protection for handling, and shall not affect the handling and disposal of the waste.
    - c. The foam or viscous liquid shall coat and maintain a stable blanket (minimum 1" thickness) for the duration of the removal process and shall leave an identifiable colored residue when it dissipates.
    - d. The foam or viscous liquid shall wet the ACRM. The ACRM shall be kept wet through the bagging process.
    - e. Persons entering the work area shall wear correctly-fitting, good traction rubber boots.
    - f. Abatement shall not be carried out during adverse weather conditions (e.g., precipitation, high winds, ambient temperature below 32 degrees Fahrenheit, etc.).
    - g. The worker decontamination unit may be attached to each work area at an entry/exit from each work area, or may be remote, in which case it shall be equipped with an airlock at the entrance. In addition to the

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shower head(s), the shower room shall be equipped with a flexible hose for waste decontamination for removal of less than 1,000 square feet of ACRM. For 1,000 square feet or more of ACRM removal, a separate waste decontamination facility shall be located at an entry/exit from each work area. Remote holding areas for the asbestos containing waste shall comply with Title 16, Chapter 8, Rules of the City of New York (16 RCNY 8 et. seq.).

- h. Movable objects shall be removed from the work area, or kept in place and wrapped in one sheet of fire retardant 6 mil plastic sheeting.
- i. Provisions shall be made to ensure a safe and adequate air supply to affected building(s). All vents, skylights, air intakes, windows and doors opening onto the roof, and all other openings shall be sealed with 2 layers of fire retardant 6 mil plastic or fitting with HEPA filters when appropriate. Temporary extensions may be installed to a height of 10 feet to ensure adequate air exchange instead of sealing vents, air intakes, etc., with 2 layers of plastic or HEPA filters. Drains may be equipped with 5 micron filtering system in lieu of being sealed.
- j. Fixed objects including perimeter walls, bulkheads, cooling towers, ducts and other rooftop appurtenances shall be covered in one sheet of fire retardant 6 mil plastic up to a height of at least six feet.
- k. THE ASBESTOS ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE INTERIOR SPACES BENEATH THE ROOF.
- l. All office equipment and furniture, including but not limited to desks, chairs, computers, printers, cabinets, etc., carpeted and wooden floors shall be covered with one layer of 6- mil plastic sheeting.
- m. THE ASBESTOS ABATEMENT CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE THAT MAY OCCUR IN THE INTERIOR SPACES, INCLUDING BUT NOT LIMITED TO OFFICE EQUIPMENT, FURNITURE, FLOORS, ETC., BENEATH THE ROOF DURING ALL PHASES OF THE ROOF ABATEMENT.
- n. The asbestos abatement contractor shall provide temporary roof protection consisting of 10-mil polyethylene sheeting following abatement over the open roof areas. Strict coordination with the General Asbestos abatement contractor, Construction Project Manager and/or Architect is required and necessary during this phase of abatement.
- o. Preliminary examination shall be conducted and precautions shall be taken to prevent damage to the interior of the building, including but not limited to office equipment, furniture, carpeted and wooden floors,

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etc., and to ensure no adverse effect on the structural stability of the roof due to the abatement activity.

- p. Abatement activities shall not be carried out during adverse weather conditions (e.g., precipitation, heavy winds, etc.).
- q. The floor area between the remote decontamination facility and the Work Area must be protected with 2 layers of 6-mil. polyethylene sheeting suitably anchored.
- r. Provisions shall be made to ensure a safe and adequate air supply to affected building(s). All vents, skylights, air intakes, windows and doors opening onto the roof, and all other openings are to be sealed with two layers of 6-mil plastic or fitted with HEPA-filters where appropriate. In lieu of sealing vents, air intakes, etc., with two layers of plastic or HEPA-filters, temporary extensions may be installed to a height of 10 feet to ensure adequate air exchange. Drains may be equipped with 5 micron filtering systems in lieu of being sealed.
- s. 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 Roofing and Flashing Materials:

- a. The asbestos abatement contractor shall be responsible for the removal of all roofing components, including multiple layers of built-up membrane, tar, vapor barrier and/or flashing down to the substrate/deck.
- b. Prior to actual removal, the built-up roofing shall be blanketed and wetted with a minimum 1" coating of the acceptable foam or viscous liquid which shall be maintained for the duration of the removal until the material is bagged. The foam or viscous liquid shall be confined to the work area.

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- c. Hand-held power tools used to drill, cut into, or otherwise disturb the ACRM shall be equipped with the HEPA-filtered local exhaust ventilation and operated to prevent potential fiber release.
  - d. Abatement shall not be performed in adverse weather conditions (e.g., precipitation, heavy winds, etc.). Asbestos abatement contractor shall protect all exposed roof during adverse weather conditions.
  - e. Portable HEPA-vacuum machines shall be available during abatement.
  - f. After the ACM removal and bagging, the bagged waste shall be HEPA-vacuumed, and then wet-cleaned and transferred into the shower room for double bagging. The double-bagged waste shall be transferred outside the clean room for its final transfer for storage in an enclosed waste container.
3. Following Removal of ACM Roofing and/or Flashing:
- a. Upon completion of the abatement in roof work area, clean-up procedures shall involve removal and bagging of:
  - b. The asbestos containing roofing material (ACRM)
  - c. Visible accumulations of asbestos containing waste
  - d. All excess foam or similar viscous liquid
  - e. All debris, and shall be followed by a thorough wet cleaning.
  - f. All tools shall be wet cleaned and HEPA-vacuumed, and then removed from the work area upon completion.
  - g. Following the removal of all debris, the work area shall be thoroughly wet cleaned. The work area shall be allowed to dry completely before the visual inspection is conducted. The inspection shall confirm the absence in the work area of:
    - (1) ACM, debris, bagged ACM waste,
    - (2) Excess foam or other viscous liquid.
  - h. If the work area fails visual inspection, it shall undergo another wet cleaning and/or HEPA vacuuming until it passes the visual inspection.
  - i. When the visual inspection and clearance testing is successful, all plastic may be removed.
  - j. Air monitoring shall be conducted in accordance with the relevant



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provisions of Air sampling shall be conducted in compliance with NYCDEP Title 15 Chapter 1, §1-41 Air Sampling Schedule.

### 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.

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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.

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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.

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- 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 repack any damaged containers.

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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 registered hazardous 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:

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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 repackage 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

## **ASBESTOS ABATEMENT**

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.

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- 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 03 10 00  
CONCRETE FORMWORK**

**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 DESCRIPTION**

- A. Scope:
1. The Contractor shall furnish all labor, materials, equipment and incidentals to design, furnish materials for, fabricate, erect and remove formwork, falsework and shoring for cast-in-place concrete as indicated on the Contract Drawings, specified and required for a complete installation.
- B. Related Work Specified Elsewhere:
1. Section 03 30 00, Cast-In-Place Concrete.

**1.3 QUALITY ASSURANCE AND QUALIFICATIONS**

- A. Reference Standards and Codes: Comply with applicable provisions and recommendations of the following, except as otherwise shown or specified:
1. ASTM A 36, Carbon Structural Steel.
  2. ACI 117, Standard Tolerances for Concrete Construction and Materials.
  3. ACI 303, Guide to Cast-in-Place Architectural Concrete Practice.
  4. ACI 318, Building Code Requirements for Structural Concrete.
  5. ACI 347, Guide to Formwork for Concrete.
  6. ACI SP-4, Formwork for Concrete.
  7. New York State Building Code.
  8. American Plywood Association (APA): APA Grade - Trademark.
  9. U.S. Department of Commerce Product Standards: PS-1-74 for Construction and Industrial Plywood
  10. Western Wood Products Association: WWPA Catalog "A" Use Product Manual.
- B. Formwork shall be designed and constructed in compliance with ACI SP-4 and ACI 303.
- C. Design of Formwork:
1. The Contractor shall assume responsibility for the design, engineering and construction of formwork. Forms shall be designed to produce concrete members identical in shape, lines and dimensions to members shown on the Contract Drawings.



2. The formwork shall be designed for the loads and lateral pressures in accordance with ACI 347 and wind loads as specified by the New York State Building Code.
  3. Construction and control joints, openings, offsets, keyways, recesses, moldings, chamfers, blocking, screeds, bulkheads, waterstops, anchorages, inserts, and other features shall be provided as required.
  4. Formwork shall be designed to be readily removable without impact, shock, or damage to 'green' concrete surfaces and adjacent materials.
  5. The maximum deflection of facing materials reflected in concrete surfaces exposed to view shall be 1/240 of the span between structural members. The formwork shall be cambered to compensate for anticipated deflections in the formwork due to the weight and pressure of the fresh concrete and due to construction loads.
- D. Unless otherwise specified or directed by the Commissioner, formwork shall be constructed so that the concrete surfaces will conform to the tolerance limits as given in ACI 117.
- E. A full size mock-up of a cast-in-place wall shall be erected on the site where directed.
- F. Shop and Working Drawings reviews shall be obtained before custom fabrication is started and before delivery of materials to the project site.
- G. Work of this Section shall be coordinated with the work of other trades so that construction is not delayed.
- H. Formwork erection procedures and health and safety of the work force shall be the responsibility of the Contractor. The requirements of authorities having jurisdiction shall be complied with.
- I. Errors of detailing and fabrication and the correct fit of the formwork shall be the responsibility of the Contractor.
- J. Materials, fabrications and workmanship found defective shall be promptly removed and replaced and new acceptable work shall be provided in accordance with Contract requirements at no additional expense to the City of NY.
- K. Design of formwork layout, spans, fastenings, joints, and framed openings shall be under the direct supervision of a Professional Engineer experienced in structural design of formwork and licensed in the State of New York.

#### **1.4 SUBMITTALS**

- A. Working Drawings, Shop Drawings and Material Specifications shall be submitted for the approval of the Engineer in accordance with the requirements of the General Conditions and Division 1 of the Detailed Specifications. Working Drawings and Shop Drawings shall include, but not be limited to:
1. Design of all field-constructed and prefabricated formwork.
  2. Detailed Shop Drawings shall be submitted which indicate, for each type of form required, material type, material thickness, finish, and a dimensional cross-sectional profile. Details of erection shall be shown on



the Shop Drawings, including various connections, layouts of form units placement directions, anchorage details, attachment of accessories, each condition requiring enclosures, cut opening, special jointing and other accessories as required to complete the work.

- B. Manufacturer's specifications and installation instructions for each type of required formwork and accessory shall be submitted. These include each type of sheeting, chamfer strips, form facing materials, form ties, form liners, rustication strips, form release agent, dovetail anchor slots, form coating material, form caulking and similar items.

## **1.5 PRODUCT DELIVERY, STORAGE AND HANDLING**

- A. Materials shall be delivered to the site in an undamaged condition and at such intervals as will avoid delay in the work.
- B. Material shall be stored and protected in a clean, properly drained location. Material shall be kept off the ground under a weather-tight covering permitting good air circulation. Formwork materials shall be stored on dry wood sleepers, pallets, platforms or other appropriate supports which have slope for positive drainage. Materials shall be protected from distortion, excessive stresses, corrosion and other damage. Materials shall not be stored on the structure in a manner that might cause distortion or damage to the supporting structure. The maximum uniform distributed storage load shall not exceed 20 pounds per square foot.
- C. Material shall be handled safely in a manner that will prevent distortion or other damage. Care shall be exercised at all times to avoid damage through careless handling during unloading, storing and erecting. Panels shall be supported by using strong backs while lifting panels in a horizontal position.

## **1.6 FIELD MEASUREMENTS**

- A. Prior to commencement of the work, existing dimensions, elevations, locations and conditions applicable to the work shall be field verified. Variances and discrepancies from the Contract Drawings and potential interferences shall be reported promptly to the Commissioner.
- B. Sufficient field measurements shall be taken prior to preparation of Shop Drawings and fabrication of construction materials, where possible, to ensure proper fitting of the work. However, job progress shall not be delayed. The Contractor shall allow for adjustments and fittings wherever the taking of field measurements before fabrication may not be possible or might delay the work.
- C. Actual field-verified conditions may require modifications to the fabrication and/or erection details as indicated on the Contract Drawings. The work shall be performed to meet actual field conditions encountered.



## **1.7 JOB CONDITIONS**

- A. Formwork materials shall be protected before, during and after erection to insure acceptable finished concrete work. In-place materials and other operations of work in connection with concrete pours shall be protected.
- B. In the event of damage to erected forms, necessary repairs or replacements prior to concrete pours shall be performed at no expense to the City of New York.
- C. The Contractor shall allow sufficient time, as determined by the Engineer from the approved schedule, between erection of forms and placing of concrete for the various trades to properly install their work.
- D. External or superimposed loads, lateral or vertical, shall not be applied on casting concrete until concrete has developed specified 28-day compressive strength and a minimum age of 14-days.
- E. Stay-in-place forms are not permitted unless otherwise shown on the Contract Drawings.

## **PART 2 - PRODUCTS**

### **2.1 LUMBER**

- A. Only stress-grade lumber shall be provided. Form framing, sheathing and shoring shall conform to WWP A Catalog A.
- B. For lumber in contact with concrete, the lumber shall be provided with dressed or tongue-and groove edges on at least the side contacting the concrete, unless otherwise indicated on the Contract Drawings.

### **2.2 PLYWOOD**

- A. Only grade-marked plywood conforming to APA shall be provided.
- B. B-B Plyform, Exterior Class 1 or 2, or High Density Overlay (HDO) form plywood, Class 1 or 2 conforming to U.S. Product Standard PS-1 shall be provided.
- C. Thickness shall be as required to maintain alignment and surface smoothness, but not less than 5/8 inch thick.

### **2.3 STEEL FORMS**

- A. Commercial grade sheets not less than 16 gage shall be provided.
- B. Steel forms in rust-free condition shall be maintained by use of steel wool and light grinding, followed by coats of the specified release agent.
- C. Stock material that is free from warps, bends, kinks, cracks, and rust or other matter that could stain the concrete shall be provided.
- D. Panels shall be fabricated in conformance with the approved submittals.
- E. Outward facing surfaces shall be reinforced as required to prevent warpage and deformation during concrete placement.

### **2.4 FORM TIES**

- A. Commercially manufactured type form ties, hangers, and clamps of such type that, after removal of the forms, metal will not be closer than concrete cover as



indicated on the Contract Drawings from concrete surface shall be provided. Nonfabricated wire ties will not be permitted.

- B. A cone-shaped, snap-in type form tie suitable for the intended use with a working load as required and an integral hot forged head shall be provided.
- C. Ties with swaged washers or other suitable devices to prevent seepage of fluid along the ties shall be provided. Ties shall be left in place. She-bolt with water seals shall be provided.
- D. Form ties for all liquid-retaining structures shall have waterstop at mid-thickness of wall.
- E. Lugs, cones, washers, or other devices which do not leave holes or depressions greater than 1-inch in diameter shall be provided.
- F. Products:
  - 1. A-2 Cone Snap-in Form Tie; Dayton Superior, Miamisburg, OH or equivalent form tie as manufactured by Williams Form Engineering Corp., Grand Rapids, MI; or Symons Corp., Des Plaines, IL.
  - 2. Or approved equal.

## **2.5 CHAMFER STRIPS**

- A. 3/4 inch by 3/4 inch triangular fillets shall be provided, all of which shall be milled from clear, straight-grain pine, surfaced each side, or all of which shall be extruded vinyl type with or without nailing flange unless otherwise indicated on the Contract Drawings.

## **2.6 INSERTS**

- A. Galvanized cast steel or galvanized welded steel inserts, complete with anchors to concrete and fittings such as bolts, wedges and straps shall be provided.

## **2.7 DOVETAIL ANCHOR SLOTS**

- A. Dovetail anchor slots manufactured from 22 gage, electro-galvanized steel with removable felt or polyurethane filler where indicated on the Contract Drawings shall be provided.

## **2.8 SHOP FABRICATED FORMS**

- A. Forms shall be fabricated in accordance with the approved submittals.
- B. Forms shall be maintained clean, smooth, and free from imperfections and warpage.
- C. Locate joints as indicated on the approved Shop Drawings.
  - 1. Form panels shall be arranged in symmetrical patterns conforming to the general lines of the structure.
  - 2. Except when otherwise indicated on the Contract Drawings, panels on vertical surface shall be oriented with the long dimension horizontal joints level and continuous.



3. Form panels on each side of the panel joint shall be precisely aligned by means of fasteners common to both panels, to result in a continuous, unbroken concrete surface.
4. Largest stock size practicable shall be provided.
5. Between form joints, areas less than the stock size of the form liner material shall be lined with a single piece of liner material.

## **2.9 FORM CAULKING**

- A. Form caulking shall be a one-component, gun-grade silicone sealant that is capable of producing flush, watertight and non-absorbent surfaces and joints. Sealant shall be compatible with the type of forming material and concrete ingredients used.

## **2.10 FORM RELEASE AGENT**

- A. Form release agent shall be a VOC compliant commercial formulation form-coating compound that will not bind with, stain, nor adversely affect concrete surfaces, and will not impair subsequent treatment of concrete surfaces requiring bond or adhesion, nor impede wetting of surfaces to be cured with water or curing compounds. Form release agent shall be a nonreactive type as approved by ANSI/ASF.
- B. Form film shall conform to the requirements of Paragraph 2.10.A.
  1. Thinner shall be provided as recommended by manufacturer of the form film.

## **2.11 FORM LINERS**

- A. Form liners shall be provided as indicated in the Detailed Specifications and/or on the Contract Drawings.

## **2.12 RUSTICATIONS**

- A. Rustications shall be provided as indicated in the Specifications and/or the Contract Drawings.

# **PART 3 - EXECUTION**

## **3.1 PREPARATION**

- A. The areas and conditions under which work of this Section is to be performed shall be examined. Conditions detrimental to the proper and timely completion of the work shall be corrected. Work shall not proceed until unsatisfactory conditions have been corrected. Prior to placement of concrete, forms shall be inspected for cleanliness and accuracy of alignment.
- B. Earth cuts shall not be used as forms for vertical surfaces, unless shown on the Contract Drawings or specified.



- C. Where different levels are indicated for wall footings, the footings shall be stepped. Unless otherwise indicated on the Contract Drawings, steps in wall footings shall not be of greater height than the thickness of the footings and steps shall not lap less than 6 inches. No form shall be set at the back of such steps and where earth has slumped off in such locations it shall be cut back to a vertical plane just before the concrete is placed.

### **3.2 ERECTION AND INSTALLATION**

- A. Forms shall be constructed in accordance with ACI 347 to required dimensions, plumb, straight and mortar tight, and all joints and seams shall be made mortar-tight. Forms shall be substantial, properly braced, and tied together to maintain position and shape and to resist all pressures to which they may be subject. Unless otherwise indicated on the Contract Documents, formwork shall be constructed so that the concrete surfaces will conform to the tolerance limits in ACI 117.
- B. The size and spacing of studs and wales shall be determined by the nature of the work and the height to which concrete is placed. Forms shall be made adequate to produce true, smooth surfaces.
- C. Forms shall be supplied for repeated use in sufficient number to ensure the required rate of progress. Forms shall be cleaned and inspected immediately prior to depositing concrete. Deformed, broken or defective forms shall be removed from the work.
- D. Joints shall be snug and tight and shall occur only at the designated locations. Construction and control joints other than those shown on the Contract Drawings shall be approved by the Commissioner. Horizontal joints shall be level, and vertical joints shall be plumb. Joints shall be made perpendicular to the main reinforcement except where otherwise indicated on the Contract Drawings.
- E. Temporary openings shall be provided where interior area of formwork is inaccessible for cleanout or inspection before concrete placement, and for placement of concrete. Temporary openings shall be securely braced and set tightly to forms to prevent the loss of concrete mortar. Temporary openings shall be located on forms in locations as inconspicuous as possible consistent with the requirements of the work.
- F. Openings shall be provided in concrete formwork of the correct size and in the proper location to accommodate other operations of construction work in the project. Expansion joint material, waterstops, and other embedded items to be built into forms shall be accurately placed and securely supported against displacement. Voids in sleeves, inserts, and anchor slots shall be filled



temporarily with readily removable material to prevent the entry of concrete into the voids.

- G. Edge forms or bulkheads and intermediate screed strips for slabs shall be set to obtain required elevations and contours in the finished slab surface.
- H. Forms shall be set sufficiently to prevent joints in wood forms from opening prior to concrete pour.
- I. Cutting form ties back from the face of the concrete shall not be permitted.
- J. Formwork shall be observed continuously while concrete is being placed to see there are no deviations from desired elevation, alignment, plumbness and camber. If, during casting, weakness develops and the formwork shows settlement, deflection or distortion, the work shall be stopped, improperly cast concrete shall be removed and the formwork shall be reconstructed to perform properly.
  - 1. Forms for columns, beams, girders, walls and window openings shall be erected in accordance with ACI 117, with a maximum camber of 3/4-inch in 20 feet. Column sides shall be clamped with metal column clamps, or equal, spaced according to manufacturer's recommendation. Exposed external angles of columns, beams, girders and walls, except where specially shown on the Contract Drawings shall be provided with 3/4-inch bevel strips securely nailed on all concrete formwork including concrete encasement of structural steel shapes.
- K. Form release agents shall be applied in accordance with manufacturer's instructions and as specified herein:
  - 1. Form contact surfaces shall be coated with form release agent compound before reinforcement is placed. Excess form release agent material shall not be allowed to accumulate in the forms or to come into contact with surfaces which are required to be bonded to fresh concrete such as concrete reinforcement and embedded item
  - 2. Steel forms shall be coated with non-staining, rust-preventive form oil or otherwise shall be protected against rusting. Rust-stained steel surfaces in contact with concrete shall not be used.
- L. Excess form coating material shall not be allowed to accumulate in the forms.
- M. Form coatings shall not be allowed to come in contact with construction joints or reinforcing steel.
- N. Runways for moving equipment shall be provided with struts or legs and supported directly on the formwork or structural member without resting on the reinforcing steel.





- O. Wood forms shall be constructed for wall openings to facilitate loosening and to counteract swelling of the forms.
- P. All sleeves, inserts, anchors, and embedded items required for adjoining work or for support of joining work shall be placed prior to concreting.
- Q. Architectural Formwork:
  - 1. Form liners and rustication strips shall be installed in strict accordance with the manufacturer's written instructions and recommendations. The ends of the form liner pattern shall be clogged and all form joints and edges shall be taped using 1/8-inch thick by 3/4-inch wide foam tape centered on the joints, then caulked in accordance with the manufacturer's recommendations each time forms are set. A representative of the manufacturer shall be present at the site to supervise the installation of the form liner for the entire project.
  - 2. Forms for smooth concrete shall be installed in such a manner that there will be no horizontal form joints, and the forms shall be aligned so that vertical joints occur only at "V-Groove" rustications. Form ties shall be spaced in a uniform pattern vertically and horizontally. Form ties shall be positioned in smooth concrete bands and in panels between "reveal" rustications, if any.
  - 3. Beam and girder soffits shall be erected in accordance with ACI 117 and sufficiently braced, shored, and wedged to prevent deflection. Column sides shall be clamped in accordance with this specification with metal column clamps, spaced according to the manufacturer's directions.

### **3.3 PROTECTION**

- A. During installation, the forms shall not be used as a storage platform nor as a working platform until the forms have been permanently fastened in position.
- B. The surface of installed forms shall not be overloaded.

### **3.4 RESHORING**

- A. When reshoring is permitted or required the operations shall be planned in advance and in accordance with acceptable procedures. Reshoring procedures shall be prepared in accordance with Article 5 by a New York State registered professional engineer.
- B. During reshoring the concrete in beams, slabs, columns, or any other structural members shall not be loaded with combined dead and construction loads in excess of the loads permitted by the Engineer for the developed concrete compressive strength at the time of reshoring.



- C. Reshores shall be placed after stripping operations are complete but in no case later than the end of the working day on which stripping occurs.
- D. Reshoring for the purpose of early form removal shall be performed so that at no time will large areas of new construction be required to support their own weight. While reshoring is under way, no live loads shall be permitted on the new construction. Reshores shall be tightened to carry their required loads but they shall not be overtightened so that the new construction is overstressed. Reshores shall remain in place until the concrete has reached its specified 28-day strength, unless otherwise specified.
- E. For floors supporting shores under newly placed concrete, the original supporting shores or reshores shall be left in place. The shoring or reshoring system shall have a capacity sufficient to resist the anticipated loads and in all cases shall have a capacity equal to at least one-half of the capacity of the shoring system above. Reshores shall be located directly under the floors supporting shores unless other locations are permitted or shown on the Contract Drawings.

### **3.5 REMOVAL OF FORMS AND TIES**

- A. Forms shall be removed in accordance with ACI 347 recommendations without damage to concrete and in a manner to insure complete safety to the structure. Forms, form ties and bracing shall not be removed without specific permission of the Contractor's Registered Professional Engineer.
- B. Top forms on sloping surfaces of concrete shall be removed as soon as removal operations will not allow the concrete to sag. Any needed repairs or treatment required on sloping surfaces shall be performed at once and shall be followed immediately with the specified curing.
- C. Upon removal of forms, the Engineer shall be notified in order that a review of the newly stripped surfaces may be made before patching.
- D. Wood forms for wall openings shall be loosened without causing damage to the concrete. The face of concrete shall not be pried against. Only wooden wedges shall be used.
- E. Whenever the formwork is removed during the curing period, the exposed concrete shall be cured in accordance with one of the methods specified in Section 03300, Cast-in-Place Concrete.
- F. In general, forms shall not be removed until the concrete has hardened sufficiently to safely support its own load, plus any superimposed load that might be placed thereon. As a minimum the forms shall be left in place for length of time



specified below. These times represent cumulative days, not necessarily consecutive, during which the air surrounding the concrete is above 50°F.

	Min Time (days)	Min Strength (psi)
Curbs and Walks	2	1500
Columns	2	2000
Side forms for girders and beams	2	2000
Walls	2	2000
Bottom forms of slabs:		
Under 20 feet clear span	7	3000
Over 20 feet clear span	10	3500
Bottom forms of beams and girders:		
Under 10 feet clear span	7	3000
10 to 20 feet clear span	14	3500
Over 20 feet clear span	21	4000

These times shall be increased if the concrete temperature following placement is permitted to drop below 50°F.

- G. Care shall be taken in removing forms, wales, shoring, supports and form ties to avoid spalling or marring the concrete. Rubbed finish, if required, and such patching as may be necessary shall be started immediately after removal.

### **3.6 RE-USE OF FORMS**

- A. Forms for re-use shall meet requirements for new forms with respect to effect on cast-in-place concrete appearance and structural stability.
- B. Re-use of forms shall in no way delay or change the concrete placement schedule as compared to the schedule obtainable if all forms were new (in the case of wood forms) or if the total required forms were available (in the case of metal forms).
- C. Formwork shall be cleaned and re-oiled prior to re-use. Plywood forms shall not be re-used if unused holes from form ties exist from a previous use. High density overlay plywood panels shall be thoroughly cleaned and lightly recoated before each additional use. Wood forms shall not be used more than three times.

++ END OF SECTION ++



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**SECTION 03 21 00  
CONCRETE REINFORCING**

**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 DESCRIPTION**

- A. Scope:
1. Contractor shall furnish and place all steel reinforcements for concrete, including all cutting, bending, fastening and any special work necessary to hold the reinforcement in place and protect it from injury and corrosion in accordance with the requirements of this section.
  2. The work shall also include furnishing deformed reinforcing bars to be doweled and grouted into existing reinforced concrete.
- B. Related Sections:
1. Section 033000, Cast-In-Place Concrete.

**1.3 SUBMITTALS**

- A. In accordance with the procedures and requirements set forth in the General and Special Clauses, Contractor shall submit the following:
1. Shop Drawings.
  2. Mill test certificates.
- B. Each submittal shall be identified by the Specification Section Number.
- C. Each submittal shall be complete in all respects, incorporating all information and data listed herein and all additional information required for evaluation of the proposed materials compliance with the Contract Documents.
- D. Partial, incomplete or illegible submissions will be returned to the Contractor without review for resubmission.
1. Shop Drawings shall include but not be limited to:
    - a. Detailed placing and shop fabricating drawings, prepared in accordance with ACI 315 - latest edition, shall be furnished for all concrete reinforcement. These drawings shall be made to such a scale as to clearly show construction joint locations, openings, the arrangement, spacing and splicing of the bars. No materials shall be cut or fabricated until related drawings have been approved by the Commissioner.
    - b. Details of supports for horizontal reinforcing steel in slabs, beams, etc.



## **PART 2 - PRODUCTS**

### **2.1 GENERAL**

- A. Reinforcing bars shall be deformed new billet steel bars conforming to ASTM A615, Grade 60, A-775 and AASHTO M-284-811 A185.
- B. Wire mesh reinforcement shall conform to ASTM A185 "Welded Steel Wire Fabric for Concrete Reinforcement."
- C. Mill test certificates shall be furnished the Engineer for all shipments.
- D. Unless otherwise noted, all reinforcement shown on the Drawings shall be epoxy-coated. Reinforcement shall be coated with Scotchkote Brand Fusion Bonded Epoxy Coating 213 or 214 as manufactured by 3M, St. Paul, Minnesota, or equal. Coating shall be applied to cleaned steel reinforcing bars by the electrostatic spray method and fully cured in accordance with the recommendations of the manufacturer of the coating material. Before coating, the bars shall be cleaned by abrasive blast cleaning to meet the requirements of near white metal in accordance with SSPC-SP10. The coating shall be applied to the cleaned surface as soon as possible after cleaning, and before oxidation of the surface discernible to the unaided eye occurs. However, in no case shall application of the coating be delayed more than 8 hours after cleaning. The film thickness of the coating after curing shall be 5 to 20 mils, inclusive, as measured using ASTM G12 on the body of the reinforcing bar between the deformations and/or ribs on a straight length of bar. The coating shall be free from holes, voids, cracks and damaged areas discernible to the unaided eye. Damaged or other unsatisfactory areas shall be patched with a coating material and by a method recommended by the coating manufacturer.

## **PART 3 - EXECUTION**

### **3.1 FABRICATION AND STORAGE**

- A. All reinforcement shall be cut and bent cold accurately to the required dimensions. Bends shall be made in conformance with the Manual of Standard Practice of the Concrete Reinforcing Steel Institute. If shipped to the job fabricated, it shall be properly bundled and tagged so that it can be handled without damage and readily identified with the approved placing diagrams. Direct heating of the bars shall not be permitted.
- B. Reinforcing steel shall be stored above ground on platforms or other supports and shall be protected from the weather at all times by suitable covering. It shall be stored in an orderly manner and plainly marked to facilitate identification.



- C. Extended storage of epoxy coated bars at job site shall be avoided. If storage on site is expected to exceed 2 months, the epoxy coated bars or bundles shall be covered with opaque polyethylene or other UV protective material. Provisions shall be made for adequate ventilation to prevent condensation under the covering.

### **3.2 CLEANING AND PLACING**

- A. Before being placed in position, the reinforcement shall be thoroughly cleaned of all loose mill scale and rust, and of any dirt, coatings, or other material that might reduce the bond.
- B. Before being placed in position, any epoxy coated reinforcement that have been damaged shall be repaired per manufacturer recommendations, and shall be thoroughly cleared of all loose mill rust and of any dirt coating or other material that might reduce the bond.
- C. Chairs, tie wires, and other devices used to support, position, or fasten the reinforcement shall be made of or coated with, a dielectric material. The specific hardware that the Contractor proposes to use shall be approved by the Commissioner.
  - 1. Steel reinforcement shall be placed in the position indicated and within the allowable tolerances specified. Before concrete is placed, all reinforcement shall be securely fastened and supported with approved chairs or other approved devices. Brick or concrete block are not acceptable supporting devices.
  - 2. Concrete shall not be placed until the reinforcing steel is inspected and permission for placing concrete is granted by the Commissioner. All concrete placed in violation of this provision shall be rejected and removed.
  - 3. Reinforcement for slabs, beams, etc. poured directly on soil, shall be supported on plastic or stainless steel chairs designed specifically for this purpose. Brick supports or the like will not be acceptable.
- D. Field Bending - The alternatives of shop bending or field bending of bar reinforcement will be at the option of the Contractor. Field bending shall be done by cold methods only. Direct heating of the bars shall not be permitted.
  - 1. Field bending operations shall be allowed only when ambient and bar temperatures are 40°F or greater. When lower temperatures prevail the Contractor may supply, for field bending operations, a fully enclosed space that is heated and constructed to the satisfaction of the Engineer. No additional payment will be made for such an enclosure.
  - 2. Field bending of bars partially embedded in concrete is not permitted.
- E. Splices - Splices shall be permitted only where shown on the contract plans. Should the Contractor desire to splice bars at locations other than those shown on the contract plans, written permission to do so shall first be obtained from the Engineer. Such permitted splices shall be well distributed, or located, at points of low tensile



stress. Splices shall not be permitted unless a minimum of two (2) inches can be provided between the spliced bar and the nearest adjacent bar. Splices for bars No. 11, or smaller, shall be made by placing the bars in contact and wiring them together for the full length of the splice.

- F. Wire mesh reinforcement shall be securely fastened at the ends and edges. Wire mesh shall be supported at elevations indicated prior to concrete placement. Edge laps shall not be less than (1) mesh in width and end laps not less than two (2) meshes in length.
- G. Extended storage of epoxy coated bars at job site shall be avoided. If storage on site is expected to exceed 2 months, the epoxy coated bars or bundles shall be covered with opaque polyethylene or other UV protective material. Provisions shall be made for adequate ventilation to prevent condensation under the covering.

### **3.3 CONCRETE PROTECTION FOR REINFORCEMENT**

- A. The following minimum concrete cover (inches) shall be provided for reinforcement, except as otherwise noted on Contract Drawings.

++ END OF SECTION ++





**SECTION 033000  
CAST-IN-PLACE CONCRETE**

**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 RELATED WORK SPECIFIED ELSEWHERE**

- A. Concrete Formwork: Section 031100.
- B. Steel Concrete Reinforcement: Section 032100.

**1.3 REFERENCES**

- A. Except as shown or specified otherwise, the Work of this Section shall conform to the requirements of American Concrete Institute (ACI) and American Society for Testing and Materials (ASTM) documents.
1. ACI 301-05: Specification for Structural Concrete for Buildings.
  2. ACI 302.1R-04: Guide for Concrete Floor and Slab Construction.
  3. ACI 302.2R-06: Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials.
  4. ACI 304.2R-96: Placing Concrete by Pumping Methods.
  5. ACI 305R-10: Hot Weather Concreting.
  6. ACI 306R-10: Cold Weather Concreting.
  7. ACI 308.1-11: Standard Specification for Curing Concrete.
  8. ACI 318 -05 Building Code Requirements for Structural Concrete.
  9. ASTM C 94/C 94M - 11b: Standard Specification for Ready-Mixed Concrete.
  10. ASTM C 494/C 494M - 11: Standard Specification for Chemical Admixtures for Concrete.
  11. ASTM F 710- 11: Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.

**1.4 DEFINITIONS**

- A. ACI 301, Section 1.2 - Definitions:
1. Add the following definitions:
    - a. Cementitious Material: Cementitious materials include cement, ground blast furnace slag and fly ash.
    - b. Corrosion Inhibitor Admixture: A liquid admixture, calcium nitrite that inhibits corrosion of concrete-embedded steel in the presence of chloride ions.



- c. Pumped Concrete: Concrete that is conveyed by pumping pressure through rigid pipe or flexible hose.
- d. Water-to-Cementitious Ratio (w/c): An ratio representing quantity in pounds of free moisture available for cement hydration divided by quantity of cementitious materials in pounds per cubic yard concrete.

## **1.5 SUBMITTALS**

- A. Submittals Package: Submit product data for design mix(es) and materials for concrete specified below at the same time as a package.
- B. Product Data:
  - 1. Mix Design: Submit proposed concrete design mix(es) together with name and location of batching plant at least 28 days prior to the start of concrete work.
    - a. Include test results of proposed concrete proportions based on previous field experience or laboratory trial batches in accordance with ACI 301, Section 4.
    - b. Pumped Concrete: Include test results of proposed design mix(es) tested under actual field conditions with the maximum horizontal run and vertical lift required for this project.
  - 2. Portland Cement: Brand and manufacturer's name.
  - 3. Fly Ash: Name and location of source, and DOT test numbers.
  - 4. Air-entraining Admixture: Brand and manufacturer's name.
  - 5. Water-reducing Admixture: Brand and manufacturer's name.
  - 6. High Range Water-reducing Admixture (Superplasticizer): Brand and manufacturer's name.
  - 7. Corrosion Inhibitor Admixture: Brand and manufacturer's name.
  - 8. Accelerating Admixture: Brand and manufacturer's name.
  - 9. Aggregates: Name and location of source, and DOT test numbers.
  - 10. Lightweight Coarse Aggregates: Brand and manufacturer's name.
  - 11. Chemical Hardener (Dustproofing): Brand and manufacturer's name, and application instructions.
  - 12. Bonding Agent (Adhesive): Brand and manufacturer's name, and preparation and application instructions.
  - 13. Expansion Joint Fillers: Brand and manufacturer's name.
  - 14. Waterstop: Brand and manufacturer's name, and installation instructions.
  - 15. Integral Water-Repellent Admixture: Brand, manufacturer name, specifications, and application instructions.
- C. Quality Control Submittals:
  - 1. Batching Plant Records: At the end of each day of placing concrete, furnish the Commissioner's Representative with a legible copy of all batch records for the concrete placed.



2. Concrete Pumping Equipment Data: Include manufacturer's name and model of principal components, type of pump, and type and diameter of pipe/hose.

## **1.6 QUALITY ASSURANCE**

- A. Qualifications of Crew Pumping Concrete: Workers pumping concrete shall have had at least one year of experience pumping concrete.
- B. Concrete batching plants shall be currently approved as concrete suppliers by the New York State Department of Transportation.
- C. Truck mixers for concrete shall be currently approved by the New York State Department of Transportation.
- D. Pumping equipment for pumped concrete shall be subject to the approval of the Commissioner.
- E. Fly ash supplier shall be on the New York State Department of Transportation's current "Approved List of Suppliers of Fly Ash".
- F. Source Quality Control: The Commissioner reserves the right to inspect and approve the following items, at his own discretion, either with his own forces or with a designated inspection agency:
  1. Batching and mixing facilities and equipment.
  2. Sources of materials.
- G. ACI 301, Section 1.3 Reference standards and cited publications:
  1. Add the following to the list of ASTM Standards:
    - a. C 311-11a Standard Methods of Sampling and Testing Fly Ash or Natural Pozzolans For Use As A Mineral Admixture in Portland Cement Concrete.

## **1.7 DELIVERY**

- A. ASTM C 94/C 94M, Article 14 - Batch Ticket Information: In addition to the information required by Paragraph 14.1, also include the following:
  1. Type and brand, and amount of cement.
  2. Weights of fine and coarse aggregates.
  3. Class and brand, and amount of fly ash (if any).



## **PART 2 PRODUCTS**

### **2.1 MATERIALS**

- A. Cement: ASTM C 150, Type I or II Portland cement.
- B. Water: Potable
- C. Air-entraining Admixture: ASTM C 260, and on the New York State Department of Transportation's current "Approved List".
- D. Water-reducing Admixture: ASTM C 494/C 494M, Type A, and on the New York State Department of Transportation's current "Approved List".
- E. High Range Water-reducing Admixture (Superplasticizer): ASTM C 494/C 494M, Type F.
- F. Corrosion-Inhibiting Admixture: ASTM C 494/C 494M, for use in resisting corrosion of steel reinforcement.
- G. Retarding Admixture: ASTM C 494, Type D, Water-reducing and retarding, for use in hot weather concreting, and on the New York State Department of Transportation's current "Approved List".
- H. Accelerating Admixture: Non-corrosive admixture, containing no chloride, complying with ASTM C 494, Type C or E.
- I. Fly Ash: ASTM C 618, including Table 1 (except for footnote A), Class F except that loss on ignition shall not exceed 4.0 percent.
- J. ACI 301, Section 4.2.1.2 - Aggregates:
  - 1. Add the following paragraph:
    - a. Fine aggregate for pumped concrete shall meet the requirements of ASTM C 33, except 15 to 30 percent shall pass the No. 50 sieve and 5 to 10 percent shall pass the No. 100 sieve. The fineness modulus of the fine aggregate for pumped concrete shall not vary more than 0.20 from the average value used in proportioning.
  - 2. Change paragraph 7.2.1 to read as follows:
    - a. Aggregates for lightweight concrete shall meet the requirements of ASTM C 330, except that fine aggregate for lightweight concrete shall meet the requirements of ASTM C 33.
  - 3. Add the following paragraph:
    - 1. Aggregates shall be taken from storage silos or other approved locations that have been tested and approved by the New York



State Department of Transportation, unless otherwise approved  
in writing by the Commissioner.

- K. Moisture-Retaining Cover: Waterproof paper or polyethylene film complying with ASTM C 171.
- L. Chemical Hardener (Dustproofing): Colorless aqueous solution of magnesium-zinc fluosilicate.
  - 1. Lapidolith by Sonneborn/ BASF Building Systems, 889 Valley Park Dr., Shakopee, MN 55379, (800) 433-9517.
  - 2. Surfhard by The Euclid Chemical Co., 19218 Redwood Rd., Cleveland, OH 44110, (216) 531-9222.
  - 3. Pena-Lith by W.R. Meadows, Inc., PO Box 543, Elgin, IL 60121, (847) 683-4500.
  - 4. FluoHard by L & M Construction Chemicals, Inc., 14851 Calhoun Rd., Omaha, NE 68152, (402) 453-6600.
  - 5. Armortop by Anti Hydro International, Inc., 265 Badger Ave., Newark, NJ 07108, (800) 777-1773.
  - 6. Diamond by Kaufman Products , Inc., 3811 Curtis Avenue, Baltimore, MD 21226, (800) 637-6372.
- M. Type 1 Expansion Joint Filler: Preformed, resilient, nonextruding cork units complying with ASTM D 1752, Type II.
- N. Epoxy Bonding Agent (Adhesive): 100 percent solids epoxy-resin-base bonding compound, complying with ASTM C 881, Types I, II, IV and V, Grade 2 (horizontal areas) or Grade 3 (overhead/vertical areas), and Class B (40-60 degrees Fahrenheit) or Class C (60 degree Fahrenheit and above).
  - 1. SurePoxxy HM Series by Kaufman Products, Inc., 3811 Curtis Avenue, Baltimore, MD 21226, (800) 637-6372.
  - 2. Sikadur Hi-Mod 32 by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071, (800) 933-7452.
  - 3. Epogrip by Sonneborn/-BASF Building Systems, 889 Valley Park Drive, Shakopee, MN 55379, (800) 433-9517.
- O. Emery Aggregate: Natural emery, crushed, polyhedral in shape, with not more than 10 percent flat or elongated pieces, properly screened, graded and packaged in the manufacturer's plant, and delivered to the Site in sealed, labeled packages.
  - 1. Emerundum by Anti Hydro International, Inc., 265 Badger Ave., Newark, NJ 07108, (800) 777-1773.
  - 2. Non-Slip Aggregate by Setcon Industries, Inc., 5 Mathews Ave., Riverdale, NJ 07457-1020, (201) 283-0500.
  - 3. Frictex H by Sonneborn/ BASF Building Systems, 889 Valley Park Dr., Shakopee, MN 55379, (800) 433-9517.



- P. Waterstop: Extruded from virgin polyvinyl chloride plastic compound containing no scrap or reclaimed material or pigment.
1. Size: Minimum 6 inches wide by 3/8 inch thick, unless otherwise indicated.
  2. Minimum Tensile Strength (ASTM D 412): 2000 psi.
  3. Minimum Ultimate Elongation (ASTM D 412): 350 percent.
  4. Shore A/10 Durometer Hardness (ASTM D 2240): Minimum 65; Maximum 83.
  5. Maximum 24 Hour Water Absorption (ASTM D 570): 0.15.

## **2.02 PROPORTIONING OF MIXES**

- A. The contractor shall 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.
- B. Cast-in-place concrete shall be air-entrained normal weight concrete except where lightweight concrete is indicated on the drawings.
1. Normal weight concrete, except as otherwise specified, shall have a minimum compressive strength of 3000 psi with a minimum of 564 pounds per cubic yard or 4000 psi, with a minimum of 611 pounds of cement per cubic yard. Slump: Maximum 4 inches; minimum 2 inches before the addition of any water-reducing admixtures or high-range water-reducing admixtures superplasticizers at the Site.
  2. Normal weight concrete for garage floors, and for exterior slabs, ramps and stairs shall have a minimum compressive strength of 4000 psi, with a minimum of 611 pounds of cement per cubic yard. Slump: Maximum 3 inches; minimum 2 inches before the addition of any water-reducing admixtures or high-range water-reducing admixtures superplasticizers at the Site.
  3. Optional Material: Fly ash may be substituted for Portland cement in normal weight and lightweight concrete up to a maximum of 15 percent by weight of the required minimum Portland cement. If fly ash is incorporated in a concrete design mix, make necessary adjustments to the design mix to compensate for the use of fly ash as a partial replacement for Portland cement.
    - a. Adjustments shall include the required increase in air-entraining admixture to provide the specified air content.
    - b. Lower early strength of the concrete shall be considered in deciding when to remove formwork.



- C. Lightweight concrete shall be air-entrained concrete having a minimum compressive strength of 4000 psi and an air-dry unit weight between 95 and 115 lb/cu ft, with a minimum of 611 pounds of cement per cu yd. Lightweight concrete shall be made with normal fine aggregate; lightweight fine aggregate shall not be used. Slump: Maximum 4 inches; minimum 1 inch before the addition of any water-reducing admixtures or high-range water-reducing admixtures superplasticizers at the Site.
- D. Slump for Pumped Concrete: When a water-reducing admixture is not used, maximum slump shall be 4 inches. When a water-reducing admixture is used, maximum slump shall be 6 inches and when a high-range water-reducing admixture superplasticizers is used, maximum slump shall be 8 inches.
- E. Design Air Content: Design air content for concrete shall be 6 percent by volume, with an allowable tolerance of plus or minus 1.5 percent for total air content, except as otherwise specified. Use air-entraining admixture, not air-entrained cement.
- F. Water-Cement Ratio: Cast-in-place concrete shall have a maximum water-cement ratio of 0.45.
- G. ACI 301, Section 4.2.2.3: Change article to read as follows:
  - 1. 4.2.2.3 - Size of Coarse Aggregates:
    - a. 4.2.2.3.a Normal Weight Concrete: Coarse aggregates shall conform to gradation requirements for various sizes as tabulated in Table No. 2 of ASTM C 33. The sizes of coarse aggregates for various classes of Work shall be as follows with all percentages being determined by weight.
    - b. 4.2.2.3.b For concrete floors, floor and roof slabs, reinforced beams and girders, columns and piles, concrete encasing underground electric conduits, and concrete in which the space between restricting objects is 2 inches or less, the coarse aggregate shall be Size No. 67.
    - c. 4.2.2.3.c For other concrete Work having a minimum cross-sectional dimension of not more than 6 inches, the coarse aggregate shall be a well graded mixture of No. 67 and No. 57, provided that not more than 50 percent nor less than 30 percent shall be Size No. 67 and not more than 70 percent nor less than 50 percent shall be Size No. 57.
    - d. 4.2.2.3.d For other concrete Work having a minimum cross-sectional dimension greater than 6 inches and not more than 12 inches, the coarse aggregate shall consist of a mixture of No. 67, No. 57 and No. 467, providing that not more than 25 percent nor less than 10 percent shall be Size No. 67 and not more than 40 percent shall be Size No. 467.



- e. 4.2.2.3.e For other concrete Work having a minimum cross-sectional dimension of more than 12 inches, the coarse aggregate shall consist of a mixture of No. 67, No. 57 and No. 357, providing not more than 25 percent nor less than 10 percent shall be Size No. 67 and not more than 40 percent shall be Size No. 357.
  - f. 4.2.2.3.f Lightweight Concrete: Lightweight aggregates shall be graded from 3/4 inch to No. 4 sieve size in conformance with Table No. 1 of ASTM C 330.
- H. Admixtures: Do not use admixtures in concrete unless specified or approved in writing by the Commissioner.
- I. ACI 301, Section 4.1.2.1 - Mixture Proportions:
- 1. Add the following to paragraph 4.1.2.1:
    - a. Proposed design mix(es) for pumped concrete and the pumping equipment shall have been tested under actual field conditions with the maximum horizontal run and vertical lift required for this project.

## **2.03 JOINTS**

- A. ACI 301, Section 5.3.2.6 - Construction joints and other bonded joints:
- 1. Delete the following subparagraphs:
    - a. Use an acceptable adhesive applied in accordance with the manufacturer's recommendations;
    - b. Use an acceptable surface retarder in accordance with manufacturer's recommendations;
    - c. Roughen the surface in an acceptable manner that exposes the aggregate uniformly and does not leave laitance, loosened particles of aggregate, or damaged concrete at the surface; or
    - d. Use Portland-cement grout of the same proportions as the mortar in the concrete in an acceptable manner.
  - 2. Add the following in place of the above subparagraph:
    - a. The use of bonding agent (adhesive).
    - b. The use of cement grout.
- B. ACI 301, Section 10.2.5 – Isolation-joint filler materials:
- 1. Add the following paragraphs:
    - a. Except as otherwise shown on the Drawings, expansion joints shall be as follows:
    - b. In joints required to receive a sealant, the joint filler shall be 1/2 inch thick and recessed as required to form a caulking slot.





- c. In joints not required to receive a sealant, the joint filler shall be 1/2 inch thick and extend through the full cross-section of the concrete.
- d. Tool edges of concrete with 1/8 inch radius edging tool.

## **2.04 PRODUCTION OF CONCRETE**

- A. Provide ready-mixed concrete, either central-mixed or truck-mixed, unless otherwise approved in writing by the Commissioner.
- B. ACI 301, Section 7 - Lightweight Concrete:
  - 1. Add the following paragraph:
    - a. Lightweight coarse aggregate shall be presoaked with water a minimum of 24 hours prior to use in a concrete mix to be pumped. Presoaking may be accomplished by suitable sprinkling.
- C. ACI 301, Section 5.3.2.1 Weather considerations
  - 1. Delete paragraph under 5.3.2.1.c - Hot Weather, and add the following:
    - a. 5.3.2.1.c Provide adequate controls to insure that the temperature of the concrete when placed does not exceed 90 degrees F., and make every effort to place it at a lower temperature. The temperature of the concrete as placed shall not be so high as to cause difficulty from loss of slump, flash set or cold joints. Ingredients may be cooled before mixing by shading the aggregates, fog spraying the coarse aggregate, chilling the mixing water or other approved means. Mixing water may be chilled with flake ice or well-crushed ice of a size that will melt completely during mixing, providing the water equivalent of the ice is calculated into the total amount of mixing water.
- D. Protect concrete from physical damage or reduced strength due to weather extremes during mixing, placement and curing.
  - 1. In cold weather, comply with ACI 306R.
    - a. When air temperature is below 40 degrees F (4 degrees C) heat the mixing water and, if necessary, the aggregates to obtain a concrete mixture temperature of not less than 50 degrees F (10 degrees C) and not more than 80 degrees F (27 degrees C) at point of placement. If the mixing water is heated, do not exceed a temperature of 140 degrees F at the time it is added to the cement and aggregates.
  - 2. In hot weather, comply with ACI 305R.
    - a. When air temperature is between 85 degrees F (30 degrees C) and 90 degrees F (32 degrees C), reduce mixing and delivery time from 1 1/2 hours to 75 minutes, and when air temperature is



above 90 degrees F (32 degrees C), reduce mixing and delivery time to 60 minutes.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION AND PREPARATION**

- A. Do not use items of aluminum for mixing, chuting, conveying, forming or finishing concrete, except magnesium alloy tools may be used for finishing.
- B. Check items of aluminum required to be embedded in the concrete and insure that they are coated, painted or otherwise isolated in an approved manner.
- C. Install waterstops in accordance with manufacturer's printed instructions.
- D. Hardened concrete, reinforcement, forms, and earth which will be in contact with fresh concrete shall be free from frost at the time of concrete placement.
- E. Do not deposit concrete in water. Keep excavations free of water by pumping or by other approved methods.
- F. Prior to placement of concrete, remove all hardened concrete spillage and foreign materials from the space to be occupied by the concrete.

#### **3.02 ADMIXTURE ADDITIONS AT THE SITE**

- A. Site additions shall be limited to high-range water-reducers, non-chloride accelerators, and corrosion inhibitors. Comply with manufacturers' printed instructions for discharge of admixtures shall be furnished.
- B. High-Range Water-Reducers:
  - 1. Concrete shall arrive at a slump of 2 to 4 inches (50 to 100 mm). Water additions at the Site shall be limited to comply with water-to-cementitious ratio requirements.
  - 2. Following addition of high-range water-reduced concrete, a minimum of 70 revolutions or 5 minutes of mixing shall be completed to assure a consistent mixture.
- C. All concrete with other admixture additions shall mix a minimum of 70 revolutions or 5 minutes to assure a consistent mixture.



### **3.03 PLACING**

- A. ACI 301, Section 5.3.2.3 Conveying equipment:
  - 1. Add the following paragraphs:
    - a. 5.3.2.3.d When pumping concrete, the lubricating mortar for the delivery line shall not be discharged into an area of concrete placement.
    - b. 5.3.2.3.e The inside diameter of the delivery lines for pumped concrete shall be the greater of either a minimum of 5 inches or 3 times the maximum size of coarse aggregate.
- B. ACI 301, Section 5.3.2.2 - Conveying:
  - 1. Add the following paragraph:
    - a. Operation of truck mixers and agitators and discharge limitations shall conform to the requirements of ASTM C 94.
- C. ACI 301, Section 5.3.2.4 - Depositing:
  - 1. Add the following paragraph:
    - a. Do not allow concrete to free fall more than 4 feet.

### **3.04 REPAIRING SURFACE DEFECTS**

- A. ACI 301, Section 5.3.7 – Repair of surface defects:
  - 1. Add the following paragraph:
    - a. 5.3.7.1.a Finish patched areas to match the texture of the surrounding surface.
- B. ACI 301, Section 5.3.7.2 - Repair of tie holes:
  - 1. Delete last paragraph in 5.3.7.2 and replace with the following:
    - a. The patch mixture shall consist of a mixture of dry-pack mortar, consisting of one part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for placing and handling. For surfaces exposed to view, blend white Portland cement and standard Portland cement so that, when dry, patching mortar will match surrounding color. Provide test areas at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.

### **3.05 FINISHING FORMED SURFACES**

- A. Finish Schedule: Except where indicated otherwise on the Drawings, provide the finishes below:
  - 1. Rough Form Finish for concrete surfaces not exposed to view.
  - 2. Smooth Form Finish for concrete surfaces exposed to view.



- B. ACI 301, Section 5.3.3.3 - As-cast Finishes:
  - 1. Add the following to paragraph 5.3.3.3:
    - a. Fins shall be completely removed on surfaces to receive waterproofing.

### **3.06 SLABS**

- A. Slabs On Grade: Provide key type joints unless otherwise shown. Tool exposed joints.
- B. ACI 301, Section 5.3.4 – Finishing unformed surfaces:
  - 1. Add the following paragraph to section 5.3.4.1 Placement:
    - a. Provide monolithic finishes on concrete floors and slabs without the addition of mortar or other filler material. Finish surfaces in true planes, true to line, with particular care taken during screeding to maintain an excess of concrete in front of the screed so as to prevent low spots. Screed and darby concrete to true planes while plastic and before free water rises to the surface. Do not perform finishing operations during the time free water (bleeding) is on the surface.
- C. Finish Schedule: Except where indicated otherwise on the Drawings, provide the finishes below:
  - 1. Troweled Finish for:
    - a. Interior slabs that are to be exposed to view.
    - b. Slabs and fill over which resilient wood flooring, resilient tile or sheet flooring, carpet, or thin-film coating system is required.
    - c. Slabs and fill over which thin-set ceramic tile is required, except fine-broom finished surface.
    - d. Treads and platforms of interior steps and stairs.
  - 2. Broom or Belt Finish for:
    - a. Exterior slabs. Texture as approved by the Commissioner's Representative.
- D. ACI 302 Chapter 8.2.8.2 - Tools for jointing; Saw-cutting.
  - 1. Add the following paragraph:
    - a. Early-entry dry-cut saws are preferred in place of conventional wet-cut saws.



- E. ACI 302 Chapter 8.3.12
  - 1. Add the following to Conventional wet-cut saw cutting:
    - a. Begin saw-cutting as soon as the saw will not dislodge the aggregate or ravel the edge of the saw-cut, but in no case longer than 12 hours after the slab is placed. Saw-cut a minimum of one quarter of the slab depth leaving a clean, sharp edge in the pattern shown on the Contract Documents. Provide sufficient personnel and equipment to complete saw-cutting operations within 18 hours after the slab is placed.
- F. Floor flatness and levelness tolerances: For flatness and levelness tolerances of floor slabs refer to ACI 302 Chapter 8.15. Floor surface tolerances shall be 1/8 inch over a horizontal distance of 10 feet in any direction, unless otherwise specified by floor profile quality classifications in ACI 302..
  - 1. When flatness or levelness tolerances are not met then the floor shall be ground or scarified and repoured to meet specifications.

### **3.07 CURING AND PROTECTION**

- A. Hot Weather Concreting: Comply with ACI 305R whenever the atmospheric temperature or the form surface temperature is at or above 90 degrees F., or climatic conditions of wind and/or low humidity will cause premature drying of the concrete.
- B. Curing Temperature: Maintain the temperature of the concrete at 50 degrees F. or above during the curing period. Keep the concrete temperature as uniform as possible and protect from rapid atmospheric temperature changes. Avoid temperature changes in concrete which exceeds 5 degrees F. in any one hour and 50 degrees F. in any 24-hour period.
- C. Curing and Moisture Mitigation for Resilient Flooring:
  - 1. Acceptable curing and drying conditions include a minimum ambient temperature of 70 degrees F and a maximum relative humidity of 50%.
    - a. Air movement at 15 mph.
  - 2. Do not cure slabs by adding water; ponding or wet burlap method.
  - 3. Do not use curing compounds or cure-and-seal materials unless such use is approved in writing by the adhesive and floor covering manufacturers. The curing product manufacturer's conformance to ASTM c 1315 is not a substitute for the adhesive and floor covering manufacturer's approval.
  - 4. Cure the slab by covering with waterproof paper, plastic sheets, or a combination of the two for 3 to 7 days.

### **3.08 CHEMICAL HARDENER (DUSTPROOFING)**

- A. Apply chemical hardener to all troweled finished interior floors which are to be left exposed.



- B. Do not apply chemical hardener until concrete has cured the number of days recommended in manufacturer's instructions.
- C. Prepare surfaces and apply chemical hardener in accordance with manufacturer's printed instructions and recommendations.

### **3.09 FIELD QUALITY CONTROL**

- A. ACI 301, Section 1.6.4.2 - Testing Services:
  - 1. Add the following paragraph:
    - a. 1.6.4.2. j Strength Tests for Pumped Concrete: Prepare strength test specimens and make strength tests from concrete samples obtained at the truck discharge chute and at the end of the pump delivery line in accordance with paragraph 16.3.4.4.
- B. ACI 301, Section 1.6.3.3 – Tests required of Contractor's testing agency:
  - 1. Add the following paragraph:
    - a. 1.6.3.3.c Make available to the Commissioner's Representatives whatever test samples are required to make tests. Furnish shipping boxes for compression test cylinders.
- C. Adjustment to Concrete Mixes: Mix design adjustments may be requested by the Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, at no additional cost to the City of New York and as accepted by the Commissioner. Laboratory test data for revised mix design and strength results must be submitted to and accepted by the Commissioner's Representative before using in the work.
- D. Test results will be reported in writing to the Commissioner's Representative, Ready-Mix Producer, and Contractor within 24 hours after tests. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-day tests and 28-day tests.
- E. Nondestructive Testing: Impact hammer, Windsor probe, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.
- F. Additional Tests: The City of New York shall make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by the Commissioner's Representative. The testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42,



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or by other methods as directed. Pay for such tests when unacceptable concrete is verified, including all inspection and Engineering fees when non-conforming work is verified.

**END OF SECTION**



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SECTION 04 20 00  
UNIT MASONRY

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 DESCRIPTION OF WORK

- A. Provide concrete unit masonry, and masonry accessories as specified herein, as shown on the drawings, and as needed for a complete and proper installation. The terms Concrete Masonry Unit (CMU) and Concrete Block are inter-changeable.

1.3 RELATED SECTIONS

- A. Cast in Place Concrete .....Section 03 30 00

1.4 DESIGN AND STRENGTH REQUIREMENTS

- A. The design requirements shall conform to ACI 530-05/ASCE 530.1-05 "Building Code Requirements for Masonry Structure"
- B. The masonry assembly of block and mortar shall have a minimum 28-day compressive strength of 2400 psi on the net section.
- C. Type M or S Mortar to be used strictly. Mortar to have a minimum 28-day compressive strength of 2400 psi.
- D. Grout for filling cells in blocks to have a 28 day minimum compressive strength of 3000 psi.
- E. No air-entraining admixtures or material containing such shall be permitted in the mortar. Also, no anti-freeze compounds, calcium chloride, or other compounds, unless expressly permitted otherwise, shall be permitted in the mortar.
- F. For fire rating requirements, refer to Drawings.

1.5 REFERENCES

- A. The specifications for the masonry work shall comply with all of the requirements of ACI 530.1-05/ASCE 5-05 "Specifications for Masonry Structures", unless otherwise specified herein.



B. American Society of Testing and Materials (ASTM) standards, latest editions.

- A153 Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Products.
- A615 Standard Specification for Deformed and Plain Billet - Steel Bars for Concrete Reinforcement.
- C33 Standard Specification for Concrete Aggregates.
- C90 Standard Specification for Hollow, Load-Bearing Concrete Masonry Units.
- C109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-inch or 50 MM Cube Specimens).
- C129 Standard Specification for Non-Load-Bearing Concrete Masonry Units.
- C140 Standard Methods of Sampling and Testing Concrete Masonry Units.
- C150 Standard Specification for Portland Cement.
- C270 Standard Specification for Mortar for Unit Masonry.
- C331 Standard Specification for Lightweight Aggregates for Concrete Masonry Units.
- C578 Standard Specification for Preformed, Cellular Polystyrene Thermal Insulation.

C. Industry Standards.

"Standard for Concrete Masonry Units" - UL 618- Underwriters Laboratory.

1.6 SUBMITTALS

A. Shop Drawings:

- 1. Submit reinforcing steel shop drawing of all steel at all masonry walls.
- 2. Submit all horizontal joint reinforcing details and masonry tie details.

B. Samples

- 1. Samples of each size and type of block to be used, including bond beam block.
- 2. Submit samples of horizontal joint reinforcement and masonry ties.

C. Quality Control Certificate Submittals

- 1. Certificates



- a. Submit CMU producer's certificate of compliance with ASTM C-90, and design requirements and strength requirements herein.
- b. Submit the CMU producer's certificate stating that the minimum equivalent thickness and mix design are in conformance with UL 618 for the indicated fire rating.

#### 1.7 QUALITY ASSURANCE

##### A. Qualifications

Company specializing in the Work of this Section shall have a minimum of three years experience..

##### B. Regulatory Requirements

1. Building Code: Work of this Section shall conform to all requirements of the New York City Building Code, including safety, health, noise, and anti-pollution regulations. Where more severe requirements than those contained in the Building Code are given in this Section, the requirements of this Section shall govern.
2. UL 618: Fire rating of CMU and assemblies shall conform to the requirements UL 618.

##### C. Testing

1. The City of New York shall have an independent testing laboratory that shall provide the testing required for the work. The Contractor shall provide the testing agency all materials and equipment necessary to access the work for inspection, as well as copies of all required submittals and shop drawings for the work. The Contractor shall also inform the testing agency of his construction schedule, and schedule the testing work with the agency, in a timely manner.
2. Cube strength test of the mortar and grout being mixed on site, shall be taken at regular intervals.

#### 1.8 DELIVERY, STORAGE, AND HANDLING

##### A. Deliver materials to project site in undamaged condition and store in location and with protection as needed for the following:

1. All Masonry Units: Prevent harm from contaminants, temperature changes, corrosion, and other causes.
2. Concrete Masonry Units: Limit moisture absorption in conformance with the applicable ASTM.
3. Cementitious Mortar and Grout Materials: Keep in dry conditions.
4. Aggregates: Keep in dry, clean area where grading can be controlled.
5. Accessories, Ties, and Reinforcement: Keep in area to prevent corrosion and to keep clean.



## 1.9 ENVIRONMENTAL REQUIREMENTS

### A. Construction Requirements

1. Salt or other chemicals for lowering the freezing temperature of the mortar shall not be used.
2. No masonry shall be laid when temperature is below 40° F.

### B. Protection Requirements

1. Protect masonry from wind, rain or snow for 24 hours.
2. An air temperature of at least 40°F shall be maintained on each side of masonry for a period of at least 48.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

#### A. Reinforcement and Ties

1. Hohmann & Barnard, Inc., Hauppauge, N.Y.
2. Dur-O-Wall, Arlington Heights, IL.
3. Heckmann Building Products, Inc., Melrose Park, IL

#### B. Masonry Cleaner

1. ProSoCo, Inc., South Plainfield, N.J.
2. Diedrich Technologies, Schenectady, NY
3. Global Industries, Port Washington, NY

### 2.2 MATERIALS

#### A. Base Materials

1. Portland Cement
  - a. Type I ASTM C150
  - b. Type II ASTM C150
2. Sand for Mortar Mix ASTM C144. Sand shall be natural sand with 100% passing the No. 8 sieve.
3. Aggregate for Masonry Grout ASTM C404
4. Hydrated Lime ASTM C207 Type "S"
5. Water - Clean, potable water free of injurious materials.
6. Mortar additive for use in setting of exterior brick coping caps, granite steps, and other such elements with horizontal surfaces exposed to weather.
  - a. Additive shall be non-toxic, non-flammable, and non-hazardous during storage, mixing, application, and when cured.



7. Premixed sand and lime for mortar mixes not allowed.

**B. Concrete Masonry Units (CMU)**

1. Types
  - a. Hollow Load Bearing: ASTM C90, Grade N-I, with a minimum 28-day compressive strength on net section of 2400 psi.
2. Size
  - a. Nominal face dimension 8" x 16", 10" X 16" and 12" X 16".
  - b. Provide half units, corner units, half-high units, "U" shaped lintel/bond beam units, and units of special size and shape or with multiple grinds, e.g., two faces, two ends, or any faces as required by the Drawings to accomplish the work.
3. Unit weight: Unit weight of concrete for all CMU shall not exceed 105 pcf when tested in accordance with ASTM C140.
4. UL fire ratings: Units manufactured with equivalent solid thicknesses, face shell thicknesses, web thicknesses, and other characteristics to obtain fire ratings as indicated on the Contract Drawings.

**C. Horizontal Joint Reinforcement**

1. Material
  - a. Truss type Reinforcement and Ties for Interior and exterior Walls: Hot-dip galvanized (after fabrication), ASTM A153. For exterior walls use an integral tie system for the brick, with brick ties at 24" oc in vertical and horizontal directions.
  - b. Factory-fabricated corners and tees at corners and intersecting walls for continuous type reinforcing.
2. Provide continuous joint reinforcement at 16" o.c. vertically at every other block course, unless noted otherwise on drawings.

**D. Reinforcing Steel**

1. Deformed bars conforming to ASTM A615, Grade 60.

**E. Masonry Cleaner**

Masonry cleaner capable of cleaning masonry without degrading the masonry material or mortar. Cleaner must be approved by the masonry manufacturer.

**2.3 MIXES**

**A. Mortar (basic)**

Provide Type I Portland cement. Masonry cement shall not be used as a substitute.

1. Type M: 1 part gray cement, 1/4 part lime, 3<sup>3</sup>/<sub>4</sub> parts dry sand. Minimum compressive strength shall be 2400 psi at 28 days.
2. Type S: 1 part gray cement, 1/2 part lime, 4<sup>1</sup>/<sub>2</sub> parts dry sand. Minimum compressive strength shall be 2400 psi at 28 days.



**B. Grout for Masonry**

**1. Mixes**

- a. Fine Grout: 1 part Portland Cement, 0-1/10 part Hydrated Lime, 2<sup>1</sup>/<sub>4</sub>-3 times the sum of volumes of cementitious materials of fine aggregate (Proportions by volumes).
- b. Coarse Grout: 1 part Portland Cement, 0-1/10 part Hydrated Lime, 2<sup>1</sup>/<sub>4</sub>-3 times the sum of volumes of cementitious materials of fine aggregate, and 1-2 times the sum of the volumes of cementitious materials of coarse aggregate (Portions by volume).
- c. Aggregates for Mixes: ASTM C 404.
- d. Refer to ACI 530 ACI 530.1 for additional requirements

**2. Location**

- a. For spaces less than 2" in horizontal direction, use fine grout.
- b. For spaces 2" and more in horizontal direction, use coarse grout.

**3. Strength**

- a. All grout shall have a minimum 28-day compressive strength of 3,000 psi.

**PART 3 – EXECUTION**

**3.1 EXAMINATION**

- A. Examine all adjoining Work on which this Work is in anyway dependent for proper installation and workmanship. Report to the Commissioner any conditions which prevents the performance of this Work.

**3.2 PROTECTION**

- A. Cover top of masonry wall with waterproof plastic membrane at the end of the work period and at other times when Work needs to be protected from rain and other precipitation. Extend cover down sides as needed to thoroughly protect the Work.
- B. During cold weather, do not use wet masonry units and frozen masonry units.
- C. Do not use frozen materials or lay masonry on frozen materials; remove frozen materials from wall. Refer to Part 1 of this Section, "Environmental Requirements" for temperature restrictions.
- D. Remove excess mortar from walls as soon after laying units as practicable to prevent staining and to facilitate cleaning of wall.
- E. Brace walls as needed until sufficiently set, or until intersecting walls provide lateral support.

**3.3 MIXING PROCEDURES FOR MORTAR**

- A. Measure material by volume or equivalent weight. In measuring by volume, measure ingredients by container. Do not measure by shovel.



- B. Mix ingredients in a clean mechanical mixer for a minimum of 3 minutes, maximum of 5, with the minimum amount of water to produce a workable consistency.
- C. Mortar that has stiffened because of evaporation of water from the mortar shall be re-tempered as frequently as needed to restore the required consistency. Mortar shall be used within 2½ hours after initial mixing.

**3.4 LAYING - GENERAL**

- A. Lay units true to dimensions, plumb and level, square; exterior and interior bond work in bond indicated on the Drawings or specified herein. All concrete masonry units shall be laid in running bond. Lay courses level with joints uniform; vertical joints spaced properly for plumb alignment.
- B. Fill bed joints and cross joints solid with mortar. Furrowed bed and spotted cross joints not permitted. For hollow block units, apply mortar full length on all bearing surfaces.
- C. "Tooth" temporary openings in exposed masonry walls, to maintain proper bond when closed.
- D. Tool joints in exposed masonry units to provide a neat, smooth, compacted surface.
- E. Remove excess mortar, leaving masonry surface clean.
- F. Cut all concrete masonry units with circular masonry saw; do not chop or chip units to fit.
- G. Build-in miscellaneous metal inserts and other items not furnished under this Section but specified to be installed under this Section.

**3.5 CONCRETE MASONRY UNITS (CMU)**

- A. General
  - 1. Lay blocks in Type M or S mortar, with cells vertical. Provide running bond at all masonry units
  - 2. Where interior partitions intersect other partition or walls, bond together with metal wall ties spaced 2'-0" o.c. min., vertically. Refer to Article on "Reinforcement".
  - 3. Where interior walls are to be furred, secure furring with hot-dip galvanized steel ties, spaced one for each 4-square feet.
  - 4. Extend interior partitions and furring up to underside of slabs, arches, and beams. Leave sufficient space between partition and slab/arch/beam to install fire-stopping materials.
  - 5. Leave temporary openings in interior partitions to permit passage of boilers and other equipment.
  - 6. Reinforce first two courses above all door openings with a layer of truss mesh reinforcement extending 12" beyond jambs.
  - 7. Provide grout in cores of blocks at jambs, parapets, under lintels, and where indicated on the Drawings.



8. Bond beam units shall be filled with grout or concrete having a minimum compressive strength of 3000 psi and reinforced as shown on details. Use special U shaped block for all bond beams.
- B. Horizontal and Vertical Face Joints
  1. Make joints uniform and 3/8" thick, unless otherwise indicated.
  2. Shove vertical joints tight.
  3. Tool joints with a smooth, non-staining tool, when thumb print hard, at surfaces to be painted or exposed.
  4. Point joints tight with a trowel, in unparged masonry below grade.
  5. Cut mortar joints flush in surfaces to be plastered, stuccoed, or covered with other masonry.
  6. Remove mortar protrusions that extend into cells or cavities, which are to be reinforced and filled.
- C. Exposed and Painted Surfaces
  1. Smooth, even texture, free of chips, cracks, or other imperfections and free from any material that will stain paint.
  2. Set block up with special care for plane, jointing, pattern, and cutting.
  3. Keep faces of units clean; clean off mortar droppings on block face immediately.
  4. Defective units will be rejected. Replace defective units with perfect units at no extra cost to the City of New York.
  5. Tool joints with a smooth, non-staining tool to produce a smooth and slightly concave surface.
  6. See Drawings for thickness of Concrete block.
- D. Controls Joints
  1. Construct 1/2" wide vertical control joints in partitions where indicated on the Drawings.
  2. Joints to extend full height of partition (floor to underside of slab or beam).
  3. Filler
    - a. Polyethylene Foam Bar, or
    - b. Polyurethane Type Filler
    - c. Width as required for partition thickness, minus 1".
    - d. Install filler as partition is erected.
    - e. Filler to extend full height of joint.

### 3.6 CUTTING AND FITTING

- A. Cut units with a motor-driven carborundum saw; provide smooth, straight edges.
- B. Provide necessary cuts to fit tightly in and around mechanical installations.
- C. Where split block units are used to conceal piping or other installations, provide reinforcement for bonding the split units together.





### 3.7 REINFORCEMENT

- A. Interior and Exterior Concrete Masonry Unit Walls:
  - 1. Provide diagonal truss reinforcement continuous at every second block course, unless indicated otherwise on drawing.
  - 2. Provide brick ties at 24" o.c. vertical and horizontal spacing.
  - 3. Provide vertical reinforcement bars in block cores, as shown on the drawings, with lap splices, as shown on the drawings. Fill all cores with reinforcement solid with grout.
  - 4. Provide all horizontal bar reinforcement in bond beams, as shown on the drawings, with lap splices, as shown on the drawings. Fill all bond beams solid with grout.

### 3.8 BUILT-IN WORK

- A. Where sleeves are required in partitions, furnish standard wrought iron pipes of necessary sizes and lengths and build in where shown.
- B. Set reglets for flashing, where required, and rake out to a depth of 1½".
- C. Maintain bucks, frames, and other built-in work in their proper position. Do not remove any braces or stays from these items until they are securely supported by and fastened to masonry.
- E. Set all loose lintels (exterior and interior), bolts, plates, and other items furnished under Section 05 12 00 and specified to be installed in this Section.
- F. Build into partitions and walls: Frames for grilles, convectors, access doors, and boxes for electrical equipment.
- G. Do not build wood blocks into walls for securing of grounds. Grounds shall be secured to the masonry by carpenter, nailing directly into masonry units or joints.
- H. Provide necessary special jamb blocks, regular and irregular angle blocks where required to obtain smooth, evenly jointed and regular block patterns.
- I. Build-in tube weep holes where indicated on details within the Contract Drawings.

### 3.9 MASONRY WALL REPAIRS

- A. Before cleaning masonry walls, examine faces for holes, cracks, and other defects. If corrections cannot be made to provide an appearance acceptable to the Commissioner, replace defective units.

### 3.10 FIELD QUALITY CONTROL

- A. The City of New York will make inspections and any testing deemed necessary.



3.11 CLEANING

A. Concrete Masonry Units

1. Clean wall surfaces to be painted; rub with carborundum stone: Remove mortar from surfaces; remove rough edges from joints.
2. Point up holes and joints. Brush with stiff bristle brush. Leave surface in condition to receive paint.
3. Clean other wall surfaces with stiff-bristle brush.
4. Do not use wire brush.

++ END OF SECTION 04 20 00 ++



**SECTION 042200  
CONCRETE UNIT MASONRY**

**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 RELATED WORK SPECIFIED ELSEWHERE**

- A. Steel Concrete Reinforcement: Section 032100.

**1.3 SUBMITTALS**

- A. Shop Drawings:
1. Submit shop drawings for precast concrete lintels.
  2. Submit placing drawings for bar reinforcement.
- B. Product Data: Catalog sheets, specifications, and installation instructions for the following:
1. Masonry wall reinforcement.
  2. Bar reinforcement.
  3. Adjustable wall ties.
  4. Flexible anchors.
  5. Dovetail anchor slot concrete inserts.
  6. Tiebars.
  7. Buck anchors.
  8. Metal lath.
  9. Hardware cloth.
  10. Thru-wall masonry flashing.
  11. Cap flashing with thru-wall cap flashing receiver.
  12. Control joint filler.
  13. PVC control joint.
  14. Premolded control joint strips.
  15. Weep holes.
  16. Asphalt felt.
- C. Quality Control Submittals:
1. Test Reports: Certified test reports for concrete masonry units showing that materials for delivery to the Project meet the requirements of these Specifications.



2. Certificates: Bar reinforcement manufacturer's certification that bar material conforms with ASTM A 615 and specified grade.

#### **1.4 DELIVERY, STORAGE, AND HANDLING**

- A. Store masonry units off the ground on platforms that allow air circulation under stacked units.
- B. Cover and protect masonry units against wetting prior to use.
- C. Handle masonry units on pallets or flat bed barrows.

#### **1.5 PROJECT CONDITIONS**

- A. Environmental Requirements; Cold Weather Conditions:
  1. At temperatures below 40 degrees F, maintain mortar temperature between 40 degrees F and 120 degrees F. If necessary, heat mixing water and sand to produce the required results.
  2. At temperatures between 40 degrees F and 32 degrees F, protect masonry from rain and snow for 24 hours after laying.
  3. At temperatures between 32 degrees F and 20 degrees F, provide wind breaks and cover the masonry to prevent wetting and freezing. Maintain masonry above freezing for not less than 24 hours using auxiliary heat or insulating blankets.
  4. At temperatures below 20 degrees F, provide heated enclosures for laying the masonry. At the end of the workday, maintain the enclosures and keep the Work from freezing for not less than 24 hours.
  5. Do not lower freezing point of mortar by use of antifreeze, calcium chloride or other additives.
  6. Do not use frozen materials or materials coated with ice or frost.

### **PART 2 PRODUCTS**

#### **2.1 CONCRETE MASONRY UNITS**

- A. Hollow Load-Bearing Units: ASTM C 90.
- B. Solid Load-Bearing Units: ASTM C 90.
- C. Hollow Non-Load-Bearing Units: ASTM C 129.
- D. Concrete Building Brick: ASTM C 55.



- E. Fire Rated Units: Aggregate type and equivalent solid thickness as required to obtain the fire resistance rating indicated. Ratings shall be based on fire tests in accordance with ASTM E 119.
- F. Aggregate:
  - 1. Lightweight Units: ASTM C 331; dry net weight not more than 105 lb per cu ft.
  - 2. Normal Weight Units: ASTM C 33; dry net weight not less than 125 lb per cu ft.
- G. Manufacturer: Obtain masonry units from one manufacturer, of uniform texture and color for each kind required. All concrete masonry units must be certified to contain a minimum of 30 percent pre-consumer (post-industrial) recycled content.

## **2.2 ACCESSORIES**

- A. Masonry Wall Reinforcement: Joint reinforcement factory fabricated from cold-drawn steel wire, ASTM A 82, truss or ladder design, with 9 gage deformed steel wire longitudinal rods welded to 9 gage steel wire cross ties spaced 16 inches oc; width 1-1/2 to 2 inches less than total wall thickness. Furnish factory-fabricated corner and tee sections for corners and wall intersections.
  - 1. Finish for Exterior Walls: 1.5 oz per sq ft hot dipped galvanized after fabrication, ASTM A 153, Class B-2.
  - 2. Finish for Interior Walls: 0.8 oz per sq ft mill galvanized, ASTM A 641, Class 3, except interior walls exposed to moist environment shall have finish specified for exterior walls.
  - 3. Cavity Wall Construction: Ladder design fabricated with drip notch in cross ties centered over the cavity.
  - 4. For walls with concrete masonry unit back-up wythe, reinforcement shall have a third longitudinal rod located for proper embedment at internal face shell of concrete masonry units.
  - 5. Provide units with adjustable 2 piece rectangular ties where horizontal joints of facing wythe do not align with those of back-up.
- B. Bar Reinforcement: ASTM A 615, Grade 60, deformed steel bars.
  - 1. Rebar Positioner: Fabricate from galvanized steel wire, 9 gage or 6.5 gage as required. Design to fit concrete masonry units, and number, size and location of rebars indicated.
- C. Adjustable Wall Ties: 3/16 inch dia cold-drawn steel wire, ASTM A 82; 2 piece construction consisting of pintle section with 2 legs and corresponding eye' section. Maximum clearance between connecting parts shall be 1/16 inch. Wall tie shall be of size for at least 1-1/2 inch embedment into the mortar bed of solid masonry units.



1. Finish for Exterior Walls: 1.5 oz per sq ft hot dipped galvanized after fabrication, ASTM A 153, Class B-2.
  2. Finish for Interior Walls: 0.8 oz per sq ft mill galvanized, ASTM A 641, Class 3, except interior walls exposed to moist environment shall have finish specified for exterior walls.
  3. For solid masonry wythes, provide z-shaped ties.
  4. For composite wythes (face brick with concrete unit masonry backing), provide rectangular shaped ties.
- D. Flexible Anchors: 1.5 oz per sq ft hot dipped galvanized steel anchors which will permit horizontal and vertical movement of masonry but will maintain lateral restraint, and as follows:
1. For Anchorage To Concrete Framework: 2 piece anchors with 12 gage sheet steel dovetail section and rectangular or vee-shaped 3/16 inch dia wire tie section sized to extend to within one inch of face of masonry.
  2. For Anchorage To Steel Framework: 2 piece anchors with crimped 1/4 inch dia bar for welding to steel and rectangular or vee-shaped 3/16 inch dia wire tie section sized to extend to within one inch of face of masonry.
- E. Dovetail Anchor Slot Concrete Inserts: 24 gage galvanized steel, with filler strip; slot sized to fit dovetail anchor.
- F. Tiebars: 1-1/4 x 1/4 x 28 inch long steel bars with 3-inch long right angle bent ends, 1.5 oz per sq ft hot dipped galvanized after fabrication. Adjust length of bars as required when obstructions are encountered.
- G. Buck Anchors (For Anchoring New Masonry To Existing Construction): 1-1/4 x 1/8 x 8 inch long Z type steel buck anchor with 2 inch long right angle bent ends, bolt hole in one bent end, 1.5 oz per sq ft hot dipped galvanized after fabrication. Furnish 3/8-inch diameter galvanized machine bolt and non-ferrous metal expansion shield.
- H. Metal Lath: Galvanized, expanded metal lath weighing not less than 3.4 pounds per square yard.
- I. Hardware Cloth: 16 gage, 1/2 inch square mesh, galvanized steel wire mesh.
- J. Thru-Wall Masonry Flashing: Copper fabric consisting of a single sheet of 7 oz. copper sheet with asphalt impregnated glass fabric bonded to both sides of copper.
1. Joint Sealant: Trowel grade asphalt roofing cement.
- K. Cap flashing With Thru-Wall Cap Flashing Receiver: Three-way mortar bond type receiver with snap fit cap flashing. An acceptable product; "Two-Piece



Cap Flashing" by Keystone Flashing Co., 5119 N. Second St., Philadelphia, PA 19120, (800) 526-8348, [www.keystoneflashing.com](http://www.keystoneflashing.com), or approved equal.

1. Lead Coated Copper: 16 oz.
  2. Fabricate as indicated on Drawings.
- L. Control Joint Filler: For vertical control joints, close cell neoprene, 1/2 inch thick by 3 inch wide, conforming to ASTM D 1056, RE41 or ASTM D 2056, RE41.
- M. PVC Control Joint: Conform to ASTM D 2287 with a durometer hardness of 85 (+ or - 5) when tested in conformance with ASTM D 2240.
- O. Weep Holes: Clear plastic, round tube type, 3/8 inch od x 4 inches long.
- P. Asphalt Felt (For Mortar Control Joints): No. 15 asphalt saturated organic felt; ASTM D 226.

## **2.3 SOURCE QUALITY CONTROL**

- A. Tests: Sample and test concrete masonry units in accordance with ASTM C 140 and ASTM C 426. Have tests performed by a qualified independent testing laboratory.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Lay out walls and partitions with one course of unit masonry, or other suitable means, to define the spaces, locations of doors and other openings, and to serve as a guide for other trades in the installation of conduits, pipes, etc.
- B. Allow other trades sufficient opportunity to install built-in Work before proceeding with the walls and partitions. Do not cover pipes, conduit, or ductwork in masonry until directed by the Commissioner's Representative.
- C. Clean off supporting surface under first course of masonry just prior to laying the masonry units.
- D. Protection:
1. Protect face materials against staining.
  2. Remove misplaced mortar immediately.
  3. Protect sills, ledges, off-sets, and similar items from mortar drippings and other damage during construction.



4. Protect newly laid masonry from exposure to precipitation, excessive drying, freezing, soiling, backfill, and other harmful elements.
5. Cover top of walls with non-staining waterproof covering when Work is not in progress. Place with minimum 2-foot overhang of protective covering on each side of wall and securely anchor.

### **3.02 INSTALLATION**

- A. Install concrete masonry units plumb and true to line in level courses accurately spaced.
- B. Lay masonry units in running bond, with vertical joints located at center of units in course below, unless otherwise indicated on the Drawings.
- C. Lay masonry units in existing concrete unit masonry bond pattern, and match existing coursing and joints.
- D. Lay only dry masonry units.
- E. Adjust units to final position while mortar is soft and plastic. Remove units disturbed after mortar has stiffened; clean joints and units of mortar and re-lay in fresh mortar.
- F. Lay out Work to avoid use of less than half-size units. Where cutting of masonry units is necessary, cut with a power saw.
- G. Where fresh masonry joins partially or totally set masonry, clean bond surfaces of set masonry, removing loose mortar and foreign material prior to laying fresh masonry.
- H. If it is necessary to stop off a horizontal run of masonry, rack back one-half unit length in each course. Toothing will not be permitted unless approved in writing by the Commissioner's Representative.
- I. Cavity Wall Construction: Keep cavities clean of mortar droppings.

### **3.03 INSTALLATION TOLERANCES**

- A. Variation from the Plumb:
  1. In the lines and surfaces of columns, walls, and arises:
    - a. In 10 feet: 1/4 inch.
    - b. In any story or 20 feet maximum: 3/8 inch.
    - c. In 40 feet or more: 1/2 inch.
  2. For external corners, control joints, and other conspicuous lines:
    - a. In any story or 20 feet maximum: 1/4 inch.
    - b. In 40 feet or more: 1/2 inch.





- B. Variation from the Level or Grades indicated on the Drawings:
  - 1. For exposed lintels, sills, parapets, horizontal grooves, and other conspicuous lines:
    - a. In any bay or 20 feet maximum: 1/4 inch.
    - b. In 40 feet or more: 1/2 inch.
- C. Variation of the Linear Building Lines from Established Position in Plan and Related Portion of Columns, Walls, and Partitions:
  - 1. In any bay or 20 feet maximum: 1/2 inch.
  - 2. In 40 feet or more: 3/4 inch.
- D. Variation in Cross-sectional Dimensions of Columns and in the Thickness of Walls: Minus 1/4 inch; plus 1/2 inch.
- E. Surface Plane Tolerance for Concrete Unit Masonry to Receive High-build Glazed Coating or Thin-set Tile: 1/8 inch in 10 feet in all directions.

### **3.04 MORTAR BEDS**

- A. Hollow Units:
  - 1. Lay with full mortar coverage on horizontal and vertical face shells.
  - 2. Bed webs in mortar also at the following locations:
    - a. All courses of piers, columns and pilasters.
    - b. Starting course on footings and solid foundation walls.
    - c. Adjacent to cells or cavities to be reinforced or filled.
    - d. Within 1'-6" of each side of openings.
- B. Solid Units: Lay with full mortar coverage on horizontal and vertical joint surfaces.

### **3.05 JOINTS**

- A. Horizontal and Vertical Face Joints:
  - 1. Nominal Thickness: 3/8 inch, unless otherwise indicated.
  - 2. Construct uniform joints.
  - 3. Strike joints flush in surfaces to be plastered, stuccoed, or covered with other masonry or other surface applied finish other than paint and high-build glazed coating.
  - 4. Cut joints flush and tool slightly concave on both sides of other walls and partitions, including inner wythe of exterior cavity walls.
  - 5. Point joints tight in unparged masonry below ground.
- B. Fill horizontal joint between top of masonry partitions and underside of concrete slabs and beams with mortar, unless otherwise shown on the Drawings.



- C. Collar Joints: Except in cavity walls, fill vertical-longitudinal joint between wythes by slushing and rodding the joint full of mortar.
- D. Remove mortar protruding into cells or cavities to be reinforced or filled.

### **3.06 HORIZONTAL JOINT REINFORCEMENT**

- A. Reinforce horizontal joints of concrete unit masonry with continuous masonry wall reinforcement at the following locations:
  - 1. Exterior walls.
  - 2. Interior load-bearing walls.
  - 3. Straight runs of interior non-load-bearing partitions and walls that exceed 20 feet in length or exceed 12 feet in height, including partitions and walls having door and window openings.
  - 4. Joint immediately above and below openings in walls and partitions for a length 4 feet longer than opening.
- B. Install masonry wall reinforcement in horizontal joints as follows:
  - 1. Space reinforcement every 16 inches vertically, except space 8 inches in parapet walls.
  - 2. Straighten kinks or bends in the wires caused by handling, without injury to the material, before placing in masonry.
  - 3. Place longitudinal wires over face shell mortar beds.
  - 4. Embed entire length of longitudinal wires fully in mortar.
  - 5. Provide minimum mortar cover of 5/8 inch on exterior side of exterior walls and 1/2 inch at other locations.
  - 6. Lap ends of adjoining strips of reinforcement 6 inches or more.
  - 7. Install factory fabricated corner and tee sections at corners and wall intersections respectively.
  - 8. Cut reinforcement one inch short of each side of control and expansion joints.
  - 9. Install additional lengths of reinforcement in first unreinforced joint above and below openings, centered on opening.

### **3.07 TYING ADJACENT WYTHES**

- A. Tie adjacent wythes of masonry walls together with continuous masonry wall reinforcement spaced vertically not more than 16 inches oc. Install reinforcement as specified under HORIZONTAL JOINT REINFORCEMENT.
  - 1. Where horizontal mortar joints of back-up wythe and face wythe do not align or where one wythe is required to be constructed before the other, tie adjacent wythes of masonry walls together with adjustable wall ties spaced 16 inches vertically and 24 inches horizontally, in conjunction with continuous masonry wall reinforcement.



### **3.08 BONDING WITH MASONRY**

- A. Bonding of Abutting or Intersecting Walls and Partitions:
  - 1. External Corners: Where partitions and walls form external corners, bond together by alternate lapping of each course of corner unit.
  - 2. Door Openings Near Intersections: Where door openings in abutting partitions or walls are within one foot of the intersection, lay every second course at intersection in masonry bond. Reinforce every second course of intersection with masonry wall reinforcement. Fill all cells between the intersection and the door frame with mortar to the full height of the door.
- B. Bonding Pilasters, Piers, and Columns: Lay every second course in masonry bond. Reinforce every second course with masonry wall reinforcement.

### **3.09 TYING INTERSECTING WALLS AND PARTITIONS**

- A. Except where masonry bond is specified, terminate abutting walls and partitions flush against the face of the abutted walls. Tie intersections at every second course as follows:
  - 1. Load-Bearing Walls: Install tiebars. Embed bent ends in cells filled with mortar. Install pieces of metal lath under the cells to support the mortar fillings.
  - 2. Non-Load-Bearing Walls: Install ties of masonry wall reinforcement tee sections or strips of hardware cloth embedded in mortar.
    - a. Center standard length masonry wall reinforcement tee sections on the walls.
    - b. Width of hardware cloth strips shall be the width of the abutting wall less 1-1/2 inches; length shall be 24 inches or twice the width of the abutted wall, whichever is greater. Center the strips on the abutting wall and extend across intersection to 3/4 inch from the farthest face of the abutted wall.
- B. Fill vertical joint at abutted walls and partitions solid with mortar at intersection. If a control joint is located at the intersection, rake out both sides of joint to a depth of 3/8 inch.

### **3.10 ANCHORING**

- A. Anchor walls adjoining or intersecting structural framing and dependent upon structural framing for lateral support to structural members with flexible anchors. Build wire tie section into wall and secure other piece of anchor to structural member.
  - 1. Space anchors 16 inches oc, unless otherwise shown on the Drawings.



- B. Anchoring Partitions and Infill Abutting Existing Construction: Install buck anchors in bed joints 16 inches oc vertically. Embed one bent end in cell filled with mortar. Install piece of metal lath under the cell to support the mortar filling. Expansion bolt other bent end to existing construction.

### **3.11 WEEP HOLES**

- A. Install weep holes in mortar joints of exterior wythe of cavity walls along bottom of cavity over foundations, bond beams, through wall flashings, and other water stops in wall.
- B. Install weep holes approximately 32 inches oc. Keep weep holes free of mortar droppings and other obstructions.

### **3.12 BUILT-IN WORK**

- A. Avoid cutting and patching.
- B. Build-in bolts, anchors, nailing blocks, inserts, frames, vents, flashings, conduit and other items as masonry Work progresses.
- C. Fit masonry units closely around built-in Work. Fill voids around built-in items with mortar for anchorage. Solidly fill space between masonry and metal frames with mortar.
- D. Unless otherwise shown on the Drawings, construct 1/4 inch to 3/8 inch wide open joint around outside perimeter of exterior door and window frames and other framed exterior wall openings to receive sealant. Rake joints and tool smooth to a uniform depth of 1/4 inch.
- E. Installing In-Wall Flashings:
  - 1. Clean contact surfaces and remove projections that might puncture the flashing. Place flashing on bed of mortar and cover with mortar.
  - 2. Where bar reinforcement punctures the wall flashing, cut the flashing as close as possible to form a tight fit around the reinforcement.
  - 3. Apply trowel grade asphalt roof cement completely around the penetrations.
  - 4. Place flashings on bed of mortar and cover with mortar.
  - 5. At base of wall only, extend flashing 1/2 inch beyond the face of the wall and turn down at 45 degrees to form a drip at building foundation wall.
  - 6. At all other locations, after the Commissioner's Representative has inspected and approved flashing, cut flashing 1/4 inch beyond the face of the wall and turn down at 45 degrees to form a drip. Retool joint as required.



7. Extend thru wall flashing a minimum of 16 inches vertically up from relieving angle and concrete shelf.
8. Installing Compression Bar: Install a continuous metal compression bar over the flashing where indicated on the Drawings and secure one foot on center. Apply a bead of Type 1 Sealant along the top edge of the flange.
9. Form inside and outside corners using splice pieces. Splice pieces to be a minimum of 12 inches on each side of corner, install in accordance with the manufacturer's printed details, lap ends and edges a minimum of 6 inches, apply trowel grade asphalt roof cement between all flashing layers.

**F. Installing Thru-Wall Cap Flashing Receivers:**

1. Set the receiver so there is mortar above and below the built-in portion.
2. Do not mallet, bend or deform the exposed portion.
3. Lap all end joints so they interlock at the first raised rib. Apply Type 3 sealant between the mating surfaces of the built-in portion of the receiver before interlocking end joints.

**G. Installing Cap Flashing in Receivers:**

1. Insert the cap flashing into the receiver-locking slot. Apply upward pressure along the entire length of the cap flashing so that it is securely locked into position

**H. Fire extinguisher Cabinets: Install and build-in cabinets where shown.**

### **3.13 CHASES**

- A. Build chases in; do not cut.
- B. Minimum Installation Distance From Jambs of Openings: One concrete masonry unit length.

### **3.14 CONTROL JOINTS**

- A. Install control joints at locations shown on the Drawings. If locations of control joints are not shown, provide vertical control joints spaced not to exceed 35 feet; locate joints at points of natural weakness in the masonry Work.
- B. Mortar Control Joints: Fill abutting cells of masonry units with mortar after installing asphalt felt at one side of joint to break the bond. Rake out joints to a depth of 3/8 inch.
- C. Premoulded Control Joint Strips: Install joint strip as the Work progresses. Compress strips as masonry units are laid.



### **3.15 EXPANSION JOINTS**

- A. Install expansion joints at locations shown on the Drawings. Keep joints free of mortar and debris.
- B. Build flanges of metal expansion strips into masonry. Lap joints between metal strips 4 inches in direction of flow. Solder joints between metal strips below grade and at junctures with horizontal expansion joints.

### **3.16 LINTELS**

- A. Install lintels over all openings 14 inches or more in width in masonry walls, except where steel lintels are shown.
- B. Center lintel over opening. Set in full bed of mortar under each end.

### **3.17 REINFORCING WALLS AND PARTITIONS WITH BAR REINFORCEMENT AND GROUT**

- A. Place bar reinforcement in cells and cavities in the masonry where shown on the Drawings. Secure bars in designed locations with rebar positioners.
- B. Grouting: Completely fill cells and cavities in the masonry with grout where shown on the Drawings. Puddle or slightly vibrate grout during placement.
  - 1. Placement Procedure: Use low-lift grouting procedure. Place in lifts or layers up to maximum of 5 feet in height, except where otherwise shown on the Drawings. Stop level of grout in each lift approximately 1-1/2 inches from top of masonry, except the last lift shall finish flush with the top of masonry.

### **3.18 POINTING AND CLEANING**

- A. Cut off mortar projections remaining from tooling joints.
- B. Dry brush masonry Work after mortar has set, at end of each day's Work and after final pointing.
- C. At completion of masonry Work, fill holes in joints (except weep holes) and tool.
- D. Remove and replace CMU that are loose, chipped, broken, stained, or otherwise damaged, or if units do not match adjacent units. Install new units to match adjoining units in fresh mortar, point joints to eliminate any evidence of block replacement.
- E. Cut out and repoint defective joints.



- F. Leave Work and surrounding surfaces clean and free of mortar spots and droppings.

### **3.19 CONCRETE MASONRY UNIT SCHEDULE**

- A. Unless shown otherwise on the Drawings, use the various kinds of concrete masonry units specified at the locations indicated below:
1. Hollow Load-Bearing Units (Normal Weight):
    - a. Use for exposed exterior Work.
    - b. Use for Work in which the same masonry units are exposed on both the interior and exterior.
  2. Hollow Load-Bearing Units (Lightweight):
    - a. Use for interior bearing walls, pilasters, piers, and columns, and for interior wythe of exterior bearing walls.
  3. Solid Load-Bearing Units (Lightweight):
    - a. Use for stair enclosures, pipe shafts, ventilator shafts, elevator shafts, and dumbwaiter shafts.
    - b. Use for walls supporting wall-hung plumbing fixtures.
    - c. Use for enclosing refrigerator spaces. Fill cells completely with mortar or provide 100 percent solid units.
  4. Hollow Non-Load-Bearing Units (Lightweight):
    - a. Use for interior Work including wall backing, except as otherwise specified above.

**END OF SECTION**



**Department of  
Design and  
Construction**

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## **SECTION 05 09 20**

### **METAL FASTENING**

#### **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 Section Includes**

- A. The Contractor shall furnish all materials, labor, and equipment required to provide all metal fastening in accordance with the Contract Drawings and these Specifications.

##### **1.3 Related Specifications**

- A. Section 05120, Structural Steel.

##### **1.4 References**

- A. ASTM A36 – Carbon Structural Steel
- B. ASTM A307 - Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength
- C. ASTM A325 - Structural Steel Bolts, Steel Heat Treated, 120/105 ksi
- D. ASTM A489 – Carbon Steel Lifting Eyes
- E. ASTM A490 - Heat Treated Steel Structural Bolts, 150 ksi, Minimum
- F. ASTM A563 – Carbon and Alloy Steel Nuts
- G. ASTM B348 - Titanium and Titanium Alloy Bars and Billets
- H. ASTM D1785 - Standard Specification for Polyvinyl Chloride (PVC)
- I. ASTM E120 - Test Methods for Chemical Analysis of Titanium and Titanium Alloys.
- J. ASTM F467 - Nonferrous Nuts for General Use.
- K. ASTM F593 - Stainless Steel Bolts; Hex Cap Screws, and Studs.



- L. ASTM F594 - Stainless Steel Nuts
- M. ANSI/AWS D1.6 - Structural Welding Code – Stainless Steel.
- N. ANSI/AWS D1.1 - Structural Welding Code - Steel.
- O. ANSI/AWS D1.2 - Structural Welding Code - Aluminum.
- P. New York City Building Code (NYBC).
- Q. American Institute of Steel Construction (AISC).
- R. Code of Standard Practice for Steel Buildings and Bridges (AISC).
- S. Specification for Structural Joints Using ASTM A325 or A490 Bolts (AISC).
- T. Aluminum Association - Specifications for Aluminum Structures.

#### **1.5 Submittals**

- A. The Contractor shall submit working drawings, shop drawings and material specifications for approval by the Engineer in accordance with the requirements of DDC General Conditions. Working drawings and shop drawings shall include, but not be limited to:
  - 1. Shop Drawings providing the manufacturer, current catalog, fastener type, certification of the fastener's material and capacity and installation requirements.
  - 2. Copy of valid AWS certification for each person who is to perform field welding.
  - 3. Certified weld inspection reports, when required.
  - 4. Certified test reports for chemical analysis of titanium bolts, washers and nuts in accordance with ASTM E120.

#### **1.6 Quality Assurance**

- A. Fasteners not manufactured in the United States shall be tested and certification provided with respect to specified quality and strength standards. Certifications of origin shall be submitted for all U.S. Fasteners supplied on the project. Fasteners to be tested shall be randomly selected by the Commissioner in the field.
- B. All steel welding shall be performed by welders certified in accordance with AWS D1.1. All aluminum welding shall be performed by welders certified in accordance with AWS D1.2. Certifications of field welders shall be submitted prior to performing any field welds.
- C. Fasteners and concrete anchors will be inspected in accordance with Article 3.4 of this



specification section.

- D. The City of NY may engage an independent testing agency to perform testing of welded connections and to prepare test reports in accordance with AWS. Inadequate welds shall be corrected or redone and retested to the satisfaction of the Commissioner and/or an acceptable independent testing laboratory, at no additional cost to the City of NY.
- E. Manufacturer's load tables and certified performance tests for titanium bolts shall be provided.

#### **1.7 Delivery, Storage and Handling**

- A. Materials stored outdoors shall be supported above ground surfaces and protected with approved effective and durable covers.

### **PART 2 - PRODUCTS**

#### **2.1 Anchor Bolts**

- A. Anchor bolts for miscellaneous framing and architectural elements attachments shall conform to ASTM A36 or ASTM A307 Grade A except where stainless steel or other approved anchor bolts are shown on the Contract Drawings. Anchor bolts shall be of the size and configuration shown on the Contract Drawings and shall be supplied with hexagonal nuts meeting the requirements of ASTM A563 Grade A.
- B. Anchor bolts for equipment attachment shall be of stainless steel Type 316 with nitronic 60 stainless steel nuts and locknuts.
- C. All underwater anchor bolts shall be Type 316 stainless steel with nitronic 60 stainless steel nuts.
- D. Where anchor bolts are used to anchor galvanized steel or are otherwise specified to be galvanized, they shall be hot-dip galvanized in accordance with ASTM A307.
- E. Pipe sleeves around anchor bolts shall be of the size and configuration shown on the Contract Drawings.

#### **2.2 Bolts**

- A. Bolts, nuts and washers for miscellaneous framing and for attachment of architectural elements shall conform to Paragraph 2.01B. of Section 05120, Structural Steel.
- B. Where bolts are used to connect galvanized steel or are otherwise specified to be galvanized, bolts, nuts, and washers shall be hot-dip galvanized.



### **2.3 Stainless Steel Bolts**

- A. Stainless steel bolts shall conform to ASTM F593. All underwater fasteners shall be Type 316 stainless steel. Unless otherwise specified, fasteners for aluminum members shall be Type 304 stainless steel. Fasteners for stainless steel members shall be of matching grade.
- B. Stainless steel bolts shall have hexagonal heads with a raised letter or symbol on the bolts indicating the manufacturer, and shall be supplied with hexagonal nuts meeting the requirements of ASTM F594. Nuts shall be of the same alloy as the bolts and shall have a raised letter or symbol indicating the manufacturer.
- C. Nuts for stainless steel bolts for elements which are indicated on the Contract Drawings to be removable shall be made of nitronic 60 alloy.
- D. Material for bolts submerged in salt water or corrosive liquids for which stainless steel Type 316 is not suitable shall be as indicated in the Specifications.

### **2.4 Concrete Anchors**

- A. Concrete anchors shall be one of the types listed below as indicated on the Contract Drawings. Unless otherwise noted, all concrete anchors which are submerged, or which are subject to vibration from equipment such as pumps and generators, shall be injected, adhesive anchors. The determination of anchors equivalent to those listed below shall be on the basis of test data performed by a commercial testing laboratory. There are two categories used:
  - 1. Expansion anchors shall be wedge, sleeve, or drop-in mechanical anchors.
  - 2. Adhesive anchors shall be two part injection type.
  - 3. Where anchor type is not indicated on the Contract Drawings, the wedge expansion anchor shall be used.
- B. Expansion anchors shall be Kwik Bolt II by Hilti or Trubolt Wedge Anchor by ITW Ramset/Redhead or Power-Stud by Powers/Rawl or approved equal and shall be embedded to the depths shown on the Contract Drawings. If no embedment depth is given, the standard embedment depth as recommended by the manufacturer shall be used.
- C. Sleeve or drop-in anchors shall be as manufactured by Hilti, ITW Ramset/Red Head or Powers/Rawl or approved equal.
- D. Adhesive anchors shall consist of threaded rods or bolts anchored with an adhesive system into hardened concrete or grout-filled masonry. The adhesive system shall use a two-component adhesive mix and shall be injected with a static mixing nozzle following manufacturer's instructions. The embedment depth of the rod/bolt shall provide a minimum allowable bond strength that is equal to the allowable tensile capacity of the



rod/bolt (see Table 1) unless noted otherwise on the Contract Drawings. The adhesive system shall be "Epcon System Ceramic 6" as manufactured by ITW Ramset/Redhead, "HIT HY-150 Injection Adhesive Anchor System" as manufactured by Hilti or Powerfast by Powers/Rawl or approved equal.

- E. Concrete anchors shall be of Stainless Steel Type 304 unless noted otherwise. Concrete anchors for stainless steel attachments shall be of matching grade.
- F. All underwater concrete anchors shall be Type 316 stainless steel and shall have nitronic 60 stainless steel nuts.

## **2.5 Concrete Inserts**

### **A. Wedge Type Inserts:**

- 1. For attachment of shelf angles or brick relieving angles to the reinforced concrete beams or concrete encased steel beams, the concrete inserts shall be wedge type inserts. The inserts shall have an askew head bolt to produce an automatic tightening action when a load is placed on the bolt.
- 2. The wedge inserts shall be of malleable iron, hot dipped galvanized. The askew bolt and the horseshoe shim plates shall be of stainless steel Type 304. The type of insert and size of bolts shall be as shown on the Contract Drawings.
- 3. The wedge inserts shall be manufactured by Hohmann & Barnard, Inc., or approved equal.

### **B. Anchor Channel Inserts:**

- 1. For the top attachment of the masonry wall panels to steel encased or concrete structures, the inserts shall be anchor channel as manufactured by Halfen Anchoring Systems or approved equal.
- 2. The anchor channel shall be made from channel profiles with "I" anchors shop welded to the back of channels. Anchor channels shall be furnished with the head bolts, channel nuts, etc., for a complete installation. All material shall be stainless steel type 304.
- 3. The type and series of the anchor channel shall be as shown on the Contract Drawings.
- 4. Anchor channels can be used for other attachments if detailed on the Contract Drawings.

## **2.6 Masonry Anchors**



- A. Masonry anchors shall be injection adhesive anchors with screen tube for fastening to hollow block, clay tiles and brick with holes (see Table 2).
- B. The adhesive system shall be Hilti "Hit HY-20", "Epcon System Ceramic 6" as manufactured by ITW Ramset/Redhead or Powerfast by Powers/Rawl or approved equal.
- C. Masonry anchors shall be of stainless steel type 304 unless noted otherwise.  
Masonry anchors for stainless steel attachments shall be of the matching grade.

<b>Table 2</b>	
<b>Allowable Tensile Masonry (lbs) in Hollow Concrete</b>	
<b>Size</b>	<b>Masonry Anchors with Injection Adhesive System</b>
1/4"	255
5/16"	370
3/8"	525
1/2"	525

## **2.7 Welds**

- A. Electrodes for welding carbon steel shall comply with Section 051200, Structural Steel.
- B. Electrodes for welding aluminum shall comply with the Aluminum Association Specifications and AWS D1.2.
- C. Electrodes for welding stainless steel and other metals shall comply with AWS A5.4.

## **2.8 Eyebolts**

- A. Eyebolts shall be of the size indicated on the Contract Drawings and shall conform to ASTM A489 unless noted otherwise.
- B. Carbon steel eyebolts shall be galvanized.

## **2.9 Titanium Bolts and Anchors**

- A. Titanium bolts, washers, nuts and anchors shall be provided in, over, and adjacent to containment areas for ferric chloride and sodium hypochlorite, unless indicated otherwise on the Contract Drawings.
- B. Bolts and anchors shall be of the size indicated on the Contract Drawings. Bolts, anchors washers and nuts and shall conform to ASTM B348, Grade 2.



C. Minimum mechanical and physical properties:

- |    |                       |                        |
|----|-----------------------|------------------------|
| 1. | Tensile Strength      | 50,000 psi             |
| 2. | Yield Strength        | 40,000 psi             |
| 3. | Elongation in 4" dia. | 20%                    |
| 4. | Modulus of Elasticity | $14.9 \times 10^6$ psi |

**PART 3 EXECUTION**

**3.1 Examination**

- A. The Contractor shall field verify all dimensions and condition of the materials to be connected, review the Drawings and report any discrepancies to the Commissioner for clarification prior to starting fabrication.

**3.2 Installation**

A. Anchor Bolts and Concrete Anchors:

1. Anchor bolts shall be installed in accordance with AISC "Code of Standard Practice" by setting in concrete while it is being placed and positioned by means of a rigidly held template.
2. The installation of concrete anchors shall be done in strict conformance with the manufacturer's field demonstration and recommendations.
3. The holes drilled for adhesive anchors shall be cleaned by use of a fiber bristle brush and dry compressed air. The anchors shall be supported in the correct position until the adhesive sets and gains enough strength to prevent any dislocation. Adhesive anchors shall not be tightened or loaded until the adhesive has fully cured as recommended by the manufacturer.
4. No concrete anchor shall be installed before base concrete has attained specified 28-day strength.
5. Concrete anchors shall not be used in place of anchor bolts without Engineer's approval.

B. Bolts:

1. All steel bolts shall be installed in conformance with Section 051200, Structural Steel.
2. Unless otherwise specified, where aluminum and steel members are connected together they shall be fastened with Type 304 stainless steel bolts and isolated



with micarta, nylon, rubber, or approved equal.

- C. Concrete Inserts: Provide concrete inserts where shown on the Contract Drawings. Inserts shall be firmly held in position in the forms and sealed from intrusion of concrete mortar during concrete placement.
- D. Titanium Bolts
  - 1. All bolts shall be installed in conformance with the manufacturer's recommendations.
  - 2. Titanium anchors shall be installed in accordance with AISC "Code of Standard Practice" by setting in concrete while it is being placed and positioned by means of a rigidly held plate.

### **3.3 Welding**

- A. Welding shall comply with the requirements of Section 051200, Structural Steel.

### **3.4 Inspection**

- A. Inspection for high strength bolted connections shall conform to the requirements of Section 051200, Structural Steel.
- B. At least 25 percent of the concrete anchors required to be installed shall be proof tested to 1.33 times the allowable load specified by the manufacturer of the system.
- C. Welding inspection shall be done in accordance with the requirements of Section 051200, Structural Steel.
- D. Inspection of titanium bolted connections shall conform to the requirements of AISC "Code of Standard Practice".

++ END OF SECTION ++





## **SECTION 05 12 00**

### **STRUCTURAL STEEL**

#### **PART 1 - GENERAL**

##### **1.01 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].

##### **1.02 DESCRIPTION OF WORK**

- A. Structural steel required for this Work is indicated on the Drawings and specified herein. It includes the supply, fabrication and erection of the structural steel and includes, but is not necessarily limited to the following:
  - 1. All steel shown on the structural drawings.
- B. "Structural Steel" is that work defined above and in the AISC Code of Standard Practice, and all steel shown on the structural drawings.
- C. Related Work Described Elsewhere:
  - 1. Cast in Place Concrete - Section 03 30 00
  - 2. Cold Formed Metal Framing - Section 05 40 00

##### **1.03 QUALITY ASSURANCE**

- A. Code Compliance:

The work must comply with the following standard Specifications and Codes except where otherwise indicated in the plans and herein.

- 1. New York City Building Code - latest edition.
- 2. The following codes and specifications of the American Institute of Steel Construction, 13th Edition, plus all current supplements:
  - a. "Code of Standard Practice" and Commentary.
  - b. "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings", its Commentary and all Appendices.
  - c. "Structural Joints Using ASTM A325 or A490 Bolts".
- 3. American Welding Society - "Structural Welding Code AWS D1.1-88".
- 4. Steel Structure Painting Council - Painting Manual, Vol. 1 and 2, latest edition.



5. American Society for Testing and Materials (ASTM) latest editions - as referenced herein.

In the event of conflict between any of the above referenced Specifications and Codes, the provisions of the more stringent shall govern.

**B. Qualifications of Suppliers and Personnel:**

1. The steel fabricator shall have not less than three years continuous experience in the fabrication of structural steel.
2. The steel erector shall have not less than three years continuous experience in the erection of structural steel.

**C. Testing & Inspection:**

1. For purposes of verifying that the structural steel work complies with the requirements of the contract documents, the City of New York shall retain an independent testing laboratory, acceptable to the Commissioner, to provide non-destructive testing and inspection of the steel and welding as required.

**1.04 SUBMITTALS**

**A. Shop Drawings:**

1. The Contractor shall submit shop drawings to the Commissioner for review.
2. The drawings shall show all shop and erection details including cuts, copes, connection holes, threaded fasteners, bolts, studs and spacing, etc.
3. The drawings shall show all welds, both shop and field, by the currently recommended symbols of the American Welding Society.
4. Erection plans shall be drawn to a scale of at least 1/16" to the foot with section and detail drawings to a larger scale. The detail drawings, shall show all dimensions and details of all structural steel work.
5. The Contractor shall not fabricate any material until after the Commissioner's review of the shop drawings nor proceed with any work for which such drawings are required until they have been reviewed. Erection drawings shall be submitted for review first, and no detail shop drawings shall be submitted until the erection plans have been approved.

**B. Proofs of Compliance:**

The Contractor shall furnish an affidavit from the producer of the steel certifying that the steel meets the minimum requirements as specified. If no mill tests are furnished, the Contractor shall pay for any tests required to show compliance.



C. Manufacturers Literature:

Provide copies of manufacturer's specifications and installation instructions for the following products:

1. High Strength Bolts.

D. The written "welding procedures" for this project shall be submitted by the contractor to the Commissioner for approval.

1.05 PRODUCT HANDLING

A. Protection:

Use all means necessary to protect structural steel before, during and after installation and to protect the installed work and materials of all other trades.

1.06 REJECTION AND REPLACEMENT

- A. Any material and workmanship in the steel fabrication and erection found not meeting the requirements of the contract documents, in the shop or field, by the independent testing laboratory or the Commissioner, shall be repaired by the Contractor at his cost, with no additional cost to the City of New York.
- B. In the event of damage to the steel, the Contractor shall immediately make all repairs and replacements necessary to the approval of the Commissioner and the testing laboratory and at no additional cost to the City of New York.

PART 2 - PRODUCTS

2.01 STRUCTURAL STEEL SHAPES AND PLATES

- A. Structural steel for rolled shapes, plates, rods, bars, and anchor bolts shall conform to the requirements of ASTM A992.

2.02 STRUCTURAL BOLTS

- A. High strength bolts, ASTM A-325N or bearing type connections, to be used typically unless noted as slip critical connections.
- B. Common bolts: ASTM A-307 only where specifically noted on the drawings.

2.03 ELECTRODES

- A. Welding electrodes shall be E70XX, low hydrogen.



## 2.04 SUBSTITUTIONS

- A. Any material substitutions for the above products may only be done by written approval of the Commissioner.

## 2.05 OTHER MATERIALS

- A. All other materials, not specifically described but required for a complete and proper installation of structural steel, shall be provided and shall be new, free from rust, first quality of their respective kinds, and subject to the approval of the Commissioner.

# PART 3 - EXECUTION

## 3.01 FABRICATION

### A. Workmanship and Tolerances:

1. All members when finished shall be true and free of twists (see below), bends, and open joints between their component parts. Members shall be thoroughly straightened in the shop as required, by methods which will not injure them, before being worked on in any way.
2. All tolerances (mill, fabrication, and erection tolerances) shall be as per the referenced AISC Specifications and Codes, unless noted otherwise herein or on the drawings.

### B. Connections:

1. Connections shall be as indicated on the drawings.
2. Combination of bolts and welds in the same connection are not permitted, unless otherwise detailed.
3. Field connections shall be bolted, unless otherwise detailed. Shop connections shall be bolted or welded.
4. The high strength bolts used shall have a suitable identifying mark placed on top of the head before leaving the factory. The method of torqueing high strength bolts shall be as permitted by AISC, and as approved by the Commissioner. The Contractor shall identify his method of torqueing on a submittal to the Commissioner prior to any erection.
5. Splices in all continuous elements shall not be permitted unless shown on the shop drawings and approved by the Commissioner. The splices permitted in these continuous elements shall be made with complete joint penetration groove welds in the shop & fully tested as specified herein.
6. Welded Connections:
  - a. Definitions - All terms herein relating to the welds, welding and oxygen-cutting shall be construed in accordance with the standard Definitions of Welding Terms and Master Chart of Welding Processes of the American Welding Society, as amended at the time of bidding.



- b. Operators - Welds shall be made only by operators who have been previously qualified by tests, as prescribed in the American Welding Society D1.1.88 Structural Welding Code to perform the type of work required. The independent testing agency shall review the welder's certifications.
- c. All welders working on the project will be assigned an identifying symbol or mark. Each welder will be required to mark or stamp his symbol on each weldment completed for identification. Contractor shall maintain a record of welders employed, date of qualification and symbol or identification mark assigned to each.
- d. Welding equipment shall be of sufficient capacity and maintained in good working condition, capable of adjustment in full range of current settings. Welding cables shall be of adequate size for the currents involved and grounding methods shall be such as to insure proper machine operation.
- e. No welding shall begin until joint elements are clamped in proper alignment and adjusted to dimensions shown on the drawings with allowances and corrections for any weld shrinkage that is expected to minimize distortions, twists, bends, etc. of all the elements. Fabrication tolerances of the welded assemblies shall not exceed those indicated in Section 3.01A.
- f. All welding shall be done in accordance with the reference specifications, with the following modifications and additions:
  - 1. All shop welding shall be done by either manual shielded metal-arc welding or submerged arc welding. Other welding processes must be approved by the Commissioner.
  - 2. All field welding shall be done by manual shielded metal-arc welding.

**C. Oxygen Cutting:**

- 1. Manual oxygen cutting shall be done only with a mechanically-guided torch. Alternatively, an un-guided torch may be used provided the cut is not within 1/2 inch of the finished dimension and the final removal is completed by chipping or grinding to produce a surface quality equal to that of the base metal edges.
- 2. Oxygen cutting of structural steel in the field by the structural steel Contractor shall not be done except with the written consent and approval of the Commissioner. The use of oxygen-cut holes for bolted connections will under no circumstances be permitted, and violation of this clause will be sufficient cause for the rejection of any pieces in which oxygen cut holes exist.

**D. Anchor Bolts and Base Plates:**

- 1. Furnish post installed anchors and other connectors required for securing steel to the foundations and other in-place work.



### 3.02 PAINTING OF STRUCTURAL STEEL

#### A. Surface Preparation:

Thoroughly clean steel of all loose mill scale, loose rust, spatter, slag and flux deposit, oil, dirt, grease and other foreign matter.

#### B. Painting:

1. Paint interior steel with 3 mils coating of oil base paint.
2. Paint exterior exposed steel with mils zinc rich primer and 3 mils polyurethane top coat.

### 3.03 ERECTION

- A. The Contractor shall employ a competent and experienced foreman rigger to supervise all work of erection. This foreman shall be present at all times during this phase of the work.
- B. All precautions shall be taken to insure an accurately located and completely safe and stable structure at all times. Adequate guy wires shall be used throughout the work and all erection bolts shall be drawn up tight.
- C. All steel shall be accurately aligned before permanent connections are made.
- D. Erection tolerances shall be specified in the AISC Code unless otherwise indicated.

END OF SECTION



**SECTION 05 40 00  
COLD-FORMED METAL FRAMING**

**PART 1 GENERAL**

**1.01 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].

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Structural Steel: Section 051200.
- B. Non-load Bearing, Light Gage Steel Framing: Section 092116.

**1.03 REFERENCES**

- A. Except as shown or specified otherwise, the Work of this Section shall meet the requirements of the following:
  - 1. General Standard: "Specification for the Design of Cold-Formed Steel Structural Members" by the American Iron and Steel Institute (AISI Specification).
  - 2. Welding: "Structural Welding Code - Sheet Steel, AWS D1.3" by the American Welding Society (AWS Code).
- B. Organizations:
  - 1. AISI: American Iron and Steel Institute, 1140 Connecticut Ave., NW, Suite 705, Washington, D.C. 20036, (202) 452-7100, [www.steel.org](http://www.steel.org).
  - 2. AWS: American Welding Society, 550 N.W. LeJeune Rd., Miami, FL 33126, (800) 443-9353, [www.aws.org](http://www.aws.org).
  - 3. ASTM: ASTM International, 100 Barr Harbor Dr., PO Box C700, West Conshohocken, PA, 19428-2959, (610) 832-9500, [www.astm.org](http://www.astm.org).
  - 4. SSPC: The Society for Protective Coatings, 40 24th Street, 6th Floor, Pittsburgh PA 15222-4656, (877) 281-7772, [www.sspc.org](http://www.sspc.org).

**1.04 SYSTEM DESCRIPTION**

- A. Type of Metal Framing: Load carrying, formed steel framing.
  - 1. Framing with studs and accessories.



## **1.05 SUBMITTALS**

- A. Shop Drawings: Erection and fabrication drawings for all load carrying metal framing and accessories. Show plans and elevations at not less than 1/4 inch to 1'-0" scale, and details at not less than 1-1/2 inch to 1'-0" scale.
  - 1. Include the following in an early submission:
    - a. Erection drawings indicating sizes and locations of all metal framing members.
    - b. Anchor bolt plan showing anchor bolts, if any, to be placed in cast-in-place concrete Work.
    - c. Show plans and elevations at not less than 1/4 inch to 1'-0" scale, and details at not less than 1-1/2 inch to 1'-0" scale.
  - 2. Do not submit fabrication drawings, other than for anchor bolts, until after approval of the erection drawings.
  - 3. When shop drawings are marked "Approved as Noted", promptly resubmit copies of corrected shop drawings for formal approval and record.
- B. Product Data: Manufacturer's printed specifications and installation instructions for each type of metal framing and accessory, including data required to show compliance with the Drawings and Specifications.
- C. Quality Control Submittals:
  - 1. Certificates: Affidavit required under Quality Assurance Article.

## **1.06 QUALITY ASSURANCE**

- A. Certification: Affidavit certifying that sheet steel complies with specified quality, grade, and zinc-coating.
- B. Fire Rated Construction: Wherever a fire resistance classification is indicated for metal framing components, provide framing and accessories which have been tested and classified or listed for the construction and rating shown.

## **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver metal framing to the Site in manufacturer's unopened containers or bundles, identified with brand, type, and gage.
- B. Protect metal framing from damage and rusting. Store off the ground in dry, ventilated space.
- C. Store and handle metal framing in a manner that will not cause distortion.





## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Framing (including Studs and Tracks):
  - 1. Members of 12, 14, and 16 Gage Steel: Galvanized, structural quality sheet steel; ASTM A653, Grade D (minimum yield 50 ksi).
  - 2. Members of 18 and 20 Gage Steel: Galvanized, structural quality sheet steel; ASTM A653, Grade A (minimum yield 33 ksi).
- B. Accessories and Fasteners:
  - 1. Bracing, Bridging, Strapping, Reinforcement, Stiffeners, Plates, Gussets, Clip Angles, and Hangers: Unless otherwise indicated, metal framing manufacturer's standard products formed from ASTM A653 galvanized, structural quality sheet steel. Thickness and grade shall be determined by application requirements, with a minimum thickness of 20 gage and a minimum yield of 33 ksi.
  - 2. Power-Actuated Fasteners: Low velocity, powder activated, threaded studs complying with ASTM E 1190 and zinc coated in accordance with ASTM B633, Type III, Classification 5.
    - a. Minimum Stud Size: 1/4-20 thread, 0.145 inch dia shank, with 1/4-20 nut and 5/8 inch outside dia washer.
    - b. Stud Material: ASTM A510 1060 or 1065 steel.
    - c. Minimum Core Hardness: 51-56 Rockwell C.
    - d. Minimum Tensile Strength: 285,000 psi.
    - e. Minimum Shear Strength: 182,000 psi.
  - 3. Self-Drilling Fasteners: Cadmium plated, No. 12-14 x 3/4 inch, hex washer head, self-drilling, self-tapping fastener with pilot point.
- C. Galvanizing: Hot-dip process complying with ASTM A653, Coating Designation G 60.
- D. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

### **2.02 FABRICATION**

- A. Fabricate metal framing in accordance with "Approved" or "Approved as Noted" fabrication drawings only.
  - 1. When fabrication drawings are "Approved as Noted", progress fabrication in strict accordance with the marks and notes thereon.
- B. Pre-fabricated panels shall be not more than 1/8 inch out of square within the length of the panel, and shall be in compliance with the tolerances specified in Part 3.



- C. Repairing Galvanizing: Clean shop welded and abraded surfaces, and repair them with a 2 mil (dry) minimum thick coating of galvanizing repair paint. Comply with paint manufacturer's application instructions.
- D. For metal framing indicated to receive insulation, install full width insulation in voids which will be inaccessible after fabrication.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verification of Conditions: Examine surfaces to receive metal framing for defects that will adversely affect the execution and quality of the Work. Do not proceed until unsatisfactory conditions are corrected.

#### **3.02 SURFACE PREPARATION**

- A. Clean surfaces that support the Work of this Section.

#### **3.03 INSTALLATION**

- A. Install metal framing and accessories in accordance with approved shop drawings, and with the metal framing manufacturer's printed installation instructions.
- B. Provide temporary bracing to ensure stability of the structure during construction.
- C. Repairing Galvanizing: Clean field welded and abraded surfaces, and repair them with a 2 mil (dry) minimum thick coating of galvanizing repair paint. Comply with paint manufacturer's application instructions.
- D. Tolerances:
  - 1. Vertical Alignment (Plumbness) of Studs: Within 1/960th (1/8 inch in 10 feet) of the height.
  - 2. Horizontal Alignment (Levelness) of Walls: Within 1/960th (1/8 inch in 10 feet) of their respective lengths.
  - 3. Spacing of Studs: Not more than + 1/8 inch from the designed spacing, providing that the cumulative error does not exceed the requirements of the finishing materials.
- E. For metal framing indicated to receive insulation, install full width insulation in voids which will be inaccessible after erection.



- F. Installation of Runner Tracks:
1. Install continuous bottom and top tracks of size and gage shown. Align track accurately and, unless otherwise shown, attach to supporting structure with power-driven fasteners at 16 inches oc. Install fasteners at corners and ends of tracks.
  2. At track butt joints, securely attach abutting pieces of track to a common structural element, or splice them with a welded butt joint.
- G. Installation of Studs:
1. Install studs of size and gage shown. Space studs 16 inches maximum oc, unless otherwise shown.
  2. Install additional studs at wall corners and intersections, adjacent to wall openings, at wall ends, and at both sides of control joints (if any).
    - a. For gypsum board applications, keep studs not less than 2 inches nor more than 6 inches from inside corners.
  3. Install full length studs, without splices, between runner tracks.
  4. Install axially loaded studs with full bearing against the webs of the bottom and top runner tracks.
  5. Plumb and align studs and, unless otherwise shown, provide positive attachment to runner tracks using self-drilling fasteners or welds on both flanges of studs.
  6. Install lintels at wall openings wider than the stud spacing as shown or scheduled, or if not shown or scheduled, as recommended by the metal framing manufacturer for the opening spans and loads involved.
  7. Unless otherwise shown, install rough framing at openings using full length studs at the ends of lintels and jack studs from the bottom track to the underside of the lintels. Install horizontal header tracks and, where required, horizontal sill tracks. Cut horizontal tracks to length, with split flanges and bent webs for flange overlap and attachment to jack studs with self-drilling fasteners. Install cut to length intermediate studs between jack studs at head and sill sections at the same spacing as full length studs.
  8. At door openings, install rough framing as specified in 7. above. Coordinate jack studs with the types of door frames to be furnished.
    - a. Where solid core wood doors, double doors, or doors weighing more than 50 pounds are shown or scheduled, install 2 full length studs at the ends of lintels instead of one.
  9. Install horizontal bridging in equally spaced rows, not exceeding 3'-4" oc. For each row, install solid bridging between studs at corners, ends of walls, openings, and not exceeding 5'-4" oc, plus continuous 2 inch by 16 gage strapping on both sides of the wall. Attach solid bridging to each flange of the studs with one self-drilling fastener, or make an equivalent welded connection. Attach the continuous strapping to flanges of all solid bridging with four self-drilling fasteners and to flanges of all studs with one self-drilling fastener, or make equivalent welded connections.



10. Install diagonal bracing as shown.

**END OF SECTION**



**SECTION 05 45 03  
ANCHOR BOLTS, EXPANSION ANCHORS AND CONCRETE INSERTS**

**PART 1 - GENERAL**

**1.01 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].

**1.02 Description**

- A. Scope:
1. Contractor shall furnish all labor, materials, equipment and incidentals required to provide anchor bolts, expansion and adhesive anchors and concrete inserts, etc. as shown and specified.
- B. This Section includes all bolts, anchors and inserts required for the Work but not specified under other Sections.
- C. The types of work using the bolts, anchors and inserts include, but are not limited to the following:
1. Handrails.
  2. Hangers and brackets.
  3. Equipment.
  4. Piping.
  5. Tanks.
  6. Electrical, plumbing and HVAC Work.
  7. Wood and plastic fabrications.
  8. Partitions, etc.
  9. Structural steel.



### **1.03 Quality Assurance**

A. Reference Standards: Comply with the applicable provisions and recommendations of the following, except as otherwise shown and specified.

1. ASTM A 307, Carbon Steel Externally and Internally Threaded Standard Fasteners.
2. ASTM A 320, Alloy-Steel Bolting Materials for Low-Temperature Service. B.

Expansion anchors and inserts shall be UL or FM approved.

### **1.04 Submittals**

A. Samples: Submit for approval representative samples of bolts, anchors and inserts as may be requested by the Commissioner. His review will be for type and finish only. Compliance with all other requirements is exclusive responsibility of Contractor.

B. Shop Drawings: Submit for approval the following:

1. Setting drawings and templates for location and installation of anchorage devices.
2. Copies of manufacturer's specifications, load tables, dimension diagrams and installation instructions for the devices.

## **PART 2 - PRODUCTS**

### **2.1 Design Criteria**

A. When the size, length or load carrying capacity of an anchor bolt, expansion anchor, or concrete insert is not shown on the Drawings, provide the size, length and capacity required to carry the design load times a minimum safety factor of four.

B. Determine design loads as follows:

1. For equipment anchors, use the design load recommended by the manufacturer and approved by the Commissioner.
2. For pipe hangers and supports, use one half the total weight of pipe, fittings, valves, accessories and water contained in pipe, between the hanger or support in question and adjacent hangers and supports on both sides.
3. Allowances for vibration are included in the safety factor specified above.



4. Anchors shall develop ultimate shear and pull-out loads of not less than the following values in concrete:

Bolt Diameter (Inches)	Min. Shear (Pounds)	Min Pull-Out Load (Pounds)
1/2	4,500	6,300
5/8	6,900	7,700
3/4	10,500	9,900

## 2.2 Materials

### A. Anchor Bolts:

1. Provide 316 stainless steel anchor bolts complying with ASTM A320, unless otherwise specified on the Contract Drawings.

### B. Expansion Anchors:

1. Provide 316 stainless steel anchors unless otherwise specified on the Contract Drawings. Anchors shall be of the size required for the concrete strength specified. Provide stud type (male thread) or flush type (female thread), as required.
2. Product and Manufacturer: Provide anchors by one of the following:
  - a. Molly Division of USM Corporation.
  - b. Hilti, Incorporated.
  - c. Powers Fasteners.
  - d. Or approved equal.

### C. Adhesive Anchors:

1. Provide 316 stainless steel HVA adhesive anchors unless otherwise specified on the Contract Drawings.
2. Product and Manufacturer:
  - a. Redhead, Ramset, Inc..
  - b. Hilti, Incorporated.



- c. Powers Fasteners.
  - d. Or approved equal.
- D. Concrete Inserts:
  - 1. For piping, grating, etc. provide stainless steel inserts. Provide those recommended by the manufacturer for the required loading.
  - 2. Manufacturer: Provide one of the following inserts:
    - a. ITT Grinnell.
    - b. Hohmann and Barnard, Inc.
    - c. Simpson Strong Tie, Inc.
    - d. Or approved equal.
- E. Powder actuated fasteners and other types of bolts and fasteners not specified herein shall not be used unless approved by Commissioner.
- F. Connection Bolts, Nuts and Washers: Materials shall be as specified in other Sections of the Specifications, or shown on the Drawings. Where materials are not specified or shown on the Drawings, they shall be of Type 304 stainless steel.
- G. Toggle Bolts:
  - 1. Provide stainless steel spring wing toggle bolts of the size required for secure anchorage of individual items, but not less than 1/4" diameter, of length required.
  - 2. Product and Manufacturer: Provide one of the following:
    - a. Pring Wing Toggle Bolts by Ramset Fastening Systems,
    - b. No. 3000 Series, Snapin Toggle Bolts by Star.
    - c. USM Corporation
    - d. Or approved equal.

## **PART 3 - EXECUTION**

### **3.1 Installation**

- A. Drilling equipment used and installation of expansion anchors shall be in accordance with manufacturer's instructions.





- B. Assure that embedded items are protected from damage and are not filled in with concrete.
- C. Expansion anchors may be used for hanging or supporting pipe 2 inches diameter and smaller. Expansion anchors shall not be used for larger pipe unless otherwise shown or approved by the Engineer.
- D. Adhesive anchors shall be used as shown or approved by the Commissioner.
- E. Use concrete inserts for pipe hangers and supports for the pipe size and loading recommended by the insert manufacturer.
- F. Unless otherwise shown or approved by Commissioner conform to following for expansion anchors:
  - 1. Minimum embedment depth in concrete: Mfr. Recommendations.
  - 2. Minimum anchor spacing on centers: Mfr. Recommendations.
  - 3. Minimum distance to edge of concrete: Mfr. Recommendations.
  - 4. Increase dimensions above to develop the full anchor load capacity.
- G. Chromate Coating: All galvanized elements that will be embedded in or will come in contact with concrete mortar will require a chromate coating. This coating should be accomplished in the galvanizing plan by either dipping the galvanized elements in a solution of sodium or potassium dichromate acidified with sulfuric acid or spraying this solution on the galvanized surfaces.
- H. Touch Up Painting: Touch-up galvanized surfaces with galvanizing repair paint applied in accordance with the manufacturer's instructions.

### **3.2 Cleaning**

- A. After embedding concrete is placed, remove protection and clean bolts and inserts.

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## **SECTION 081102**

### **STEEL DOORS AND FRAMES**

#### **PART 1 GENERAL**

##### **1.01 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].

##### **1.02 DESCRIPTION OF WORK**

- A. Steel doors and frames, including borrowed lites; sidelights; vision lites; glass moldings and stops; louvers; panels; hardware reinforcements; and accessories as shown in the contract documents.

##### **1.03 REFERENCES**

- A. ANSI- American National Standard Institute
  - 1. A240: Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels and for General Applications.
  - 2. A250.4-2001 Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcings.
- B. NAAMM National Association of Architectural Metal Manufacturers
  - 1. HMMA 830-1997 Hardware Preparations and Locations for Hollow Metal Doors and Frames.
  - 2. HMMA 831-1997 Recommended Hardware Locations for Hollow Metal Doors and Frames.
  - 3. HMMA 840-1999 Guide Specification for Installation and Storage of Hollow Metal Doors and Frames.
  - 4. HMMA 861-2000 Guide Specification for Commercial Hollow Metal Doors and Frames.
- C. NFPA National Fire Protection Association
  - 1. NFPA 80- 2010 Standard for Fire Doors and other Opening Protectives.

##### **1.04 DEFINITIONS**

- A. Steel Door and Frame Manufacturer: Manufacturer of steel doors and frames regularly engaged in the manufacturing of such products for use in commercial, institutional, educational and other similar applications.
- B. Company Field Advisor(s): An employee of the steel door and frame manufacturer who is certified in writing by the manufacturer to be technically qualified in design, and servicing of products.



- C. Steel Door and Frame Distributor: Distribution Company who regularly engages in the distribution of steel doors and frames of the manufacturer whose doors and frames are submitted for this project.
- D. Certified Installation Supervisor: Designated supervisor/installer, who has a minimum three years experience in steel frame and door installation.

#### **1.05 SUBMITTALS**

##### **A. Submittals Packages**

- 1. Door and Frame Schedule and Shop Drawings Package: Submit as a complete package. Incomplete packages will be returned unreviewed.
  - a. Door and Frame Schedule:
    - 1) Include a Cover Sheet that lists:
      - a) DDC project name, project number, and project address.
      - b) Manufacturer's name, address, and telephone number.
      - c) Distributor's name, address, and telephone number.
      - d) Shop drawing preparer's name, and telephone number and e-mail address.
      - e) Submission date.
    - 2) List by opening
      - a) Door and Frame number and location by building and room name. Use same reference numbers for openings and as those shown on Contract Drawings.
      - b) Door width, height, thickness, type, gage, and options
      - c) Frame type, width, height, jamb depth, gage, anchor type and options.
      - d) Door and frame elevations; head and jamb profiles and details; welding requirements; and reinforcements.
      - e) Fire Rating.
      - f) Glass type.
      - g) Undercut.
      - h) Electric preparations, if any.
      - i) Hardware Set.
      - j) Show dimensioned elevations; construction details of each door including vertical and horizontal edge details; and frame details for each type, including dimensions profiles; locations for finish hardware, including cutouts and reinforcements; gage of reinforcements; details of connections; anchors and accessories; and details of conduit and preparations for electrified door hardware and controls.
    - 3) Product Data: Manufacturer's catalog sheets, specifications, and detailed installation instructions. Highlight products and options pertaining to this Project. Cross out information irrelevant to this Project.



- 4) Manufacturer's Written Certification of Compliance that their products conform to the requirements of the references named in the References Article of this specification section, and as modified by this specification.
  - 5) Samples:
    - a) Frames: Corner sample of each type, 18 x 18 inches, with mortises and reinforcements, factory primed or factory finished, as required.
    - b) Doors: Corner sample of each type construction, 18 x 18 inches, with mortises and reinforcements, factory primed or factory finished, as required.
2. Closeout Submittals: Submit as a complete package.
- a. Operation and Maintenance Manuals: Furnish 2 (two) hard cover three ring binders with project name and number prominently displayed on the front cover and the spine.
  - b. Listing of Manufacturer, address and contact information
  - c. Approved Door and Frame Submittal including shop drawings and product data sheets
  - d. Manufacturer's dated warranty for this specific project identified by Facility, DDC project number, and manufacturer's order number.
  - e. Certification: Written certification from the Company Field Advisor that their products are installed according to manufacturer's printed installation instructions, and are operating properly.

## **1.06 QUALITY ASSURANCE**

- A. Uniformity and single source responsibility:
  1. Provide steel doors and frames from a single source manufacturer who specializes in this type of work.
- B. Certification of Compliance: A statement, written on steel door and frame manufacturer's letterhead, that certifies their products, submitted for this Project, have been tested and comply with references named in the References Article of this specification section, and as modified by other requirements this specification.
- C. Construction Verification: In order to determine if the products furnished comply with the specifications, the Commissioner may choose one or more doors and frames for examination. The examination may involve cutting doors to expose the internal construction to inspect reinforcements, cores, welds and other construction details.
- D. Field Measurements: Verify existing openings by field measurements before fabrication and indicate measurements on shop drawings.
- E. Pre-Submittal Conference: Before the steel door and frame submittals are written, the contractor, the steel door and frame distributor, the steel door and



frame shop drawing preparer, and the steel door and frame designer shall attend a conference to discuss the contract requirements for the steel door and frame submittal package, including but not limited to, quality assurance items to be submitted, the cover sheet, index, page numbering, schedule formatting, product nomenclature, installation notes, preparations for electric hardware, and product data sheets.

- F. **Pre-installation Conference:** When steel frames are on site, and before steel frame installation begins, the Commissioner's Representative shall call a conference at the site to review the approved Steel Door and Frame Submittal, approved Finish Hardware Submittals, and proper installation procedures for the Work as well as:
1. **Pre-installation inspection of Doors and Frames**
    - a. Use and coordination of approved Steel Door and Frame submittals with approved Finish Hardware Submittals in the pre-installation inspection process
    - b. Reading and understanding manufacturer's Door and Frame tags
    - c. Inspection and verification of labeling and label placement
      - 1) Specified fire labels (attached metal labels) on doors and frames,
      - 2) Label locations
      - 3) Label legibility
    - d. Inspection and verification of proper welding of frames
    - e. Inspection and verification of hardware reinforcement and preparations in frame head and jambs.
    - f. Inspection and verification of required anchors and fasteners.
    - g. Inspection and verification of glass kit preparations in doors
    - h. Inspection and verification of Electric hardware preparation in frames and doors
  2. Review of maximum allowable clearances between frames and doors; doors and floor; and meeting stiles of doors, and verification methods.
  3. Verification of plumb, square and level frame installation with jamb rabbets parallel to one another.
  4. Review of proper frame installation tools.
- The contractor, frame installers, certified Company Field Advisor; and DDC inspector shall attend the conference. Facility personnel may attend.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver doors and frames in heavy paper cartons or other protective packaging. Remove any plastic protective wrap from the package.
- B. Store doors and frames under cover, in a dry area, on raised platforms in vertical position with minimum 4 inch blocking between units to allow air circulation.
- C. Clearly label packaging, and doors and frames, for identification and installation location.



## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Hot-Rolled Steel Sheets and Strip: Commercial quality carbon steel, pickled and oiled, complying with ASTM A1011/A1011M-04a 2004.
- B. Cold-Rolled Steel Sheets: Commercial quality carbon steel complying with ASTM A1008/A1008M-04b 2004.
- C. Galvanized Steel Sheets: Zinc Iron Alloy-Coated carbon steel sheets of commercial quality complying with ASTM A 653/653M, with A 60 zinc coating.
- D. Anchors and Supports: Fabricate of not less than 16 gage sheet steel unless otherwise indicated.
  - 1. Galvanized Units: Galvanize anchors and supports to be used with galvanized frames, complying with ASTM A 153, Class B.
- E. Anchorage Devices, Bolts, and Other Fasteners: Manufacturer's standard units unless otherwise indicated.
  - 1. Galvanized Units: Galvanize items and comply with ASTM A 153, Class C or D as applicable.
- F. Solid Block polyurethane core with minimum .07 U Factor.
- G. Polystyrene slab with a minimum .24 U factor.
- H. Extruded polystyrene rigid insulation.

### **2.02 DOORS**

- A. General:
  - 1. Design and Thickness: 2 outer stretcher-leveled steel sheets not less than 14 gage, seamless, hollow construction, 1-3/4 inches thick.
  - 2. Construct doors with smooth flush surfaces without visible joints or seams on exposed faces or stile edges, except around glass and louver panels. Continuously MIG, ARC or laser weld vertical edges full height of door, grind smooth, and dress to achieve seamless edge. Tack welded, putty filled edges are not acceptable.
  - 3. Reinforce vertical edges by a continuous steel channel not less than 14ga extending the full height of door.
  - 4. Close top and bottom of horizontal edges with 14 gage steel channel spot welded to the inside of the face sheets a maximum of 4 inches on center.
  - 5. Continuously weld the closing end channels to the vertical edge reinforcing channel at all four corners producing a fully welded exterior.
  - 6. Provide minimum 16 gage flush steel top and bottoms caps, notched at both ends to fit hinge and lock channels, installed with a minimum of 6 welds per cap. Grind welds, body fill and finish smooth.
  - 7. Sound Deadening (ASTM E 90): Minimum Sound Transmission Class of 25.
  - 8. Door Edges: Bevel lock stile edge of single acting hinged doors 1/8 inch in 2 inches. "V" bevel meeting stiles of pairs of doors, except at double egress locations where meeting stiles are parallel.



9. Glazing Stops and Beads: Fixed steel stops, formed integral with door on non-threat side of doors. Removable steel beads, of not less than 14 gage formed steel sheet or solid bar stock, on other side of doors secured with torx head machine screws. Form corners with butted hairline joints. Coordinate width of rabbet between fixed stop and removable bead, and depth of rabbet, with type of glass and glazing required.
- B. Fire Rated Assemblies: Wherever a fire resistance classification is shown or scheduled for steel doors and frames; provide fire rated units that have been tested as fire door assemblies, and comply with National Fire Protection Association (NFPA) Standard No. 80 and these specifications.
  1. Identify each door and frame with a factory applied metal UL, FM, or WHI label.
  2. Label shall remain legible, and shall not be obscured by prime painting or finish painting.
  3. Indicate the applicable fire rating on the door label.
  4. Locate labels on the hinge edge of door and jamb rabbet of frame.
  5. Where continuous hinges are specified, apply labels on the header rabbet of frame and on top exposed edge of door. Locate labels as close to hinge edge as possible.
  6. At the manufacturer's and/or contractor's expense, retain a third party inspector to recertify fire rated doors and frames, and to replace primed and finish painted labels.
- C. Oversize Assemblies Requiring Fire Rating: Whenever fire rated assemblies are larger than size limitations established by NFPA and testing laboratories, provide the manufacturer's certification, by affixing a metal label construction label, that the assemblies have been constructed with materials and methods equivalent to requirements for fire rated construction.
- D. Exterior Doors:
  1. Fabricate exterior doors with 2 outer stretcher-leveled, A60 galvanized steel sheets.
  2. Reinforce inside of doors with the following:
    - a. Solid block polyurethane core, with a minimum .07 U factor, that fills the entire door cavity and is chemically bonded to all surfaces.
- E. Interior Doors:
  1. Fabricate doors with 2 outer stretcher-leveled, A60 galvanized steel sheets.
  2. Reinforce inside of doors with polystyrene slab with a minimum .24 U factor, permanently bonded to inside of each face sheet.

## **2.03 FRAMES**

- A. General:
  1. Furnish steel frames for doors, transoms, sidelites, borrowed lites, and other openings, as shown, of size and profile as indicated.
  2. Construction: Full welded unit construction, with corners mitered and continuously welded full depth and width of frame, unless otherwise specified or shown. Knock-down type frames will not be accepted.





- a. Fixed Stops: Integral 5/8 inch stop unless otherwise shown.
  - b. Removable Beads: Removable steel beads secured with machine screws. Form corners with butted hairline joints.
3. Do not drill frames for silencers.
4. Weld steel shipping spreaders to the underside of the jamb legs, requiring removal of the spreaders prior to frame installation.
- B. Interior and Exterior Frames: Form of hot-rolled steel sheets, not less than 14 gage, zinc alloy iron coated A60 galvanized.
- C. Mullions and Transom Bars:
  1. Furnish closed or tubular mullions and transom bars where shown. Fasten mullions and transom bars at crossings and to jambs by butt welding. Reinforce joints between frame members with concealed clip angles or sleeves of same metal and thickness as frame.
  2. Where installed in masonry, leave vertical mullions in frames open at the top so they can be filled with grout.
- D. Wall Anchors: Unless otherwise specified or shown, formed of not less than 16 gage galvanized steel.
  1. Masonry Construction: Adjustable, corrugated or perforated T-shaped to suit frame size with leg not less than 2 inches wide by 10 inches long. Furnish at least 3 anchors per jamb up to 7'6" jamb height; 4 anchors per jamb up to 8 foot jamb height; one additional anchor per jamb for each 24 inches or fraction thereof over 8 feet high.
  2. Steel Stud Construction: Weld-in type welded to back of frame unless otherwise indicated or approved. Furnish at least 4 anchors per jamb up to 7'-6" jamb height; 5 anchors per jamb to 8 foot jamb height; one additional anchor per jamb for each 24 inches or fraction thereof over 8 feet high.
  3. Wood Stud Construction: Weld-in type welded to back of frame unless otherwise indicated or approved. Furnish at least 3 anchors per jamb.
  4. Anchors for Completed Openings: Anchorage devices designed to secure frame to in-place concrete or in-place masonry construction, as applicable. Furnish at least 5 anchors per jamb up to 7'-6" jamb height; 6 anchors per jamb to 8 foot jamb height; one additional anchor per jamb for each 12 inches or fraction thereof over 8 feet high.
- E. Floor Anchors: Furnish floor anchor for each jamb and mullion which extends to floor, formed of not less than 16 gage steel, with 2 holes to receive fasteners, welded to bottom of jamb or mullion, and galvanized if used with galvanized frames

## **2.04 FABRICATION**

- A. Fabricate steel door and frame units to be rigid, neat in appearance, and free from warp, buckle and defects. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. To assure proper assembly at Project



site, clearly identify items that cannot be permanently factory-assembled before shipment.

- B. Exposed Fasteners: Countersunk flat, or oval head torx center pin screws and bolts. Unless otherwise indicated, locate fasteners 2 inches from ends of members and not more than 12 inches apart.
- C. Finish Hardware Reinforcements:
  - 1. Minimum 10 gage continuous reinforcement for continuous hinges.
  - 2. Install 7 gage reinforcement for butt hinges, or hinge reinforcement in door edge may be one piece 12 gage channel full door height with extruded hinge screw holes having an average minimum thread pull-out strength of 1600 pounds per hole.
  - 3. Minimum 12 gage reinforcement for other hardware.
  - 4. Weld 14 gage steel tongues, 1-1/2 inches high, inside lock mortise to keep lock body centered in door.
  - 5. Closer reinforce doors and provide full profile closer reinforcement in frames for full width of opening, whether or not closers are specified.
- D. Finish Hardware Preparation:
  - 1. Factory prepare doors and frames to receive mortised and concealed hardware, including cutouts; reinforcing; drilling and tapping, in accordance with approved Finish Hardware Schedule and templates furnished by hardware manufacturers.
  - 2. Factory reinforced doors and frames to receive surface applied hardware. Drill and tap for surface applied hardware at project site.
- E. Finish Hardware Locations: Locate hardware reinforcements and mortises so hardware locations comply with requirements of HMMA 831, "Recommended Hardware Locations for Custom Hollow Metal Doors and Frames", and as follows:
  - 1. Knobs, Levers, Crescents : Centerline 3'2" from finished floor.
  - 2. Mortise Deadlocks: Centerline not to exceed 48" above finished floor.
- F. Clearances: Fabricate doors for their respective frames within the following clearances:
  - 1. Jambs and Head: 3/32 to 1/8 inch.
  - 2. Meeting Edges of Pairs: 1/8 to 3/16 inch.
  - 3. Bottom (no threshold): 3/4 inch, maximum to finished surface.
  - 4. Bottom (at threshold): 3/8 inch, maximum to top of threshold or carpet.
  - 5. Fire Rated Doors: Comply with clearances specified in NFPA Standard No.80.
  - 6. Measure door clearances from stile edge to jamb.
- G. Factory Prefinish Painting:
  - 1. Chemically wash, rinse, and dry exposed and concealed surfaces of fabricated units.
  - 2. Apply one coat of primer with vinyl binder to surfaces and oven-bake units.
  - 3. Units shall be capable of passing the following tests:
    - a. Salt Spray Test complying with ASTM B 117-97 for 120 continuous hours.



- b. Water Fog Test complying with ASTM D 1735-97 for 240 continuous hours.
- 4. Factory pre-finish doors and frames where indicated on the Door Schedule.
  - a. Provide custom color(s) as selected by the Commissioner's Representative.
  - b. Provide 3 (three) touch-up paint kits for field repair. Turn over remaining paint to the City of NY.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verification of Conditions: Examine substrates, areas and conditions, with installer present under which frames are to be installed for defects that will adversely affect execution and quality of Work. Do not proceed until unsatisfactory conditions are corrected.

### **3.02 PREPARATION**

- A. Prior to installation adjust and securely brace door frames for squareness, alignment, twist, and plumb to the following tolerances:
  - 1. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
  - 2. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
  - 3. Twist: Plus or minus 1/16", measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
  - 4. Plumbness: Plus or minus 1/16 inch, measured at jamb face on a perpendicular line from head to floor.
- B. Drill and tap doors and frames to receive non-templated mortised and surface mounted hardware.

### **3.03 INSTALLATION**

- A. General: Install steel doors and frames plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
  - 1. Frames: Install frame of size and profile indicated. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set.
    - a) Remove temporary braces necessary for installation only after frames have been properly set and secured.
    - b) Check plumb, squareness, and twist of frames as walls are constructed. Adjust as necessary to comply with installation tolerances.
  - 2. Installation Tolerances: Adjust door frames for squareness, alignment, twist, and plumb to the following tolerances:
    - a) Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.



- b) Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
  - c) Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
  - d) Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.
- B. Doors: Fit non-fire-rated doors accurately in frames with the following clearances:
  - 1. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
  - 2. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
  - 3. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum 3/4 inch.

### **3.04 ADJUSTING AND CLEANING**

- A. Final Adjustments:
  - 1. Check and readjust operating hardware items immediately before final inspection.
  - 2. Leave work in complete and proper operating condition.
  - 3. Remove and replace defective work including doors or frames that are warped, bowed, or otherwise unacceptable.
- B. Clean foreign materials off steel doors and frames immediately after installation.

### **3.05 FINAL INSPECTION**

- A. Upon completion of the project, the Commissioner's representative will schedule a final inspection to verify doors and frames are properly installed and adjusted. The contractor, door and frame installer, and design representative will attend.
- B. Upon verification, the Commissioner will certify in writing components are properly installed and adjusted within referenced tolerances in accordance with this specification. Include this certification in the Close-out Submittals.

**END OF SECTION**



**SECTION 087100**

**FINISH HARDWARE**

**PART 1 GENERAL**

**1.01 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].

**1.02 REFERENCES**

- A. NFPA 80 Fire Doors and Windows (2007).
- B. NFPA 101 Life Safety Code (2006).
- C. Building Code of New York State (2010).
- D. ICC/ANSI A117.1-2003 Accessible and Usable Buildings and Facilities.
- E. ANSI/BHMA Standard A156.1 Butts and Hinges (2006).
- F. ANSI/BHMA Standard A156.4 Door Controls – Closers (2008).
- G. ANSI/BHMA Standard A156.6 Architectural Door Trim (2005).
- H. ANSI/BHMA Standard A156.7 Template Hinge Dimensions (2009).
- I. ANSI/BHMA Standard A156.8 Door Controls – Overhead Stops and Holders (2005).
- J. ANSI/BHMA Standard A156.13 Mortise Locks and Latches Series 1000 (2005).
- K. ANSI/BHMA Standard A156.16 Auxiliary Hardware (2008).
- L. ANSI/BHMA Standard A156.18 Materials and Finishes (2006).
- M. ANSI/BHMA Standard A156.22 Door Gasketing Systems (2005).
- N. ANSI/BHMA Standard A156.26 Continuous Hinges (2006).
- O. DHI - Door and Hardware Institute.



- P. NAAM Standard HMMA 800-96- Hollow Metal Manufacturers Association.
- Q. NAAM Standard HMMA 831-97 Recommended Hardware Locations for Custom Hollow Metal Doors and Frames.
- R. 2010 Standards for State and Local Government Facilities: Title II.

### **1.03 DEFINITIONS**

- A. Architectural Hardware Consultant (AHC): A Door and Hardware Institute certified expert in complex architectural openings requiring advanced knowledge of model building codes and safety standards, ADA requirements, access control knowledge and installation expertise.
- B. Architectural Hardware Distributor: A company that regularly purchases architectural hardware from manufacturers and specializes in the sale, service and support of that hardware to contractors and/or end users.
- C. Company Field Advisor(s): Hardware manufacturers' representatives who are certified in writing by manufacturer to be technically qualified in design, and servicing of products.
- D. Installation Supervisor: Designated supervisor/installer, who has a minimum three years experience in finish hardware installation, and is qualified and responsible to ensure approved finish hardware is installed, adjusted, and operates properly.

### **1.04 SUBMITTALS**

- A. Submittal Package Cover Sheets: The Hardware Distributor shall provide a cover sheet, which identifies each package by:
  - 1. DDC project number.
  - 2. Project name.
  - 3. Facility name and location.
  - 4. Submittal Package name.
  - 5. Specification section name and number.
  - 6. Construction Contractor's company name, address, e-mail address, and telephone number.
  - 7. Finish Hardware Distributor's company name, address, e-mail address, and telephone number.
  - 8. Certified Architectural Hardware Consultant's name, company name, address, e-mail address, and telephone number.
  - 9. Submittal Date.
- B. Submittal Packages
  - 1. Finish Hardware Package:



- a. Finish Hardware Schedule: Use vertical format and indicate finish hardware items, both mechanical and electrical in one document, required to complete Work of this section. Submit Hardware Schedule that includes complete hardware sets for each door and frame shown on Door Schedule.
- 1) Preface schedule with following:
    - a) Certified Architectural Hardware Consultant's statement of preparation of/or certification of, Finish Hardware Schedule.
    - b) Index.
    - c) List of manufacturers.
    - d) List of finishes.
    - e) Explanation of abbreviations.
    - f) Keying instructions and key schedule.
  - 2) Create hardware groups, each group consisting of similar doors and hardware. Do not combine labeled and non-labeled openings. Do not combine doors and frames with dissimilar door sizes and/or materials.
  - 3) For each opening include the following:
    - a) Door and frame materials and dimensions.
    - b) Fire rating.
    - c) Door number, location and handing.
    - d) Degree of opening required for closer and/or overhead stop.
    - e) Installation and detailing notes.
  - 4) Under each group heading, list hardware items in detail, required for ordering. For each hardware item include:
    - a) Type (Hinges).
    - b) Quantity (Hinges 3ea).
    - c) Manufacturers' name (Hinges 3ea Stanley or approved equal).
    - d) Catalog number (Hinges 3ea Stanley FBB199).
    - e) Size (Hinges 3ea Stanley FBB199 4 ½ x 4 ½ ).
    - f) Options or accessories (Hinges HTFBB199 4 ½ x 4 ½ ).
    - g) Finish (Hinges HTFBB199 4 ½ x 4 ½ x 630).
    - h) Fasteners (Hinges HTFBB199 4 ½ x 4 ½ x 630 x torx with center security pin).
    - i) Indicate location of protection plates: Push side or pull side.
    - j) Installation Notes, as written in this section, for each hardware group.
    - k) All above products shall be as specified or approved equal.
  - 5) Use a separate hardware group in Hardware Schedule that lists attic stock hardware items, key cabinets, key control system, special tools required to install hardware, lubricants, and Operations and Maintenance Manuals.



- b. Product Data: Furnish six copies of manufacturers' catalog sheets, specifications, sizing charts, and installation instructions, for each item specified. Highlight information pertaining specifically to product (s) submitted.
  - c. Submit samples as requested.
- 2. Closeout Submittals Package: Submit as a complete package.
  - a. Operation and Maintenance Manuals: Furnish 2 hardcover three ring binders with the project name and number displayed on the front cover and spine. Include:
    - 1) List of Manufacturers.
    - 2) Approved Finish Hardware Schedule.
    - 3) Approved Manufacturers' Product Data Sheets.
    - 4) Manufacturer's operation, installation, maintenance, and repair instructions for each type of hardware furnished.
    - 5) Templates for kind of hardware furnished.
    - 6) Parts List for each type of finish hardware furnished.
    - 7) Manufacturers' dated written warranty for each type of finish hardware furnished.
    - 8) Certifications: Written certification from Company Field Advisors that their products are installed according to manufacturers' printed installation instructions, are operating properly, and manufacturers' written warranty will be in effect upon physical completion of the Work.
    - 9) Special Tools: List of special tools required to install hardware, and their purpose.
  - b. Special Tools:
    - 1) At conclusion of finish hardware installation, turn over to Commissioner 2 of each special tool required to install hardware together with a list of these tools and their purpose.

#### **1.05 TEMPLATES**

- A. After receipt of approved submittals, furnish templates to affected trades, to enable fabricators to make provision for finish hardware without delaying the Work of the Project.

#### **1.06 DELIVERY AND STORAGE**

- A. Coordinate delivery to avoid delay.
- B. Clearly label each item for identification and installation location as it corresponds to the approved Finish Hardware Schedule and subsequent information bulletins.





- C. Deliver hardware to the jobsite in the manufacturers' original packages complete with fasteners, parts, installation instructions, and templates required for proper installation.
- D. Inventory hardware at jobsite to identify shortages or backorders. Resolve delivery shortages and damaged items prior to installing hardware.
- E. Store finish hardware where directed by Commissioner. Provide locked, dry storage for finish hardware.

#### **1.07 QUALITY ASSURANCE**

- A. Hardware Distributor's Qualification:
  - 1. Hardware Distributor who has been in the business of furnishing, and/ or installing finish hardware for a minimum of three years.
  - 2. Hardware Distributor shall have the Architectural Hardware Consultant prepare or certify the Finish Hardware Submittal meets specification requirements, and the schedule is written accurately and in accordance with DHI recommendations, and requirements of this specification.
- B. Company Field Advisors: Employ advisor(s) for continuous hinges, door bolts, mortise locksets, surface overhead stops, door closers, and gaskets.
- C. Installation Supervisor: Employ a qualified Installation Supervisor who will be responsible to ensure approved finished hardware is installed, adjusted and operates properly.
- D. Installers: Employ experienced finish hardware installers who have been regularly employed by a Company installing finish hardware for a minimum of 3 years.
- E. Pre-submittal Conference: Before Finish Hardware Submittals are written for submission, the Commissioner will call a teleconference to review Finish Hardware Submittal requirements including but not limited to format, cover sheet, headings, hardware sets, level of detail, installation notes, description of operation, keying, and product data sheets. The Contractor, the Finish Hardware Distributor, the Finish Hardware Detailer, and consulting hardware designer, and Commissioner shall attend. The Commissioner shall conduct the conference.
- F. On Site Pre-Installation Conference: Before finish hardware installation begins, the Commissioner will call a conference at the site to review Finish Hardware Specifications, approved Finish Hardware Submittals, and to discuss requirements for the Work including:
  - 1. Hardware delivery and storage.
  - 2. Hardware labeling by door number.
  - 3. Hardware locations.
  - 4. Potential location conflicts.



5. Hardware installation sequence and responsibility.
  6. Required accessories and fasteners.
  7. Continuous hinge installation.
  8. Surface overhead stops and closer template and adjustments.
  9. Special tools and maintenance items.
  10. Hardware Closeout requirements.
  11. Hardware Warranties.
- G. Pre-installation Conference Attendance: The Construction Contractor, Company Field Advisors, authorized Finish Hardware Installers, and the Finish Hardware Distributor's Architectural Hardware Consultant shall attend the conference. Commissioner conducts the meeting. Commissioner's personnel may attend. The Company Field Advisors will present installation instruction and advice.
- H. Pre-Benchmark-Construction Meeting: Prior to the construction of the mock-up, a meeting will be held at the site to review the requirements, and discuss the intent of the mock-up. The meeting will be scheduled by the Commissioner and conducted by the Hardware Designer. The meeting shall be attended by the Commissioner, the Hardware Designer, the Contractor's onsite foreman, the person supervising this phase of the Work (if different), and the person (people) who will be performing the work.
- I. Uniformity of Hardware and Single Source Responsibility: For each kind of hardware provide product(s) of a single manufacturer.
- J. Size Variations: Manufacturers' products may vary slightly from sizes specified except where minimum size or thickness is specified.

#### **1.08 WARRANTY**

- A. Manufacturer's Warranty: Ten year minimum warranty for door closers.
- B. Manufacturer's Warranty: Three year minimum for locksets.

#### **1.09 GUARANTEE SERVICE**

- A. Special Tools: At the conclusion of finish hardware installation, turn over to the Commissioner 2 sets of each special tools required for proper installation and adjustment of hardware, together with a list of these tools and their purpose.
- B. Lubricants: Provide manufacturer's recommended lubricants for locksets and closers sufficient for 1 year of maintenance. Turn over to Commissioner's Representative.



## **PART 2 PRODUCTS**

### **2.01 ACCESSORIES**

- A. Provide brackets, plates, arms, spacers, and special templates to mount door closers in combination with overhead stops and coordinators, on narrow top rails and for special ceiling and jamb conditions.
- B. Provide curved lip strikes, with wrought boxes, specific to individual lock functions. Universal strikes that fit a variety of lock functions are not acceptable.

### **2.02 FASTENINGS**

- A. Provide fasteners that harmonize with finish hardware material and finish.
- B. Provide torx center pin security fasteners for exposed hardware, including full mortise hinges.
- C. Provide machine screws for hardware secured to metal; and machine screws and metal expansion shields for attachment to masonry substrates. Self-tapping or self-drilling screws are not acceptable.
- D. Provide undercut shallow head torx center pin security fasteners where necessary for proper seating.
- E. Attach door closers and overhead stops with sex bolts.

### **2.03 MATERIALS AND FINISHES**

- A. General: Requirements for design, grade, function, finish, size, and other distinctive qualities of each type of finish hardware are indicated in this section and in the Hardware Groups.
- B. Continuous Hinges
  - 1. Full height barrel-type manufactured from 14-gauge 304 stainless steel.
  - 2. .25" diameter stainless steel pins.
  - 3. Provide hinges without covers.
- C. Locks, Latches and Bolts
  - 1. Comply with UL requirements for throw of bolts and latch bolts on rated fire openings.
  - 2. Provide 3/4" minimum throw on other latch bolts.
  - 3. Provide 1" minimum throw deadbolts.
- D. Closers and Door Control Devices
  - 1. Closer bodies: Provide closer bodies with the same hole template pattern regardless of type or application.



2. Closer arms: Non-handed forged steel.
3. Closer size: Provide sized closers.
4. Provide all-weather fluid to eliminate seasonal adjustment of closer speed.
5. Powder coat closer body, arm, and adapter plate or pre-treat closer body, arm, and adapter plate with rust-inhibiting coating before painted finish is applied.

## **2.04 FINISH HARDWARE**

### **A. Group 1:**

1. Continuous Hinge: 1ea – Zero 919 STST x HT x marked “Top” x torx with center security pin x 630 or approved equal.
2. Mortise Lockset: 1ea - Corbin Russwin ML2022 x YWM x curved lip strike x wrought box x torx with center security pin x 630 or approved equal.
3. Mortise Lock Cylinder: 2ea - Compatible with specified lock above x 626 or approved equal.
4. Closer: 1ea – LCN 4513T x SRI x thru-bolt x torx with center security pin x AL or approved equal.
5. Kick Plate: 1ea – Rockwood K1062 10” x 1 ½” LDW x B4E x torx with center security pin x 630 or approved equal.
6. Mop Plate: 1ea – Rockwood K1062 4” x ½” LDW x B4E x torx with center security pin x 630 or approved equal.
7. Overhead Stop: 1ea – Glynn Johnson 814S x thru-bolt x torx with center security pin x 630 or approved equal.

## **2.05 KEYING**

### **A. Continue existing key system established for City of NY.**

1. Stamp key symbol on one side of key, and “Do Not Duplicate” on other side of key.
3. Furnish one copy of factory bitting list to facility.
4. Factory key cylinders.
5. Furnish 3 cut keys for each master key.
6. Furnish 7 cut keys for each keyed lockset.
7. These cut key quantities are for bidding purposes only. Actual number of cut keys required will be determined at keying meeting.
8. When lockset and cylinder are by different manufacturers, identify and furnish correct cylinder cam to operate lockset.
9. Provide compression rings and spacers to achieve proper spacing relationship between cylinder and face of door.

### **B. Keying Conference**



1. Immediately following contract award, Commissioner will schedule a keying conference to develop a written key schedule that reflects Facility's specific keying requirements.  
Facility Representative(s), Hardware Distributor, Commissioner will attend.
2. Incorporate this schedule in Finish Hardware Submittals for approval.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine doors and frames and related items for conditions such as, but not limited to, incorrect handing, hardware preparation, misaligned lock and strike preparations, that would prevent proper application of finish hardware. Do not proceed until defects are corrected.
- B. Report conditions or hardware applications that are incorrect to the Commissioner.

### **3.02 INSTALLATION**

- A. Do not proceed with installation of finish hardware prior to attending referenced pre-installation conference.
- B. Installation Sequence: Use proper installation sequence, i.e., install coordinators, and overhead stops and holders before surface mounted door closers.
- C. Install hardware in accordance with manufacturer's printed installation instructions, and adjust for smooth operation, free of sticking, binding or rattling.
  1. Template surface overhead stops and holders for proper operation
  2. Template and adjust closers for proper operation.
- D. Use proper tools and methods to prevent scratches, burrs or other defacement.
- E. Threshold Installation:
  1. Drill holes 3 inches from each end of threshold and intermediate holes 12 inches maximum o.c. for required fasteners. Prepare holes for countersunk fasteners.
  2. Level and align thresholds with frames and doors. Where required, use non-corrosive shims.
  3. Exterior Doors: Set thresholds in a solid bed of Type 3 sealant.
  4. Secure thresholds to substrate with countersunk fasteners.
- F. Door Bottom Installation:
  1. Mount sweep type door bottom protection/drip caps on exterior side of doors.



2. Before mounting apply Type 2 sealant on the back side of bearing surface. Secure to door with required fasteners.
- G. Gasket Installation:
1. Install continuous stripping at each opening without unnecessary interruptions.
  2. Where fasteners are required, secure fasteners for stripping and seals so they will not work loose during door operation. Exposed heads of fasteners shall be free of sharp edges.
  3. Coordinate meeting stile gasket with hardware before installation.
  4. Install units plumb and level at the optimum location to maintain a permanent effective seal.
- H. After installation, cover and protect hardware to prevent damage during remaining construction. Remove protection upon completion of construction.

### **3.03 FIELD QUALITY CONTROL**

- A. Post Installation Review: After hardware is adjusted for proper operation, Commissioner's Representative will hold a Post-Installation Review with the Contractor, Commissioner, Company Field Advisors, Hardware Distributor and Hardware Installers.
1. Physically inspect to verify proper application, installation, adjustment and operation of finish hardware, and in particular that:
    - a) Latches engage freely without binding. Filing of strike plates to relieve latch bind is not acceptable.
    - b) Closers are adjusted for proper spring power; sweep speed, latching speed; and hydraulic back check.
    - c) Locations and proper attachment of installed protective hardware are as specified.
    - d) There is no field modification of fasteners.
    - e) Damaged fasteners are replaced.
  2. Defective hardware is repaired or replaced.
  3. Hardware is to be left clean and free from disfigurement.
- B. Turn referenced Operations and Maintenance Manuals over to City of NY through Commissioner's Representative.

**END OF SECTION**



## **SECTION 092116**

### **GYPSUM BOARD SYSTEMS**

#### **PART 1 GENERAL**

##### **1.01 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].

##### **1.02 DEFINITIONS**

- A. Sheet Steel Gages: US Standard.
- B. Gypsum Board Terminology: ASTM C 11 - Standard Terminology Relating to Gypsum and Related Building Materials and Systems.

##### **1.03 SUBMITTALS**

- A. Product Data: Catalog sheets, specifications, and installation instructions for each item specified.

##### **1.04 QUALITY ASSURANCE**

- A. Fire Resistance Rated Applications: Provide UL listed or ASTM E 119 tested materials, accessories, and application procedures to comply with the rating, UL Design Number, or Gypsum Association File Number indicated.
- C. Single Source Responsibility: Obtain components for gypsum board shaft-wall assemblies from a single manufacturer for each type of assembly required.

##### **1.05 DELIVERY, STORAGE AND HANDLING**

- A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer.
- B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Stack gypsum panels flat to prevent sagging.



## **1.06 PROJECT CONDITIONS**

- A. Environmental Requirements: Comply with gypsum board manufacturer's printed temperature and ventilation requirements during application and finishing. Ventilate installation areas to relieve excess moisture.

## **1.07 RELATED WORK SPECIFIED ELSEWHERE**

- A. Cold Formed (Load Bearing) Metal Framing: Section 054000

## **PART 2 PRODUCTS**

### **2.01 FRAMING**

- A. Studs, Tracks, and Furring: ASTM C 645; 25 gage (minimum base metal thickness 0.0179 inch) galvanized steel, with additional framing members, reinforcing, accessories, and anchors necessary for the complete framing system.
  - 1. Deep-Leg Deflection Track: ASTM C 645 top runner with 2 inch deep flanges.
  - 2. Hat-Shaped, Rigid Furring Channels: ASTM C 645; 25 gage (minimum base metal thickness 0.0179 inch) galvanized steel.
  - 3. Resilient Furring Channels: Steel furring members designed to reduce sound transmission.

### **2.02 GYPSUM BOARD**

- A. Standard Gypsum Board: ASTM C 1396; long edges as follows:
  - 1. Long Edges: Tapered.
- B. Fire Resistant Gypsum Board: ASTM C 1396; Type X, UL listed and bearing listing marking; long edges as follows:
  - 1. Long Edges: Tapered.
- C. Shaft-Wall Assemblies: Materials and components listed in manufacturer's published product literature for gypsum board shaft-wall assemblies required.
  - 1. Steel Framing: ASTM C 645, of profile, size and base metal thickness to produce assemblies complying with indicated or required fire rating and structural properties.
  - 2. Gypsum Liner Panels: Manufacturer's standard or recommended panels as required for the specific fire-resistant rated gypsum board shaft-wall assemblies indicated, with moisture resistant paper facings.
  - 3. Gypsum Board: ASTM C 1396, type as required by fire-resistant assembly indicated; long edges tapered.





## **2.03 FASTENERS**

- A. Steel Drill Screws: ASTM C 1002; gypsum board manufacturer's recommended types and sizes for substrates involved.
- B. Laminating Adhesive: Gypsum board manufacturer's recommended type for substrates involved.
- C. Expansion Anchors: Anchor bodies AISI 1018 or 12L14, of dimensions indicated; with nuts, ASTM A 563; and flat washers. Expansion sleeves AISI 1010, of dimensions indicated; with bolts, SAE Grade 5; and flat washers.
- D. Toggle Bolts: Tumble wing type.
  - 1. Wing Body: AISI 1008-1010 or equivalent cold rolled steel.
  - 2. Trunnion Nut: 1/4 inch thru 3/8 inch AISI 1010 steel; 1/2 inch Zamac alloy.
  - 3. Screw: Carbon steel.
- E. Self Threading Masonry Screws: Zinc plated; Tapcon Fasteners by ITW Buildex 1349 West Bryn Mawr Ave. Itasca, IL 60143, (800) 284-5339.

## **2.04 TRIM**

- A. Interior Trim: ASTM C 1047.
  - 1. Material: Galvanized steel or extruded vinyl.
  - 2. Shapes:
    - a. Cornerbead: Use at outside corners.
    - b. Bullnose Bead: Use where indicated.
    - c. LC-Bead: J-Shaped, exposed long flange receives joint compound. Use at exposed panel edges.
    - d. L-Bead: L-shaped, exposed long leg receives joint compound with tear away bead. Use where gypsum board abuts or intersects dissimilar material.
    - e. U-Bead: J-shaped, exposed short flange does not receive joint compound. Use where indicated.
    - f. Expansion (Control) Joint: Use where indicated.

## **2.05 JOINT TREATMENT MATERIALS**

- A. Joint Tapes: ASTM C 475; plain or perforated.
- B. Joint Compound: ASTM C 475; gypsum board manufacturer's recommended dry powder or ready-mixed, either of the following:
  - 1. One Compound Treatment: One compound for both bedding and finishing joints.



2. Two Compound Treatment: Compatible joint compounds; one compound for bedding and the other compound for finishing joints.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Examine substrates to which gypsum board system attaches or abuts, preset steel door frames, cast in anchors, and structural framing, with installer present for compliance with requirements for installation tolerances and other conditions affecting performance of gypsum board system construction. Do not proceed with installation until unsatisfactory conditions have been corrected.

#### **3.02 CONSTRUCTION TOLERANCES**

- A. Do not exceed 1/8 inch in 8 feet variation from plumb or level in any exposed line or surface, except at joints between boards do not exceed 1/16 inch variation between planes or abutting edges or ends. Shim as required to comply with specified tolerances.

#### **3.03 STEEL FRAMING INSTALLATION**

- A. Installation Standards: ASTM C 754, and ASTM C 840 requirements that apply to framing installation.
- B. Install supplementary framing, blocking, and bracing at terminations in gypsum board system to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction. Comply with details indicated and with gypsum board manufacturer's written recommendations.
- C. Isolate partitions from structural elements with slip or cushion-type joints between steel framing and structure as recommended by steel framing manufacturer to prevent transfer of structural loads or movements to partitions.
- D. Partition Framing Installation:
  1. Align tracks accurately at floor and ceiling. Secure tracks as recommended by the framing manufacturer for the floor and ceiling construction involved, except do not exceed 24 inches oc spacing for powder-driven fasteners, or 16 inches oc for other types of attachment. Provide fasteners approximately 2 inches from corners and ends of tracks.
  2. Position studs vertically and engage both floor and ceiling tracks. Install studs so flanges point in the same direction and leading edge or end of each panel can be attached to open (unsupported) edge of stud flanges first. Space studs 16 inches on center, unless otherwise indicated on the Drawings. Fasten studs to track flanges with screws or by crimping.



3. Use full length studs between tracks wherever possible. If necessary, splice studs with a minimum 8 inch nested lap and fasten with two screws per stud flange.
4. Install additional studs to support inside corners at partition intersections and corners, and to support outside corners, terminations of partitions, and both sides of control joints (if any).
5. Extend partition framing full height to structural supports or substrates above suspended ceilings, except where partitions are indicated to terminate at suspended ceilings. Continue framing over frames for doors and openings and frame around ducts penetrating partitions above ceiling to provide support for gypsum board.
6. Brace chase wall framing horizontally to opposite studs with 12 inch wide gypsum board gussets or metal framing braces, spaced vertically not more than 4 feet on center.
  - a. Attach gypsum board gussets with a minimum 3 screws per stud flange.
  - b. Attach metal framing braces with a minimum 2 screws per stud flange.
7. Install rough framing at openings consisting of full-length studs adjacent to jambs and horizontal header and sill tracks. Cut horizontal tracks to length and split flanges and bend webs at ends for flange overlap and screw to jamb studs. Install intermediate studs between jamb studs at head and sill sections, at same spacing as full-length studs.
8. At door frames, install rough framing as specified above. Install jamb studs to comply with framing manufacturer's recommendations for the types of frames and weights of doors required. Fasten jamb studs to metal frames with anchor clips using 2 self tapping screws or bolts per clip. Where wood frames are shown, fasten jamb studs to rough framing with screws.
9. Where solid core wood doors, double doors, or doors weighing more than 50 lb are indicated or scheduled, install two studs at each jamb and one additional stud not more than 6 inches from jamb studs.

### **3.04 SHAFT-WALL ASSEMBLY INSTALLATION**

- A. Install shaft-wall assemblies to comply with performance requirements indicated and with the manufacturer's published installation instructions.

### **3.05 GYPSUM BOARD INSTALLATION**

- A. Install gypsum board in the most economical direction, of maximum lengths to minimize end butt joints. Where unavoidable, locate end butt joints as far from center of walls or ceilings as possible.
- B. Install gypsum board with face side out. Butt boards together at edges and ends over firm bearing with not more than 1/16 inch of open space between boards. Do not force into place.



- C. Fasteners: Fasten gypsum board to supports and furring with steel drill screws of required size and spacing as recommended by the gypsum board manufacturer.
  - 1. Multiple-layer Work:
    - a. Mechanically fasten both layers.
    - b. Stagger vertical joints in multiple layer Work. Offset joints not less than 10 inches.
- D. Provide additional framing and blocking required to support gypsum board at openings and cutouts.
- E. Wood Supports: Provide “floating” interior angle construction between gypsum board at interior corners.
- F. Reinforce joints formed by tapered edges, butt edges, and interior corners or angles with joint tape.

### **3.06 TRIM INSTALLATION**

- A. Coordinate installation of trim progressively with gypsum board installation where trim is of type required to be installed prior to, or progressively with installation of gypsum board.
- B. Securely fasten trim pieces in accordance with manufacturer’s printed instructions.
- C. Install cornerbeads at external corners. Install LC-Bead (J-Bead) beads at unprotected (exposed) edges and where gypsum board abuts dissimilar materials. Use single unjointed lengths unless otherwise approved by the Commissioner.
- D. Install control joint trim in accordance with ASTM C 840, where indicated.
- E. Comply with joint compound manufacturer’s recommended drying time for the relative humidity and temperature at time of application. Allow minimum of 24 hours drying time between applications of joint compound.
- F. Except Type X Gypsum Board: Joint compound treatment is not required on gypsum board surfaces installed above suspended ceiling lines.
- G. Type X Gypsum Board: Install joint and corner reinforcing and trim, and one coat of joint compound over joints, fastener heads, and metal flanges above suspended ceiling lines.



### **3.07 LEVELS OF GYPSUM BOARD FINISH**

- A. General: Finish panels to levels indicated below, in accordance with ASTM C 840, for locations indicated.
  - 1. Level 1 Finish: Joints and angles, provide tape embedded in joint compound. Surface shall be free of excess joint compound. Tool marks and ridges will be acceptable.

**END OF SECTION**



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**SECTION 099101  
CONSTRUCTION PAINTING**

**PART 1 GENERAL**

**1.01 RELATED WORK SPECIFIED ELSEWHERE**

- 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].

**1.02 DEFINITIONS**

- A. The word "paint" in this Section refers to substrate cleaners, fillers, sealers, primers, undercoats, enamels and other first, intermediate, last or finish coatings.
- B. The word "primer" in this Section refers to substrate cleaners, fillers, sealers, undercoats, and other first or intermediate coats beneath the last or finish coating.
- C. The words "finish paint" in this Section refers to the last or final coat and previous coats of the same material or product directly beneath the last or final coat.
- D. Finish Paint Systems: Finish paint and primers applied over the same substrate shall be considered a paint system of products manufactured or recommended by the finish coat manufacturer.
  - 1. Finish paint products shall meet or exceed specified minimum physical properties.

**1.03 SUBMITTALS**

- A. Painting Schedule: Cross-referenced Painting Schedule listing all exterior and interior substrates to be painted and specified finish paint type designation; product name and manufacturer, recommended primers and product numbers, and finish paint color designation for each substrate to be painted.
  - 1. Designate exterior substrates by building name and number, substrate to be painted and surface location.
  - 2. Designate interior substrates by building name and number, floor, room name and number, and surface to be painted.
- B. Product Data Sheets: Manufacturer's published product data sheets describing the following for each finish paint product to be applied:
  - 1. Percent solids by weight and volume, solvent, vehicle, weight per gallon, ASTM D 523 gloss/reflectance angle, recommended wet and dry film thickness, volatile organic compound (VOC) content in lbs/gallon,



- product use limitations and environmental restrictions, substrate surface preparation methods, directions and precautions for mixing and thinning, recommended application methods, square foot area coverage per gallon, storage instructions, and shelf-life expiration date.
2. Manufacturer's recommended primer for each finish paint product and substrate to be painted.
  3. Manufacturer's complete range of available colors for each finish paint product to be applied.
- C. **Finish Paint Type Samples:** Two finish paint samples applied over recommended primers for each substrate to be painted.
1. Samples shall be in the designated color and specified ASTM D 523 reflectance.
  2. Label each sample with the following information:
    - a. Project number and Painting Schedule designation describing substrates and locations represented by the sample.
    - b. Finish paint and primer manufacturer, product names and numbers, finish paint color and reflectance.
  3. Leave a 1 inch wide exposed strip of unpainted substrate and each coat of primer and finish paint.
  4. Sample Sizes:
    - a. Wall, Ceiling, and Floor Substrates: 12 inch square panels.
    - b. Concrete and Concrete Masonry Unit Substrates: 4 inch square blocks.
    - c. Sheet Metals: 4 inch by 8 inch flat sheets.
    - d. Bar and Tubular Metals: 8 inch long bars or tubular stock.
- D. **Quality Control Submittals:**
1. Test Reports: Furnish certified test results from an independent testing laboratory, showing that products submitted comply with the specifications, when requested by the Commissioner
  2. Certificates: Furnish certificates of compliance required under QUALITY ASSURANCE Article.

#### **1.04 QUALITY ASSURANCE**

- A. **Volatile Organic Compounds (VOCs) Regulatory Requirements:** Chapter III of Title 6 of the official compilation of Codes, Rules and Regulations of the State of New York (Title 6 NYCRR), Part 205 Commissionerural Surface Coatings.
1. Certificate of Compliance: List of each paint product to be delivered and installed. List shall include written certification stating that each paint product listed complies with the VOC regulatory requirements in effect at the time of job site delivery and installation.
- B. **Container Labels:** Label each product container with paint manufacturer's name, product name and number, color name and number, thinning and application





instructions, date of manufacture, shelf-life expiration date, required surface preparations, recommended coverage per gallon, wet and dry film thickness, drying time, and clean up procedures.

- C. Field Examples:
1. Prior to on-site painting, at locations designated by the Commissioner, apply field examples of each paint type to be applied.
  2. Field examples to be applied on actual substrates to be painted and shall duplicate earlier approved paint samples.
    - a. Interior field examples to be applied in rooms and spaces to be painted with the same products.
    - b. Field Example Minimum Wet and Dry Film Thickness: As indicated on approved product data sheet.
    - c. Application: Apply each coat in a smooth uniform wet mil thickness without brush marks, laps, holidays, runs, stains, cloudiness, discolorations, nail holes and other surface imperfections.
      - 1) Leave a specified exposed width of each previous coat beneath each subsequent coat of finish paint and primer.
    - d. Use of Field Examples: Field examples shall serve as a quality control standard for acceptance or rejection of painting Work to be done under this Section.
  3. Field Example Sizes:
    - a. Floor, Wall, and Ceiling Examples: 200 square feet with 2 foot wide strips.
    - b. Door and Frame Examples: One door and frame with 12 inch wide horizontal strips.
    - c. Linear Substrate Examples: 20 lineal feet with 12 inch long strips.
  4. Do not begin applying paints represented by field examples until examples have been reviewed and approved by the Commissioner.
    - a. Protect and maintain approved field examples until all painting work represented by the example has been completed and approved.
- D. Compatibility of Paint Materials: Primers and intermediate paints shall be products manufactured or recommended by the finish paint manufacturer.

#### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Delivery: Deliver materials to the Site in original, unopened containers and cartons bearing manufacturer's printed labels. Do not deliver products which have exceeded their shelf life, are in open or damaged containers or cartons, or are not properly labeled as specified.



- B. Storage and Handling: Store products in a dry, well ventilated area in accordance with manufacturer's published product data sheets. Storage location shall have an ambient air temperature between 45 degrees F and 90 degrees F.

#### **1.06 PROJECT CONDITIONS**

- A. Environmental Requirements:
1. Ambient Air Temperature, Relative Humidity, Ventilation, and Surface Temperature: Comply with paint manufacturer's published product data sheet or other printed product instructions.
  2. If paint manufacturer does not provide environmental requirements, use the following:
    - a. Ambient Air Temperature: Between 45 degrees F and 75 degrees F.
    - b. Relative Humidity: Below 75 percent.
    - c. Ventilation: Maintain the painting environment free from fumes and odors throughout the Work of this Section.
    - d. Surface Temperature: At least 5 degrees F above the surface dewpoint temperature.
  3. Maintain environmental requirements throughout the drying period.

#### **1.07 EXTRA MATERIALS**

- A. Provide extra finish paint materials, from the same production run as paints to be applied, in the following quantities for each color installed:
1. Paint Type EAL-1 and IAL-1: Four gallons each type.
  2. Paint Types EAL-2 and IAL-2: Two gallons, each type.
  3. Other Paint Types: One gallon, each type.

### **PART 2 PRODUCTS**

#### **2.01 PAINT MANUFACTURERS**

- A. Where noted, the following finish paint manufacturers produce the paint types specified.
1. Ameron Protective Coatings, 201 Berry St., Brea, CA 92621, (800) 926-3766.
  2. Benjamin Moore and Co., 51 Chestnut Ridge Rd., Montvale, NJ 07645, (201) 573-9600.
  3. ICI Dulux Paints, 4000 Dupont Cr., Louisville, KY 40207, (800) 984-5444.
  4. Inorganic Coatings, Inc., 500 Lapp Rd., Malvern, PA 19355 (800) 345-0531.
  5. PPG Commissionerural Finishes, One PPG Plaza, Pittsburgh, PA 15272, (800) 441-9695.



6. Sherwin-Williams Co., Cleveland, OH 44101, (800) 321-8194.
7. Valspar Corp., 1401 Severn St., Baltimore, MD 21230, (800) 638-7756.
8. Wm. Zinsser & Co., 39 Belmont Dr., Somerset, NJ 08875-1285, (908) 469-8100.

## **2.02 MISCELLANEOUS PRODUCTS**

- A. Bedding Compound: Water based pre-mixed gypsum wallboard joint compound.
- B. Cleaning Solvents: Low toxicity with flash point in excess of 100 degrees F.
- C. Color Pigments: Pure, nonfading, finely ground pigments with at least 99 percent passing a 325 mesh sieve.
  1. Use lime-proof color pigments on masonry, concrete and plaster.
  2. Use exterior pigments in exterior paints.
- D. Galvanizing Compound, Cold: Single component compound with 93 percent pure zinc in the dried film and meeting the requirements of DOD-P-21035A (NAVY).
- E. Glazing Compound: ASTM C 669.
- F. Masking Tape: Removable paper or fiber tape, self-adhesive and nonstaining.
- G. Metal Filler: Polyester resin base autobody filler.
- H. Mineral Spirits: Low odor type recommended by finish paint manufacturer.
- I. Nonskid Deck Enamel Additive: Sid Tex by Gamma Labs, Inc., 840 Arroyo Ave., San Fernando, CA, 91340-1832, (818) 369-7500 or approved equal.
- J. Paint Stripper: As recommended by finish paint manufacturer.
- K. Spackling Compound: Water based pre-mixed plaster and gypsum wallboard finishing compound.
- L. Stain Blocker, Primer-Sealer: As recommended by finish paint manufacturer.
- M. Turpentine: ASTM D 13.
- N. Wood Putty: Water based pre-mixed wood filler.
  1. Color match putty to wood substrate beneath clear and semi-transparent finishes.
- O. Wood Substrate Cleaner, Brightener, Conditioner, and Open-grain Sealer: As recommended by finish paint manufacturer.



## **2.03 FINISH PAINT TYPES**

### **A. Physical Properties:**

1. Specified percent solids by weight and volume, pigment by weight, wet and dry film thickness per coat, and weight per gallon are minimum physical properties of acceptable materials.
  - a. Opaque Pigmented Paints: Physical properties specified are for white titanium dioxide base before color pigments are added.
  - b. Specified minimum wet and dry film thickness per coat are for determining acceptable finish paint products. Minimum wet and dry film thickness per coat to be applied shall comply with approved finish paint manufacturer's product data sheets.
2. Gloss or Reflectance: The following ASTM D 523 specified light levels and angles of reflectance:
  - a. Flat: Below 15 at 85 degrees.
  - b. Eggshell: Between 5 and 20 at 60 degrees.
  - c. Satin: Between 15 and 35 at 60 degrees.
  - d. Semigloss: Between 30 and 65 at 60 degrees.
  - e. Gloss: Over 65 at 60 degrees.

### **B. Exterior Finish Paint Types:**

1. Paint Type EAL-1: Exterior Acrylic Latex, Flat.
  - a. Solids by Weight: 52.0 percent.
  - b. Solids by Volume: 32.0 percent.
  - c. Solvent: Water.
  - d. Vehicle: 100 percent acrylic resin.
  - e. Weight Per Gallon: 10.5 lbs.
  - f. Wet Film Thickness: 4.0 mils.
  - g. Dry Film Thickness: 1.3 mils.
  - h. Manufacturers: ICI Dulux, PPG, Sherwin-Williams.
  - i. or approved equal.
2. Paint Type EAL-2: Exterior Acrylic Latex, Semigloss Enamel.
  - a. Solids by Weight: 47.0 percent.
  - b. Solids by Volume: 33.2 percent.
  - c. Solvent: Water.
  - d. Vehicle: 100 percent acrylic resin.
  - e. Weight Per Gallon: 10.0 lbs.
  - f. Wet Film Thickness: 4.0 mils.
  - g. Dry Film Thickness: 1.3 mils.
  - h. Manufacturers: ICI Dulux, PPG, Sherwin-Williams.
  - i. or approved equal.
3. Paint Type EAL-3: Exterior Acrylic Latex, Gloss Enamel.
  - a. Solids by Weight: 40.0 percent.
  - b. Solids by Volume: 32.0 percent.
  - c. Solvent: Water.
  - d. Vehicle: 100 percent acrylic resin.



- e. Weight Per Gallon: 10.0 lbs.
    - f. Wet Film Thickness: 3.4 mils.
    - g. Dry Film Thickness: 1.2 mils.
    - h. Manufacturers: Benjamin Moore, PPG, Sherwin- Williams.
    - i. or approved equal.
  - 4. Paint Type ESP: Exterior Steel Zinc-Rich Primer, Flat.
    - a. Solids by Weight: 79.0 percent.
    - b. Solids by Volume: 68.0 percent.
    - c. Pigment by Weight: 90.0 percent zinc.
    - d. Solvent: Water.
    - e. Weight per Gallon: 24.6 lbs.
    - f. Dry Film Thickness: 3.0 mils if finish coated, 4.0 mils if not finish coated.
    - g. Manufacturers: Ameron Protective Coatings, Inorganic Coatings, Valspar.
    - h. or approved equal.
- C. Exterior/Interior Finish Paint Types:
  - 1. Paint Type EPE: Exterior Porch Enamel, Gloss Enamel.
    - a. Solids by Weight: 43.0 percent.
    - b. Solids by Volume: 30.2 percent.
    - c. Solvent: Water.
    - d. Vehicle: 100 percent acrylic resin.
    - e. Weight Per Gallon: 10.3 lbs.
    - f. Wet Film Thickness: 5.0 mils.
    - g. Dry Film Thickness: 1.5 mils.
    - h. Manufacturers: Benjamin Moore, ICI Dulux, PPG.
    - i. or approved equal.
- D. Interior Finish Paint Types:
  - 1. Paint Type IAL-1: Interior Acrylic Latex, Flat.
    - a. Solids by Weight: 50.0 percent.
    - b. Solids by Volume: 32.0 percent.
    - c. Solvent: Water.
    - d. Vehicle: Vinyl acrylic resin.
    - e. Weight Per Gallon: 10.9 lbs.
    - f. Wet Film Thickness: 3.8 mils.
    - g. Dry Film Thickness: 1.3 mils.
    - h. Manufacturers: Benjamin Moore, ICI Dulux, Sherwin- Williams.
    - i. or approved equal.
  - 2. Paint Type IAL-2: Interior Acrylic Latex, Eggshell.
    - a. Solids by Weight: 51.0 percent.
    - b. Solids by Volume: 35.0 percent.
    - c. Solvent: Water.
    - d. Vehicle: Vinyl acrylic resin.
    - e. Weight Per Gallon: 11.0 lbs.



- f. Wet Film Thickness: 3.8 mils.
    - g. Dry Film Thickness: 1.3 mils.
    - h. Manufacturers: Benjamin Moore, ICI Dulux, Sherwin-Williams.
    - i. or approved equal.
  - 3. Paint Type IAL-3: Interior Acrylic Latex, Semigloss Enamel.
    - a. Solids by Weight: 49.0 percent.
    - b. Solids by Volume: 35.0 percent.
    - c. Solvent: Water.
    - d. Vehicle: Vinyl acrylic resin.
    - e. Weight Per Gallon: 10.0 lbs.
    - f. Wet Film Thickness: 3.8 mils.
    - g. Dry Film Thickness: 1.2 mils.
    - h. Manufacturers: Benjamin Moore, ICI Dulux, Sherwin-Williams.
    - i. or approved equal.
  - 4. Paint Type IAL-4: Interior Acrylic Latex, Gloss Enamel.
    - a. Solids by Weight: 40.0 percent.
    - b. Solids by Volume: 32.0 percent.
    - c. Solvent: Water.
    - d. Vehicle: Vinyl acrylic resin.
    - e. Weight Per Gallon: 10.0 lbs.
    - f. Wet Film Thickness: 3.4 mils.
    - g. Dry Film Thickness: 1.2 mils.
    - h. Manufacturers: Benjamin Moore, PPG, Sherwin-Williams.
    - i. or approved equal.
  - 5. Paint Type ISP: Interior Steel Primer, Flat.
    - a. Solids by Weight: 72.0 percent.
    - b. Solids by Volume: 52.0 percent.
    - c. Vehicle: Alkyd resin.
    - d. Weight Per Gallon: 11.4 lbs.
    - e. Wet Film Thickness: 3.0 mils.
    - f. Dry Film Thickness: 1.5 mils.
    - g. Manufacturers: PPG, Sherwin-Williams, Valspar.
    - h. or approved equal.
- E. Colors: Provide paint colors either shown on contract drawings or to be selected by the Commissioner from finish paint manufacturers available color selections.
  - 1. Approved finish paint manufacturers to match designated colors of other manufacturers where colors are shown on contract documents.
  - 2. Safety Colors: Industry Standard ANSI Safety Colors.



## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine surfaces to be prepared, primed, or painted for compliance with contract documents, required environmental conditions, manufacturer's product data sheets, product label instructions and other written requirements.
  - 1. Do not begin any phase of the work without first checking and verifying that surfaces and environmental conditions are acceptable for such work and that any earlier phase deficiencies and discrepancies have been properly corrected.
    - a. The commencement of new work shall be interpreted to mean acceptance of surfaces to be affected.

### **3.02 PREPARATION**

- A. Protection: Cover and protect surfaces to be painted, adjacent surfaces not to be painted, and removed furnishings and equipment from existing paint removals, airborne sanding particles, cleaning fluids and paint spills using suitable drop cloths, barriers and other protective devices.
  - 1. Adjacent exterior surface protections include roofs, walls, landscaping, driveways and walkways. Interior protections include floors, walls, furniture, furnishings and electronic equipment.
  - 2. Remove and replace removable hardware, lighting fixtures, telephone equipment, other devices and cover plates over concealed openings in substrates to be painted.
    - a. Cover and neatly mask permanently installed hardware, lighting fixtures, cover plates and other devices which cannot be removed and are not scheduled for painting.
  - 3. Schedule and coordinate surface preparations so as not to interfere with work of other trades or allow airborne sanding dust particle to fall on freshly painted surfaces.
  - 4. Provide adequate natural or mechanical ventilation to allow surfaces to be prepared and painted in accordance with product manufacturer's instructions and applicable regulations.
  - 5. Provide and maintain "Wet Paint" signs, temporary barriers and other protective devices necessary to protect prepared and freshly painted surfaces from damages until Work has been accepted.
- B. Clean and prepare surfaces to be painted in accordance with specifications, paint manufacturer's approved product data sheets and printed label instructions. In the event of conflicting instructions or directions, the more stringent requirements shall apply.
  - 1. Cleaners: Use only approved products manufactured or recommended by finish paint manufacturer. Unless otherwise recommended by cleaner manufacturer, thoroughly rinse with clean water to remove surface contaminants and cleaner residue.



C. Surfaces:

1. Existing Exterior Painted Surfaces: Thoroughly clean to remove dirt, soot, grease, mildew, chalkiness and stains using finish paint manufacturer's recommended spray-on liquid cleaner.
2. Concrete:
  - a. Allow three months for poured concrete to dry before painting.
  - b. Remove form release agents, laitance, efflorescence, dirt, grease, oils, slurry, chalk deposits, and other surface contaminants using a high-pressure power wash. Use mildewcide solution if mildew is present.
  - c. Remove any remaining efflorescence by dampening surface with water and scrubbing with a 5 percent solution of muriatic acid. Rinse with clean water, neutralize with ammonia, rinse and allow to dry.
  - d. Vacuum surface clean before painting.
  - e. Sandblast to remove any existing deteriorated paint films, curing compounds, concrete sealers, and other substances that may prevent primer adhesion.
  - f. Chip and grind surface projections smooth to adjacent surfaces.
  - g. Open concealed voids and cracks, remove cement slurry by wire-brushing to expose clean aggregate substrate, and chip out surface honeycomb pockets to allow a neat cementitious patch with square corners and a uniform thickness.
  - h. Inspect surfaces to be painted for exposed or rusted steel reinforcement and contact Commissioner for a survey of damages to be repaired before substrate can be painted. Do not paint over exposed steel reinforcement without first repairing both deteriorated reinforcement and protective coating.
  - i. Use an electronic meter to determine moisture content compliance with finish paint manufacturer's recommendations.
3. Concrete Masonry Units:
  - a. Allow two months for mortar joints to dry before painting.
  - b. Remove severe laitance, efflorescence, dirt, grease, slurry, chalk deposits and other surface contaminants using a low-pressure power wash. Use mildewcide solution if mildew is present.
  - c. Remove less severe surface contaminants and contaminant residues by dampening surface with water and scrubbing with a 10 percent solution of muriatic acid.
4. Existing Structural Steel, Metal Decks and Stairs:
  - a. Prepare existing steel to be painted by cleaning in accordance with Structural Steel Painting Council (SSPC) standards:
    - 1) SSPC-SP1: Remove oil, grease, dirt, soil, salts, and other surface contaminants using appropriate cleaning solvents and clean rags, vapor, alkali, emulsion; or steam and adequate ventilation.





- 2) SSPC-SP2: Remove loose rust, mill scale, and paint to the degree specified by hand chipping, scraping, sanding, and wire-brushing.
  - 3) SSPC-SP3: Remove loose rust, mill scale, and paint to the degree specified by power-tool chipping, descaling, sanding, wire-brushing, and grinding.
  - 4) SSPC-SP5: Remove all visible rust, mill scale, paint, and foreign matter by white-metal blast cleaning with wheel or nozzle (dry or wet) using sand, grit, or shot.
  - 5) SSPC-SP6: Remove all visible rust, mill scale, paint, and foreign matter by commercial blast cleaning until at least two-thirds of each element of the surface is free of all visible residues.
- b. Inspect for exposed or rusted steel reinforcement and contact Commissioner for an on-site survey of repairs to made before painting. Do not paint over exposed steel reinforcement without first repairing both deteriorated reinforcement and protective concrete covering.
5. Galvanized Metal:
  - a. Allow new galvanized surfaces to weather as long as possible before cleaning. Remove surface contaminants using clean rags and petroleum spirits.
  - b. Remove "white rust" using appropriate solvent and, if necessary, wire brushing or sanding.
  - c. Use appropriate Structural Steel Painting Council Standard SSPC-SP1 to SSPC-SP6 to clean steel substrates where galvanized protection has been removed.
6. Steel Doors and Frames: Fill indentations and cracks with metal filler; sand smooth to match adjacent undamaged surfaces.
7. Aluminum:
  - a. Non-corroded Surfaces: Rub with fine steel wool and wipe clean with mineral spirits.
  - b. Corroded Surfaces: Sand smooth, rub with fine steel wool and wipe clean with mineral spirits.
8. Wood:
  - a. Remove surface dirt, stains, markings, discolorations and other contaminants using finish paint manufacturer's recommended cleaning methods and solvents.
  - b. Sand raised grain, rough sawcut edges, planed mill glaze, old paint, and other surface imperfections clean and smooth using medium and fine sandpaper. Sand in the direction of grain.
  - c. Fill open cracks, knot holes, countersunk fastener holes and other surface indentations with wood filler putty. Sand putty smooth and flush to adjacent unfilled surface.
  - d. Seal knots, pitch streaks, sap spots, stains and graffiti with finish paint manufacturer's recommended primer/sealer.



9. Plaster, Cement Plaster, and Gypsum Wallboard:
    - a. Fill cracks, holes, and other indentations smooth to adjacent surfaces using specified bedding, spackling, and finishing compounds.
    - b. Plaster: Scrape and sand smooth ridges, spills, nibs, and other surface projections.
    - c. Cement Plaster: Coat surfaces to be patched with a bonding agent. Patch cement plaster with an approved mortar patching mix and finish to match adjacent surface and texture.
    - d. Gypsum Wallboard: Fill and sand smooth minor bedding and finishing compound defects.
    - e. Vacuum and wipe surfaces free of all sanding residue and dust
  10. Glazing Repairs: Cut out and replace dry, loose, and cracked glazing compound or putty.
  11. Other Substrates: See finish paint manufacturer's recommendations.
- D. Painting Material Preparations:
1. Prepare painting materials in accordance with manufacturer's approved product data sheets and printed label instructions.
    - a. Stir materials before and during application for a consistent mixture of density. Remove container surface paint films before stirring and mixing.
    - b. Slightly tint first opaque finish coat where primer and finish coats are the same color.
    - c. Do not thin paints unless allowed and directed to do so in writing within limits stated on approved product data sheets.

### **3.03 APPLICATION**

- A. Environmental Conditions:
1. Water-based Paints: Apply when surface temperatures will be 50 degrees Fahrenheit to 90 degrees Fahrenheit throughout the drying period.
  2. Other Paints: Apply when surface temperatures will be 45 degrees Fahrenheit to 95 degrees Fahrenheit throughout the drying period.
  3. Apply exterior paints during daylight hours free from rain, snow, fog and mist when ambient air conditions are more than 5 degrees above the surface dewpoint temperature and relative humidity less than 85 percent.
    - a. When exterior painting is allowed or required during nondaylight hours, provide portable outdoor weather recording station with constant printout showing hourly to diurnal air temperature, humidity, and dewpoint temperature.
  4. Exterior Cold Weather Protection: Provide heated enclosures necessary to maintain specified temperature and relative humidity conditions during paint application and drying periods.



- B. Install approved paints where specified, or shown on the drawings, and to match approved field examples.
1. Paint Applicators: Brushes, rollers or spray equipment recommended by the paint manufacturer and appropriate for the location and surface area to be painted.
    - a. Approved minimum wet and dry film thicknesses shall be the same for different application methods and substrates.
- C. Paint Type Coats To Be Applied: Unless specified otherwise by finish paint manufacturer's product data sheet, the number of coats to be applied for each paint type are as follows:
1. Paint Types EAL and IAL:
    - a. New Unpainted Surfaces: Apply 1 coat of primer and 2 coats of finish paint.
    - b. Existing Painted Surfaces:
      - 1) Apply 2 coats of finish paint when existing paint has a lower gloss.
      - 2) Apply one coat of primer and 2 finish coats when existing paint has a higher gloss.
    - c. Paint Types IAL: Provide mildewcide additive for bathrooms, kitchens, janitor closets, laundry rooms, restrooms and other wet or damp areas.
    - d. Pitted Concrete & Concrete Masonry Surfaces: Use block filler as primer /sealer where allowed by finish paint manufacturer.
    - e. Existing Structural Steel:
      - 1) Primed Steel: Apply 2 coats of finish paint.
      - 2) Unprimed Steel: Apply 1 coat of Paint Type ESP or ISP, depending upon exterior or interior location.
        - a) If topcoated, apply additional coat of finish paint manufacturer's galvanized primer and 2 coats of finish paint.
  2. Paint Types ESP and ISP: Apply 1 coat.
    - a. Do not prime or finish paint steel to be encased in concrete, masonry, or to receive sprayed on fireproofing.
    - b. Allow primer to dry one week and test adhesion. Remove and replace defective primer where adhesion failures occur.
- D. Surfaces: Unless otherwise specified or shown on the drawings, paint surfaces as follows:
1. Exterior Surfaces:
    - a. Wood Substrates:
      - 1) Smooth Siding: Paint Type EAL-1.
      - 2) Doors, Windows, Frames and Trim: Paint Type EAL-2.
      - 3) Handrails: Paint Type EAL-3.
    - b. Factory Finished Metal Substrates: Field painting not required.
    - c. Factory Primed and Unprimed Ferrous Metal Substrates:
      - 1) Metal Siding: Paint Type EAL-2.



- 2) Doors, Windows, Frames and Trim: Paint Type EAL-3.
- 3) Handrails: Paint Type EAL-3.
- 4) Existing Unprimed Structural Steel: Paint Type EAL-3 over primer Paint Type ESP.
- 5) New Primed Structural Steel: Paint Type EAL-3.
- 6) Steel Stairs, Decks and Handrails: Paint Type EAL-3.
2. Interior Surfaces:
  - a. Ceilings: Paint Type IAL-1 except as noted below:
    - 1) Living Units: Paint Type IAL-2.
    - 2) Toilets, Kitchens, Shower Rooms, Janitor Closets and Other Wet Areas: Paint Type IAL-3.
    - 3) Food Preparation and Clean Room Areas: Paint Type IAL-4.
  - b. Walls: Paint Type IAL-2 except as noted below:
    - 1) Living Units: Paint Type IAL-3.
    - 2) Toilets and Kitchens: Paint Type IAL-3.
    - 3) Shower Rooms, Janitor Closets and Other Wet Areas: Paint Type IAL-4.
  - c. Doors, Windows, Frames and Trim: Paint Type IAL-3 except as noted below:
    - 1) Use Paint Type IAL-4 where walls are Paint Type IAL-3.
3. Unless otherwise noted, paint both exterior and interior exposed wall and ceiling air supply and return grilles; plumbing pipes; electrical panel and fuse boxes, raceways and conduits; heating convactor cabinets, radiators, radiator cabinets, unit heaters, and similar existing and installed devices and equipment by other trades.
  - a. Paint substrates to match adjacent wall or ceiling surfaces.
  - b. Paint exposed surfaces when any part of the surface is on or within 8 inches of ceiling or wall surface to be painted.
  - c. Paint visible interior surfaces behind grilles, guards and screens.
4. Doors and Frames: Unless otherwise noted, paint doors and frames the same color in the next highest gloss as adjacent wall surfaces.
  - a. Where walls are not the same color on both sides of a door frame, change frame color at the inside corner of the frame stop.
  - b. Prime and finish paint door faces and edges before installation.
    - 1) Paint door edges the same paint type color as the exterior side of the door.
  - c. Do not paint door components which are clearly not intended to be painted such as non-ferrous hardware, frame mates, and weather stripping.
  - d. Do not allow doors and frames to touch until paint is thoroughly dry on both surfaces.
5. Window Frames and Sash: Unless otherwise noted, paint window frames and sash the same color as adjacent wall surfaces.



- a. Do not paint window components which are clearly not intended to be painted such as prefinished frames, sliding metal or plastic contacts, weatherstripping, and non-ferrous hardware.
- b. Do not allow operable doors, windows and frames to touch until paint is thoroughly dry on both surfaces.
6. Ferrous Metal Door and Window Hardware: Unless otherwise noted, prime and paint to match adjacent doors, windows and frames.
7. Case Work: Paint factory unfinished exposed and semiexposed surfaces when doors and drawers are either open or closed including:
  - a. Both faces and edges of cabinet doors, shelving, dividers including interior side, rear, and bottom panel surfaces.
  - b. Both faces and edges of drawer face, side, rear, and bottom panels.
  - c. Exposed bottom or underside of case work more than 4 feet above the floor.
  - d. Do not paint plastic laminate surfaces, special countertop materials, glazing, factory finished surfaces, finish hardware, and similar items clearly not intended to be painted.

### **3.04 FIELD QUALITY CONTROL**

- A. Paint Samples: Obtain random one quart paint samples for the Commissioner for testing at any time during the Work.
  1. Notify the Commissioner upon delivery of paints to the Site.
  2. Furnish new one quart metal paint containers with tight fitting lids and suitable labels for marking.
    - a. Furnish labor to thoroughly mix paint before sampling and provide assistance with sampling when required.

### **3.05 ADJUSTING AND CLEANING**

- A. Reinstall removed items after painting has been completed.
  1. Restore damaged items to a condition equal to or better than when removed. Replace damaged items that cannot be restored.
- B. Touch up and restore damaged finish paints. Touch up and restoration paint coats are in addition to the number of specified finish paint coats.
- C. Remove spilled, splashed, or spattered paint without marring, staining or damaging the surface. Restore damaged surfaces to the satisfaction of the Commissioner.
- D. Remove temporary barriers, masking tape, and other protective coverings upon completion of painting, cleaning and restoration work.

### **END OF SECTION**



**Department of  
Design and  
Construction**

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## SECTION 230513 - COMMON MOTOR REQUIREMENTS FOR HVAC EQUIPMENT

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project:
1. Contract Drawings
  2. Specifications
  3. General Conditions
  4. Addendum
  5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

- A. Section includes general requirements for single-phase and polyphase, general-purpose, horizontal, small and medium, squirrel-cage induction motors for use on ac power systems up to 600 V and installed at equipment manufacturer's factory or shipped separately by equipment manufacturer for field installation.

#### 1.3 COORDINATION

- A. Coordinate features of motors, installed units, and accessory devices to be compatible with the following:
1. Motor controllers.
  2. Torque, speed, and horsepower requirements of the load.
  3. Ratings and characteristics of supply circuit and required control sequence.
  4. Ambient and environmental conditions of installation location.

### PART 2 - PRODUCTS

#### 2.1 GENERAL MOTOR REQUIREMENTS

- A. Comply with NEMA MG 1 unless otherwise indicated.
- B. Comply with IEEE 841 for severe-duty motors.



## 2.2 MOTOR CHARACTERISTICS

- A. Duty: Continuous duty at ambient temperature of 40 deg C and at altitude of 3300 feet (1000 m) above sea level.
- B. Capacity and Torque Characteristics: Sufficient to start, accelerate, and operate connected loads at designated speeds, at installed altitude and environment, with indicated operating sequence, and without exceeding nameplate ratings or considering service factor.

## 2.3 POLYPHASE MOTORS

- A. Description: NEMA MG 1, Design B, medium induction motor.
- B. Efficiency: Energy efficient, as defined in NEMA MG 1.
- C. Service Factor: 1.15.
- D. Multispeed Motors: Variable torque.
  - 1. For motors with 2:1 speed ratio, consequent pole, single winding.
  - 2. For motors with other than 2:1 speed ratio, separate winding for each speed.
- E. Multispeed Motors: Separate winding for each speed.
- F. Rotor: Random-wound, squirrel cage.
- G. Bearings: Regreasable, shielded, antifriction ball bearings suitable for radial and thrust loading.
- H. Temperature Rise: Match insulation rating.
- I. Insulation: Class F.
- J. Code Letter Designation:
  - 1. Motors 15 HP and Larger: NEMA starting Code F or Code G.
  - 2. Motors Smaller than 15 HP: Manufacturer's standard starting characteristic.
- K. Enclosure Material: Cast iron for motor frame sizes 324T and larger; rolled steel for motor frame sizes smaller than 324T.

## 2.4 POLYPHASE MOTORS WITH ADDITIONAL REQUIREMENTS

- A. Motors Used with Reduced-Voltage and Multispeed Controllers: Match wiring connection requirements for controller with required motor leads. Provide terminals in motor terminal box, suited to control method.





- B. Motors Used with Variable Frequency Controllers: Ratings, characteristics, and features coordinated with and approved by controller manufacturer.
  - 1. Windings: Copper magnet wire with moisture-resistant insulation varnish, designed and tested to resist transient spikes, high frequencies, and short time rise pulses produced by pulse-width modulated inverters.
  - 2. Energy- and Premium-Efficient Motors: Class B temperature rise; Class F insulation.
  - 3. Inverter-Duty Motors: Class F temperature rise; Class H insulation.
  - 4. Thermal Protection: Comply with NEMA MG 1 requirements for thermally protected motors.
- C. Severe-Duty Motors: Comply with IEEE 841, with 1.15 minimum service factor.

## 2.5 SINGLE-PHASE MOTORS

- A. Motors larger than 1/20 hp shall be one of the following, to suit starting torque and requirements of specific motor application:
  - 1. Permanent-split capacitor.
  - 2. Split phase.
  - 3. Capacitor start, inductor run.
  - 4. Capacitor start, capacitor run.
- B. Multispeed Motors: Variable-torque, permanent-split-capacitor type.
- C. Bearings: Prelubricated, antifriction ball bearings or sleeve bearings suitable for radial and thrust loading.
- D. Motors 1/20 HP and Smaller: Shaded-pole type.
- E. Thermal Protection: Internal protection to automatically open power supply circuit to motor when winding temperature exceeds a safe value calibrated to temperature rating of motor insulation. Thermal-protection device shall automatically reset when motor temperature returns to normal range.

## PART 3 - EXECUTION (Not Applicable)

END OF SECTION 230513



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## SECTION 230529 - HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

A. Section Includes:

1. Metal pipe hangers and supports.
2. Fastener systems.

B. Related Sections:

1. Section 233113 "Metal Ducts" for duct hangers and supports.

#### 1.3 DEFINITIONS

A. MSS: Manufacturers Standardization Society of the Valve and Fittings Industry Inc.

#### 1.4 PERFORMANCE REQUIREMENTS

A. Provide trapeze pipe hangers and equipment supports using performance requirements and design criteria indicated.

B. Structural Performance: Hangers and supports for HVAC piping and equipment shall withstand the effects of gravity loads and stresses within limits and under conditions indicated according to ASCE/SEI 7.

1. Provide supports for multiple pipes, including pipe stands, capable of supporting combined weight of supported systems, system contents, and test water.
2. Provide equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
3. Provide seismic-restraint hangers and supports for piping and equipment.



## 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show fabrication and installation details and Product Data for components.

## 1.6 QUALITY ASSURANCE

- A. Structural Steel Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Pipe Welding Qualifications: Qualify procedures and operators according to ASME Boiler and Pressure Vessel Code.

## PART 2 - PRODUCTS

### 2.1 METAL PIPE HANGERS AND SUPPORTS

#### A. Carbon-Steel Pipe Hangers and Supports:

- 1. Description: MSS SP-58, Types 1 through 58, factory-fabricated components.
- 2. Galvanized Metallic Coatings: Pregalvanized or hot dipped.
- 3. Nonmetallic Coatings: Plastic coating, jacket, or liner.
- 4. Padded Hangers: Hanger with fiberglass or other pipe insulation pad or cushion to support bearing surface of piping.
- 5. Hanger Rods: Continuous-thread rod, nuts, and washer made of carbon steel.

#### B. Copper Pipe Hangers:

- 1. Description: MSS SP-58, Types 1 through 58, copper-coated-steel, factory-fabricated components.
- 2. Hanger Rods: Continuous-thread rod, nuts, and washer made of copper-coated steel, stainless steel.

### 2.2 FASTENER SYSTEMS

- A. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.
- B. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated, stainless-steel anchors, for use in hardened portland cement concrete; with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.



## 2.3 EQUIPMENT SUPPORTS

- A. Description: Welded, shop- or field-fabricated equipment support made from structural carbon-steel shapes.

## 2.4 MISCELLANEOUS MATERIALS

- A. Structural Steel: ASTM A 36/A 36M, carbon-steel plates, shapes, and bars; black and galvanized.
- B. Grout: ASTM C 1107, factory-mixed and -packaged, dry, hydraulic-cement, nonshrink and nonmetallic grout; suitable for interior and exterior applications.
  - 1. Properties: Nonstaining, noncorrosive, and nongaseous.
  - 2. Design Mix: 5000-psi (34.5-MPa), 28-day compressive strength.

# PART 3 - EXECUTION

## 3.1 HANGER AND SUPPORT INSTALLATION

- A. Metal Pipe-Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Install hangers, supports, clamps, and attachments as required to properly support piping from the building structure.
- B. Metal Trapeze Pipe-Hanger Installation: Comply with MSS SP-69 and MSS SP-89. Arrange for grouping of parallel runs of horizontal piping, and support together on field-fabricated trapeze pipe hangers.
  - 1. Pipes of Various Sizes: Support together and space trapezes for smallest pipe size or install intermediate supports for smaller diameter pipes as specified for individual pipe hangers.
  - 2. Field fabricate from ASTM A 36/A 36M, carbon-steel shapes selected for loads being supported. Weld steel according to AWS D1.1/D1.1M.
- C. Fiberglass Pipe-Hanger Installation: Comply with applicable portions of MSS SP-69 and MSS SP-89. Install hangers and attachments as required to properly support piping from building structure.
- D. Metal Framing System Installation: Arrange for grouping of parallel runs of piping, and support together on field-assembled metal framing systems.
- E. Fiberglass Strut System Installation: Arrange for grouping of parallel runs of piping, and support together on field-assembled fiberglass struts.
- F. Thermal-Hanger Shield Installation: Install in pipe hanger or shield for insulated piping.



**G. Fastener System Installation:**

1. Install powder-actuated fasteners for use in lightweight concrete or concrete slabs less than 4 inches (100 mm) thick in concrete after concrete is placed and completely cured. Use operators from powder-actuated tool manufacturer. Install fasteners according to powder-actuated tool manufacturer's operating manual.
2. Install mechanical-expansion anchors in concrete after concrete is placed and completely cured. Install fasteners according to manufacturer's written instructions.

**H. Pipe Stand Installation:**

1. Pipe Stand Types except Curb-Mounted Type: Assemble components and mount on smooth roof surface. Do not penetrate roof membrane.
2. Curb-Mounted-Type Pipe Stands: Assemble components or fabricate pipe stand and mount on permanent, stationary roof curb. See Contract Documents for curb specifications.

**I. Install hangers and supports complete with necessary attachments, inserts, bolts, rods, nuts, washers, and other accessories.**

**J. Equipment Support Installation: Fabricate from welded-structural-steel shapes.**

**K. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.**

**L. Install lateral bracing with pipe hangers and supports to prevent swaying.**

**M. Install building attachments within concrete slabs or attach to structural steel. Install additional attachments at concentrated loads, including valves, flanges, and strainers, NPS 2-1/2 (DN 65) and larger and at changes in direction of piping. Install concrete inserts before concrete is placed; fasten inserts to forms and install reinforcing bars through openings at top of inserts.**

**N. Load Distribution: Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.**

**O. Pipe Slopes: Install hangers and supports to provide indicated pipe slopes and to not exceed maximum pipe deflections allowed by ASME B31.9 for building services piping.**

**P. Insulated Piping:**

1. Attach clamps and spacers to piping.
  - a. Piping Operating above Ambient Air Temperature: Clamp may project through insulation.
  - b. Piping Operating below Ambient Air Temperature: Use thermal-hanger shield insert with clamp sized to match OD of insert.



- c. Do not exceed pipe stress limits allowed by ASME B31.9 for building services piping.
  2. Install MSS SP-58, Type 39, protection saddles if insulation without vapor barrier is indicated. Fill interior voids with insulation that matches adjoining insulation.
    - a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 (DN 100) and larger if pipe is installed on rollers.
  3. Install MSS SP-58, Type 40, protective shields on cold piping with vapor barrier. Shields shall span an arc of 180 degrees.
    - a. Option: Thermal-hanger shield inserts may be used. Include steel weight-distribution plate for pipe NPS 4 (DN 100) and larger if pipe is installed on rollers.
  4. Shield Dimensions for Pipe: Not less than the following:
    - a. NPS 1/4 to NPS 3-1/2 (DN 8 to DN 90): 12 inches (305 mm) long and 0.048 inch (1.22 mm) thick.
  5. Thermal-Hanger Shields: Install with insulation same thickness as piping insulation.

### 3.2 ADJUSTING

- A. Hanger Adjustments: Adjust hangers to distribute loads equally on attachments and to achieve indicated slope of pipe.
- B. Trim excess length of continuous-thread hanger and support rods to 1-1/2 inches (40 mm).

### 3.3 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
  1. Apply paint by brush or spray to provide a minimum dry film thickness of 2.0 mils (0.05 mm).
- B. Touchup: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint.
- C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.



### 3.4 HANGER AND SUPPORT SCHEDULE

- A. Specific hanger and support requirements are in Sections specifying piping systems and equipment.
- B. Comply with MSS SP-69 for pipe-hanger selections and applications that are not specified in piping system Sections.
- C. Use hangers and supports with galvanized metallic coatings for piping and equipment that will not have field-applied finish.
- D. Use nonmetallic coatings on attachments for electrolytic protection where attachments are in direct contact with copper tubing.
- E. Use carbon-steel pipe hangers and supports and attachments for general service applications.
- F. Use copper-plated pipe hangers and copper attachments for copper piping and tubing.
- G. Use thermal-hanger shield inserts for insulated piping and tubing.
- H. Horizontal-Piping Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
  - 1. Adjustable, Steel Clevis Hangers (MSS Type 1): For suspension of noninsulated or insulated, stationary pipes NPS 1/2 to NPS 30 (DN 15 to DN 750).
  - 2. Yoke-Type Pipe Clamps (MSS Type 2): For suspension of up to 1050 deg F (566 deg C), pipes NPS 4 to NPS 24 (DN 100 to DN 600), requiring up to 4 inches (100 mm) of insulation.
  - 3. Carbon- or Alloy-Steel, Double-Bolt Pipe Clamps (MSS Type 3): For suspension of pipes NPS 3/4 to NPS 36 (DN 20 to DN 900), requiring clamp flexibility and up to 4 inches (100 mm) of insulation.
  - 4. Steel Pipe Clamps (MSS Type 4): For suspension of cold and hot pipes NPS 1/2 to NPS 24 (DN 15 to DN 600) if little or no insulation is required.
  - 5. Pipe Hangers (MSS Type 5): For suspension of pipes NPS 1/2 to NPS 4 (DN 15 to DN 100), to allow off-center closure for hanger installation before pipe erection.
  - 6. Adjustable, Swivel Split- or Solid-Ring Hangers (MSS Type 6): For suspension of noninsulated, stationary pipes NPS 3/4 to NPS 8 (DN 20 to DN 200).
  - 7. Adjustable, Steel Band Hangers (MSS Type 7): For suspension of noninsulated, stationary pipes NPS 1/2 to NPS 8 (DN 15 to DN 200).
  - 8. Adjustable Band Hangers (MSS Type 9): For suspension of noninsulated, stationary pipes NPS 1/2 to NPS 8 (DN 15 to DN 200).
  - 9. Adjustable, Swivel-Ring Band Hangers (MSS Type 10): For suspension of noninsulated, stationary pipes NPS 1/2 to NPS 8 (DN 15 to DN 200).
  - 10. Split Pipe Ring with or without Turnbuckle Hangers (MSS Type 11): For suspension of noninsulated, stationary pipes NPS 3/8 to NPS 8 (DN 10 to DN 200).
  - 11. Extension Hinged or Two-Bolt Split Pipe Clamps (MSS Type 12): For suspension of noninsulated, stationary pipes NPS 3/8 to NPS 3 (DN 10 to DN 80).





12. U-Bolts (MSS Type 24): For support of heavy pipes NPS 1/2 to NPS 30 (DN 15 to DN 750).
  13. Clips (MSS Type 26): For support of insulated pipes not subject to expansion or contraction.
- I. Hanger-Rod Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel Turnbuckles (MSS Type 13): For adjustment up to 6 inches (150 mm) for heavy loads.
  2. Steel Clevises (MSS Type 14): For 120 to 450 deg F (49 to 232 deg C) piping installations.
  3. Swivel Turnbuckles (MSS Type 15): For use with MSS Type 11, split pipe rings.
  4. Malleable-Iron Sockets (MSS Type 16): For attaching hanger rods to various types of building attachments.
  5. Steel Weldless Eye Nuts (MSS Type 17): For 120 to 450 deg F (49 to 232 deg C) piping installations.
- J. Building Attachments: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Steel or Malleable Concrete Inserts (MSS Type 18): For upper attachment to suspend pipe hangers from concrete ceiling.
  2. Top-Beam C-Clamps (MSS Type 19): For use under roof installations with bar-joist construction, to attach to top flange of structural shape.
  3. Side-Beam or Channel Clamps (MSS Type 20): For attaching to bottom flange of beams, channels, or angles.
  4. Center-Beam Clamps (MSS Type 21): For attaching to center of bottom flange of beams.
  5. Welded Beam Attachments (MSS Type 22): For attaching to bottom of beams if loads are considerable and rod sizes are large.
  6. C-Clamps (MSS Type 23): For structural shapes.
  7. Top-Beam Clamps (MSS Type 25): For top of beams if hanger rod is required tangent to flange edge.
  8. Side-Beam Clamps (MSS Type 27): For bottom of steel I-beams.
  9. Steel-Beam Clamps with Eye Nuts (MSS Type 28): For attaching to bottom of steel I-beams for heavy loads.
  10. Linked-Steel Clamps with Eye Nuts (MSS Type 29): For attaching to bottom of steel I-beams for heavy loads, with link extensions.
  11. Malleable-Beam Clamps with Extension Pieces (MSS Type 30): For attaching to structural steel.
  12. Welded-Steel Brackets: For support of pipes from below or for suspending from above by using clip and rod. Use one of the following for indicated loads:
    - a. Light (MSS Type 31): 750 lb (340 kg).
    - b. Medium (MSS Type 32): 1500 lb (680 kg).
    - c. Heavy (MSS Type 33): 3000 lb (1360 kg).
  13. Side-Beam Brackets (MSS Type 34): For sides of steel or wooden beams.



14. Plate Lugs (MSS Type 57): For attaching to steel beams if flexibility at beam is required.
  15. Horizontal Travelers (MSS Type 58): For supporting piping systems subject to linear horizontal movement where headroom is limited.
- K. Spring Hangers and Supports: Unless otherwise indicated and except as specified in piping system Sections, install the following types:
1. Restraint-Control Devices (MSS Type 47): Where indicated to control piping movement.
  2. Spring Cushions (MSS Type 48): For light loads if vertical movement does not exceed 1-1/4 inches (32 mm).
  3. Spring-Cushion Roll Hangers (MSS Type 49): For equipping Type 41, roll hanger with springs.
  4. Spring Sway Braces (MSS Type 50): To retard sway, shock, vibration, or thermal expansion in piping systems.
  5. Variable-Spring Hangers (MSS Type 51): Preset to indicated load and limit variability factor to 25 percent to allow expansion and contraction of piping system from hanger.
  6. Variable-Spring Base Supports (MSS Type 52): Preset to indicated load and limit variability factor to 25 percent to allow expansion and contraction of piping system from base support.
  7. Variable-Spring Trapeze Hangers (MSS Type 53): Preset to indicated load and limit variability factor to 25 percent to allow expansion and contraction of piping system from trapeze support.
  8. Constant Supports: For critical piping stress and if necessary to avoid transfer of stress from one support to another support, critical terminal, or connected equipment. Include auxiliary stops for erection, hydrostatic test, and load-adjustment capability. These supports include the following types:
    - a. Horizontal (MSS Type 54): Mounted horizontally.
    - b. Vertical (MSS Type 55): Mounted vertically.
    - c. Trapeze (MSS Type 56): Two vertical-type supports and one trapeze member.
- L. Comply with MSS SP-69 for trapeze pipe-hanger selections and applications that are not specified in piping system Sections.
- M. Comply with MFMA-103 for metal framing system selections and applications that are not specified in piping system Sections.
- N. Use powder-actuated fasteners or mechanical-expansion anchors instead of building attachments where required in concrete construction.

END OF SECTION 230529



## SECTION 230548 - VIBRATION CONTROLS FOR HVAC PIPING AND EQUIPMENT

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

A. This Section includes the following:

1. Spring hangers.
2. Steel and inertia, vibration isolation equipment bases.

#### 1.3 DEFINITIONS

- A. IBC: International Building Code.
- B. ICC-ES: ICC-Evaluation Service.

#### 1.4 ACTION SUBMITTALS

A. Product Data: For the following:

1. Include rated load, rated deflection, and overload capacity for each vibration isolation device.

### PART 2 - PRODUCTS

#### 2.1 VIBRATION ISOLATORS

- A. Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:



1. Ace Mountings Co., Inc.
2. Amber/Booth Company, Inc.
3. California Dynamics Corporation.
4. Isolation Technology, Inc.
5. Kinetics Noise Control.
6. Mason Industries.
7. Vibration Eliminator Co., Inc.
8. Vibration Isolation.
9. Vibration Mountings & Controls, Inc.

**B. Spring Hangers: Combination coil-spring and elastomeric-insert hanger with spring and insert in compression.**

1. Frame: Steel, fabricated for connection to threaded hanger rods and to allow for a maximum of 30 degrees of angular hanger-rod misalignment without binding or reducing isolation efficiency.
2. Outside Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
3. Minimum Additional Travel: 50 percent of the required deflection at rated load.
4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
6. Elastomeric Element: Molded, oil-resistant rubber or neoprene. Steel-washer-reinforced cup to support spring and bushing projecting through bottom of frame.
7. Self-centering hanger rod cap to ensure concentricity between hanger rod and support spring coil.

**2.2 VIBRATION ISOLATION EQUIPMENT BASES**

**A. Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:**

1. Amber/Booth Company, Inc.
2. California Dynamics Corporation.
3. Isolation Technology, Inc.
4. Kinetics Noise Control.
5. Mason Industries.
6. Vibration Eliminator Co., Inc.
7. Vibration Isolation.
8. Vibration Mountings & Controls, Inc.

**B. Inertia Base: Factory-fabricated, welded, structural-steel bases and rails ready for placement of cast-in-place concrete.**

1. Design Requirements: Lowest possible mounting height with not less than 1-inch (25-mm) clearance above the floor. Include equipment anchor bolts and auxiliary motor slide bases or rails.



- a. Include supports for suction and discharge elbows for pumps.
2. Structural Steel: Steel shapes, plates, and bars complying with ASTM A 36/A 36M. Bases shall have shape to accommodate supported equipment.
3. Support Brackets: Factory-welded steel brackets on frame for outrigger isolation mountings and to provide for anchor bolts and equipment support.
4. Fabrication: Fabricate steel templates to hold equipment anchor-bolt sleeves and anchors in place during placement of concrete. Obtain anchor-bolt templates from supported equipment manufacturer.

## 2.3 FACTORY FINISHES

- A. Finish: Manufacturer's standard paint applied to factory-assembled and -tested equipment before shipping.
  1. Powder coating on springs and housings.
  2. All hardware shall be galvanized. Hot-dip galvanize metal components for exterior use.
  3. Baked enamel or powder coat for metal components on isolators for interior use.
  4. Color-code or otherwise mark vibration isolation-control devices to indicate capacity range.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas and equipment to receive vibration isolation-control devices for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Examine roughing-in of reinforcement and cast-in-place anchors to verify actual locations before installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

END OF SECTION 230548



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## SECTION 230553 - IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

A. Section Includes:

1. Equipment labels.
2. Warning signs and labels.
3. Pipe labels.
4. Duct labels.
5. Stencils.
6. Valve tags.
7. Warning tags.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples: For color, letter style, and graphic representation required for each identification material and device.
- C. Equipment Label Schedule: Include a listing of all equipment to be labeled with the proposed content for each label.
- D. Valve numbering scheme.
- E. Valve Schedules: For each piping system to include in maintenance manuals.

### PART 2 - PRODUCTS

#### 2.1 EQUIPMENT LABELS

A. Metal Labels for Equipment:



1. Material and Thickness: aluminum, 0.032-inch (0.8-mm), or anodized aluminum, 0.032-inch (0.8-mm) minimum thickness, and having predrilled or stamped holes for attachment hardware.
  2. Letter Color: Black.
  3. Background Color: None – aluminum plate.
  4. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch (64 by 19 mm).
  5. Minimum Letter Size: 1/4 inch (6.4 mm) for name of units if viewing distance is less than 24 inches (600 mm), 1/2 inch (13 mm) for viewing distances up to 72 inches (1830 mm), and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-quarters the size of principal lettering.
  6. Fasteners: Stainless-steel rivets, or self-tapping screws.
  7. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.
- B. Label Content: Include equipment's Drawing designation or unique equipment number, Drawing numbers where equipment is indicated (plans, details, and schedules), and the Specification Section number and title where equipment is specified.
- C. Equipment Label Schedule: For each item of equipment to be labeled, on 8-1/2-by-11-inch (A4) bond paper. Tabulate equipment identification number, and identify Drawing numbers where equipment is indicated (plans, details, and schedules) and the Specification Section number and title where equipment is specified. Equipment schedule shall be included in operation and maintenance data.

## 2.2 WARNING SIGNS AND LABELS

- A. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/16 inch (1.6 mm) thick, and having predrilled holes for attachment hardware.
- B. Letter Color: Black on Yellow background, or White on Red background.
- C. Background Color: Red or Yellow – see 2.2.A above for reference.
- D. Maximum Temperature: Able to withstand temperatures up to 160 deg F (71 deg C).
- E. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch (64 by 19 mm).
- F. Minimum Letter Size: 1/4 inch (6.4 mm) for name of units if viewing distance is less than 24 inches (600 mm), 1/2 inch (13 mm) for viewing distances up to 72 inches (1830 mm), and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-quarters the size of principal lettering.
- G. Fasteners: Stainless-steel rivets, or self-tapping screws.
- H. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.
- I. Label Content: Include caution and warning information plus emergency notification instructions.





## 2.3 PIPE LABELS

- A. General Requirements for Manufactured Pipe Labels: Preprinted, color-coded, with lettering indicating service, and showing flow direction according to ASME A13.1.
- B. Pretensioned Pipe Labels: Precoiled, semirigid plastic formed to partially cover circumference of pipe and to attach to pipe without fasteners or adhesive.
- C. Self-Adhesive Pipe Labels: Printed plastic with contact-type, permanent-adhesive backing.
- D. Pipe Label Contents: Include identification of piping service using same designations or abbreviations as used on Drawings; also include pipe size and an arrow indicating flow direction.
  - 1. Flow-Direction Arrows: Integral with piping system service lettering to accommodate both directions or as separate unit on each pipe label to indicate flow direction.
  - 2. Lettering Size: Size letters according to ASME A13.1 for.

## 2.4 DUCT LABELS

- A. Material and Thickness: Multilayer, multicolor, plastic labels for mechanical engraving, 1/16 inch thick, and having predrilled holes for attachment hardware.
- B. Letter Color: White.
- C. Background Color: Blue.
- D. Maximum Temperature: Able to withstand temperatures up to 160 deg F (71 deg C).
- E. Minimum Label Size: Length and width vary for required label content, but not less than 2-1/2 by 3/4 inch (64 by 19 mm).
- F. Minimum Letter Size: 1/4 inch (6.4 mm) for name of units if viewing distance is less than 24 inches (600 mm), 1/2 inch (13 mm) for viewing distances up to 72 inches (1830 mm), and proportionately larger lettering for greater viewing distances. Include secondary lettering two-thirds to three-quarters the size of principal lettering.
- G. Fasteners: Stainless-steel rivets, or self-tapping screws.
- H. Adhesive: Contact-type permanent adhesive, compatible with label and with substrate.
- I. Duct Label Contents: Include identification of duct service using same designations or abbreviations as used on Drawings; also include duct size and an arrow indicating flow direction.
  - 1. Flow-Direction Arrows: Integral with duct system service lettering to accommodate both directions or as separate unit on each duct label to indicate flow direction.



## 2.5 VALVE TAGS

- A. Description: Stamped or engraved with 1/4-inch (6.4-mm) letters for piping system abbreviation and 1/2-inch (13-mm) numbers.
  - 1. Tag Material: Aluminum, 0.032-inch (0.8-mm), or anodized aluminum, 0.032-inch (0.8-mm) minimum thickness, and having predrilled or stamped holes for attachment hardware.
  - 2. Fasteners: Brass wire-link chain, or beaded chain, or S-hook.
- B. Valve Schedules: For each piping system, on 8-1/2-by-11-inch (A4) bond paper. Tabulate valve number, piping system, system abbreviation (as shown on valve tag), location of valve (room or space), normal-operating position (open, closed, or modulating), and variations for identification. Mark valves for emergency shutoff and similar special uses.
  - 1. Valve-tag schedule shall be included in operation and maintenance data.

## PART 3 - EXECUTION

### 3.1 PREPARATION

- A. Clean piping and equipment surfaces of substances that could impair bond of identification devices, including dirt, oil, grease, release agents, and incompatible primers, paints, and encapsulants.

### 3.2 GENERAL INSTALLATION REQUIREMENTS

- A. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- B. Coordinate installation of identifying devices with locations of access panels and doors.
- C. Install identifying devices before installing acoustical ceilings and similar concealment.

### 3.3 EQUIPMENT LABEL INSTALLATION

- A. Install or permanently fasten labels on each major item of mechanical equipment.
- B. Locate equipment labels where accessible and visible.
  - 1. Valve-Tag Colors:
    - a. Toxic and Corrosive Fluids: Black letters on a safety-orange background.
    - b. Flammable Fluids: Black letters on a safety-yellow background.
    - c. Combustible Fluids: White letters on a safety-brown background.
    - d. Potable and Other Water: White letters on a safety-green background.



- e. Compressed Air: White letters on a safety-blue background.
- f. Defined by User: White letters on a safety-purple background, black letters on a safety-white background, white letters on a safety-gray background, and white letters on a safety-black background

#### 3.4 WARNING-TAG INSTALLATION

- A. Write required message on, and attach warning tags to, equipment and other items where required.

END OF SECTION 230553



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## SECTION 230593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

A. Section Includes:

1. Balancing Air Systems:
  - a. Constant-volume air systems.

#### 1.3 DEFINITIONS

- A. AABC: Associated Air Balance Council.
- B. NEBB: National Environmental Balancing Bureau.
- C. TAB: Testing, adjusting, and balancing.
- D. TABB: Testing, Adjusting, and Balancing Bureau.
- E. TAB Specialist: An entity engaged to perform TAB Work.

#### 1.4 ACTION SUBMITTALS

- A. INFORMATIONAL SUBMITTALS
- B. Contract Documents Examination Report: Within 15 days of Contractor's Notice to Proceed, submit the Contract Documents review report as specified in Part 3.
- C. Strategies and Procedures Plan: Within 30 days of Contractor's Notice to Proceed, submit TAB strategies and step-by-step procedures as specified in "Preparation" Article.



- D. Certified TAB reports.
- E. Sample report forms.
- F. Instrument calibration reports, to include the following:
  - 1. Instrument type and make.
  - 2. Serial number.
  - 3. Application.
  - 4. Dates of use.
  - 5. Dates of calibration.

#### 1.5 QUALITY ASSURANCE

- A. TAB Contractor Qualifications: Engage a TAB entity certified by NEBB or TABB.
  - 1. TAB Field Supervisor: Employee of the TAB contractor and certified by NEBB or TABB.
  - 2. TAB Technician: Employee of the TAB contractor and who is certified by NEBB or TABB as a TAB technician.
- B. TAB Conference: Meet with Commissioner on approval of the TAB strategies and procedures plan to develop a mutual understanding of the details. Require the participation of the TAB field supervisor and technicians. Provide seven days' advance notice of scheduled meeting time and location.
  - 1. Agenda Items:
    - a. The Contract Documents examination report.
    - b. The TAB plan.
    - c. Coordination and cooperation of trades and subcontractors.
    - d. Coordination of documentation and communication flow.
- C. Certify TAB field data reports and perform the following:
  - 1. Review field data reports to validate accuracy of data and to prepare certified TAB reports.
  - 2. Certify that the TAB team complied with the approved TAB plan and the procedures specified and referenced in this Specification.
- D. TAB Report Forms: Use standard TAB contractor's forms approved by the Commissioner.
- E. Instrumentation Type, Quantity, Accuracy, and Calibration: As described in ASHRAE 111, Section 5, "Instrumentation."
- F. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1, Section 7.2.2 - "Air Balancing."



- G. ASHRAE/IESNA Compliance: Applicable requirements in ASHRAE/IESNA 90.1, Section 6.7.2.3 - "System Balancing."

#### 1.6 PROJECT CONDITIONS

- A. Full Occupancy: Site and existing building will be occupied during entire TAB period. Cooperate with Commissioner during TAB operations to minimize conflicts with building operations.
- B. Partial Occupancy: Completed areas of building may be occupied before Substantial Completion. Cooperate with Commissioner during TAB operations to minimize conflicts with building operations.

#### 1.7 COORDINATION

- A. Notice: Provide seven days' advance notice for each test. Include scheduled test dates and times.
- B. Perform TAB after leakage and pressure tests on air distribution systems have been satisfactorily completed.

### PART 2 - PRODUCTS (Not Applicable)

### PART 3 - EXECUTION

#### 3.1 TAB SPECIALISTS

- A. Subject to compliance with requirements, TAB contractors that may be engaged shall be AABC recognized.

#### 3.2 EXAMINATION

- A. Examine the Contract Documents to become familiar with Project requirements and to discover conditions in systems' designs that may preclude proper TAB of systems and equipment.
- B. Examine systems for installed balancing devices, such as test ports, gage cocks, thermometer wells, flow-control devices, balancing valves and fittings, and manual volume dampers. Verify that locations of these balancing devices are accessible.
- C. Examine the approved submittals for HVAC systems and equipment.



- D. Examine design data including HVAC system descriptions, statements of design assumptions for environmental conditions and systems' output, and statements of philosophies and assumptions about HVAC system and equipment controls.
- E. Examine ceiling plenums and underfloor air plenums used for supply, return, or relief air to verify that they meet the leakage class of connected ducts as specified in Section 233113 "Metal Ducts" and are properly separated from adjacent areas. Verify that penetrations in plenum walls are sealed and fire-stopped if required.
- F. Examine equipment performance data including fan and pump curves.
  - 1. Relate performance data to Project conditions and requirements, including system effects that can create undesired or unpredicted conditions that cause reduced capacities in all or part of a system.
  - 2. Calculate system-effect factors to reduce performance ratings of HVAC equipment when installed under conditions different from the conditions used to rate equipment performance. To calculate system effects for air systems, use tables and charts found in AMCA 201, "Fans and Systems," or in SMACNA's "HVAC Systems - Duct Design." Compare results with the design data and installed conditions.
- G. Examine system and equipment installations and verify that field quality-control testing, cleaning, and adjusting specified in individual Sections have been performed.
- H. Examine test reports specified in individual system and equipment Sections.
- I. Examine HVAC equipment and filters and verify that bearings are greased, belts are aligned and tight, and equipment with functioning controls is ready for operation.
- J. Examine terminal units, such as variable-air-volume boxes, and verify that they are accessible and their controls are connected and functioning.
- K. Examine strainers. Verify that startup screens are replaced by permanent screens with indicated perforations.
- L. Examine three-way valves for proper installation for their intended function of diverting or mixing fluid flows.
- M. Examine heat-transfer coils for correct piping connections and for clean and straight fins.
- N. Examine system pumps to ensure absence of entrained air in the suction piping.
- O. Examine operating safety interlocks and controls on HVAC equipment.
- P. Report deficiencies discovered before and during performance of TAB procedures. Observe and record system reactions to changes in conditions. Record default set points if different from indicated values.





### 3.3 PREPARATION

- A. Prepare a TAB plan that includes strategies and step-by-step procedures.
- B. Complete system-readiness checks and prepare reports. Verify the following:
  - 1. Permanent electrical-power wiring is complete.
  - 2. Hydronic systems are filled, clean, and free of air.
  - 3. Automatic temperature-control systems are operational.
  - 4. Equipment and duct access doors are securely closed.
  - 5. Balance, smoke, and fire dampers are open.
  - 6. Isolating and balancing valves are open and control valves are operational.
  - 7. Ceilings are installed in critical areas where air-pattern adjustments are required and access to balancing devices is provided.
  - 8. Windows and doors can be closed so indicated conditions for system operations can be met.

### 3.4 GENERAL PROCEDURES FOR TESTING AND BALANCING

- A. Perform testing and balancing procedures on each system according to the procedures contained in NEBB's "Procedural Standards for Testing, Adjusting, and Balancing of Environmental Systems" and in this Section.
  - 1. Comply with requirements in ASHRAE 62.1, Section 7.2.2 - "Air Balancing."
- B. Cut insulation, ducts, pipes, and equipment cabinets for installation of test probes to the minimum extent necessary for TAB procedures.
  - 1. After testing and balancing, patch probe holes in ducts with same material and thickness as used to construct ducts.
  - 2. After testing and balancing, install test ports and duct access doors that comply with requirements in Section 233300 "Air Duct Accessories."
  - 3. Install and join new insulation that matches removed materials. Restore insulation, coverings, vapor barrier, and finish according to Section 230711 "Duct Insulation."
- C. Mark equipment and balancing devices, including damper-control positions, valve position indicators, fan-speed-control levers, and similar controls and devices, with paint or other suitable, permanent identification material to show final settings.
- D. Take and report testing and balancing measurements in inch-pound (IP) units.

### 3.5 GENERAL PROCEDURES FOR BALANCING AIR SYSTEMS

- A. Prepare test reports for both fans and outlets. Obtain manufacturer's outlet factors and recommended testing procedures. Crosscheck the summation of required outlet volumes with required fan volumes.



- B. Prepare schematic diagrams of systems' "as-built" duct layouts.
- C. For variable-air-volume systems, develop a plan to simulate diversity.
- D. Determine the best locations in main and branch ducts for accurate duct-airflow measurements.
- E. Check airflow patterns from the outdoor-air louvers and dampers and the return- and exhaust-air dampers through the supply-fan discharge and mixing dampers.
- F. Locate start-stop and disconnect switches, electrical interlocks, and motor starters.
- G. Verify that motor starters are equipped with properly sized thermal protection.
- H. Check dampers for proper position to achieve desired airflow path.
- I. Check for airflow blockages.
- J. Check condensate drains for proper connections and functioning.
- K. Check for proper sealing of air-handling-unit components.
- L. Verify that air duct system is sealed as specified in Section 233113 "Metal Ducts."

### 3.6 PROCEDURES FOR CONSTANT-VOLUME AIR SYSTEMS

- A. Adjust fans to deliver total indicated airflows within the maximum allowable fan speed listed by fan manufacturer.
  - 1. Measure total airflow.
    - a. Where sufficient space in ducts is unavailable for Pitot-tube traverse measurements, measure airflow at terminal outlets and inlets and calculate the total airflow.
  - 2. Measure fan static pressures as follows to determine actual static pressure:
    - a. Measure outlet static pressure as far downstream from the fan as practical and upstream from restrictions in ducts such as elbows and transitions.
    - b. Measure static pressure directly at the fan outlet or through the flexible connection.
    - c. Measure inlet static pressure of single-inlet fans in the inlet duct as near the fan as possible, upstream from the flexible connection, and downstream from duct restrictions.
    - d. Measure inlet static pressure of double-inlet fans through the wall of the plenum that houses the fan.



3. Measure static pressure across each component that makes up an air-handling unit, rooftop unit, and other air-handling and -treating equipment.
    - a. Report the cleanliness status of filters and the time static pressures are measured.
  4. Measure static pressures entering and leaving other devices, such as sound traps, heat-recovery equipment, and air washers, under final balanced conditions.
  5. Review Record Documents to determine variations in design static pressures versus actual static pressures. Calculate actual system-effect factors. Recommend adjustments to accommodate actual conditions.
  6. Obtain approval from the Commissioner for adjustment of fan speed higher or lower than indicated speed. Comply with requirements in HVAC Sections for air-handling units for adjustment of fans, belts, and pulley sizes to achieve indicated air-handling-unit performance.
  7. Do not make fan-speed adjustments that result in motor overload. Consult equipment manufacturers about fan-speed safety factors. Modulate dampers and measure fan-motor amperage to ensure that no overload will occur. Measure amperage in full-cooling, full-heating, economizer, and any other operating mode to determine the maximum required brake horsepower.
- B. Adjust volume dampers for main duct, submain ducts, and major branch ducts to indicated airflows within specified tolerances.
1. Measure airflow of submain and branch ducts.
    - a. Where sufficient space in submain and branch ducts is unavailable for Pitot-tube traverse measurements, measure airflow at terminal outlets and inlets and calculate the total airflow for that zone.
  2. Measure static pressure at a point downstream from the balancing damper, and adjust volume dampers until the proper static pressure is achieved.
  3. Remeasure each submain and branch duct after all have been adjusted. Continue to adjust submain and branch ducts to indicated airflows within specified tolerances.
- C. Measure air outlets and inlets without making adjustments.
1. Measure terminal outlets using a direct-reading hood or outlet manufacturer's written instructions and calculating factors.
- D. Adjust air outlets and inlets for each space to indicated airflows within specified tolerances of indicated values. Make adjustments using branch volume dampers rather than extractors and the dampers at air terminals.
1. Adjust each outlet in same room or space to within specified tolerances of indicated quantities without generating noise levels above the limitations prescribed by the Contract Documents.
  2. Adjust patterns of adjustable outlets for proper distribution without drafts.



### 3.7 PROCEDURES FOR MOTORS

A. Motors, 1/2 HP and Larger: Test at final balanced conditions and record the following data:

1. Manufacturer's name, model number, and serial number.
2. Motor horsepower rating.
3. Motor rpm.
4. Efficiency rating.
5. Nameplate and measured voltage, each phase.
6. Nameplate and measured amperage, each phase.
7. Starter thermal-protection-element rating.

### 3.8 TOLERANCES

A. Set HVAC system's air flow rates within the following tolerances:

1. Supply, Return, and Exhaust Fans and Equipment with Fans: Plus or minus 5 percent.
2. Air Outlets and Inlets: Plus or minus 5 percent.
3. Heating-Water Flow Rate: Plus or minus 5 percent.
4. Cooling-Water Flow Rate: Plus or minus 5 percent.

### 3.9 REPORTING

- A. Initial Construction-Phase Report: Based on examination of the Contract Documents as specified in "Examination" Article, prepare a report on the adequacy of design for systems' balancing devices. Recommend changes and additions to systems' balancing devices to facilitate proper performance measuring and balancing. Recommend changes and additions to HVAC systems and general construction to allow access for performance measuring and balancing devices.
- B. Status Reports: Prepare weekly progress reports to describe completed procedures, procedures in progress, and scheduled procedures. Include a list of deficiencies and problems found in systems being tested and balanced. Prepare a separate report for each system and each building floor for systems serving multiple floors.

### 3.10 FINAL REPORT

- A. General: Prepare a certified written report; tabulate and divide the report into separate sections for tested systems and balanced systems.
1. Include a certification sheet at the front of the report's binder, signed and sealed by the certified testing and balancing engineer.
  2. Include a list of instruments used for procedures, along with proof of calibration.



- B. Final Report Contents: In addition to certified field-report data, include the following:
1. Fan curves.
  2. Manufacturers' test data.
  3. Field test reports prepared by system and equipment installers.
  4. Other information relative to equipment performance; do not include Shop Drawings and product data.
- C. General Report Data: In addition to form titles and entries, include the following data:
1. Title page.
  2. Name and address of the TAB contractor.
  3. Project name.
  4. Project location.
  5. Architect's name and address.
  6. Engineer's name and address.
  7. Contractor's name and address.
  8. Report date.
  9. Signature of TAB supervisor who certifies the report.
  10. Table of Contents with the total number of pages defined for each section of the report. Number each page in the report.
  11. Summary of contents including the following:
    - a. Indicated versus final performance.
    - b. Notable characteristics of systems.
    - c. Description of system operation sequence if it varies from the Contract Documents.
  12. Nomenclature sheets for each item of equipment.
  13. Data for terminal units, including manufacturer's name, type, size, and fittings.
  14. Notes to explain why certain final data in the body of reports vary from indicated values.
  15. Test conditions for fans and pump performance forms including the following:
    - a. Settings for outdoor-, return-, and exhaust-air dampers.
    - b. Conditions of filters.
    - c. Cooling coil, wet- and dry-bulb conditions.
    - d. Face and bypass damper settings at coils.
    - e. Fan drive settings including settings and percentage of maximum pitch diameter.
    - f. Inlet vane settings for variable-air-volume systems.
    - g. Settings for supply-air, static-pressure controller.
    - h. Other system operating conditions that affect performance.
- D. System Diagrams: Include schematic layouts of air and hydronic distribution systems. Present each system with single-line diagram and include the following:
1. Quantities of outdoor, supply, return, and exhaust airflows.
  2. Water and steam flow rates.
  3. Duct, outlet, and inlet sizes.
  4. Pipe and valve sizes and locations.



5. Terminal units.
  6. Balancing stations.
  7. Position of balancing devices.
- E. Fan Test Reports: For supply, return, and exhaust fans, include the following:
1. Fan Data:
    - a. System identification.
    - b. Location.
    - c. Make and type.
    - d. Model number and size.
    - e. Manufacturer's serial number.
    - f. Arrangement and class.
    - g. Sheave make, size in inches (mm), and bore.
    - h. Center-to-center dimensions of sheave, and amount of adjustments in inches (mm).
  2. Motor Data:
    - a. Motor make, and frame type and size.
    - b. Horsepower and rpm.
    - c. Volts, phase, and hertz.
    - d. Full-load amperage and service factor.
    - e. Sheave make, size in inches (mm), and bore.
    - f. Center-to-center dimensions of sheave, and amount of adjustments in inches (mm).
    - g. Number, make, and size of belts.
  3. Test Data (Indicated and Actual Values):
    - a. Total airflow rate in cfm (L/s).
    - b. Total system static pressure in inches wg (Pa).
    - c. Fan rpm.
    - d. Discharge static pressure in inches wg (Pa).
    - e. Suction static pressure in inches wg (Pa).
- F. Round, Flat-Oval, and Rectangular Duct Traverse Reports: Include a diagram with a grid representing the duct cross-section and record the following:
1. Report Data:
    - a. System and air-handling-unit number.
    - b. Location and zone.
    - c. Traverse air temperature in deg F (deg C).
    - d. Duct static pressure in inches wg (Pa).
    - e. Duct size in inches (mm).
    - f. Duct area in sq. ft. (sq. m).
    - g. Indicated air flow rate in cfm (L/s).
    - h. Indicated velocity in fpm (m/s).
    - i. Actual air flow rate in cfm (L/s).



- j. Actual average velocity in fpm (m/s).
- k. Barometric pressure in psig (Pa).

**G. Instrument Calibration Reports:**

- 1. Report Data:
  - a. Instrument type and make.
  - b. Serial number.
  - c. Application.
  - d. Dates of use.
  - e. Dates of calibration.

**3.11 INSPECTIONS**

**A. Initial Inspection:**

- 1. After testing and balancing are complete, operate each system and randomly check measurements to verify that the system is operating according to the final test and balance readings documented in the final report.
- 2. Check the following for each system:
  - a. Measure airflow of at least 25 percent of air outlets.
  - b. Measure room temperature at each thermostat/temperature sensor. Compare the reading to the set point.
  - c. Verify that balancing devices are marked with final balance position.
  - d. Note deviations from the Contract Documents in the final report.

**B. Final Inspection:**

- 1. After initial inspection is complete and documentation by random checks verifies that testing and balancing are complete and accurately documented in the final report, request that a final inspection be made by the Commissioner.
- 2. The TAB contractor's test and balance engineer shall conduct the inspection in the presence of the Commissioner.
- 3. The Commissioner shall randomly select measurements, documented in the final report, to be rechecked. Rechecking shall be limited to either 10 percent of the total measurements recorded or the extent of measurements that can be accomplished in a normal 8-hour business day.
- 4. If rechecks yield measurements that differ from the measurements documented in the final report by more than the tolerances allowed, the measurements shall be noted as "FAILED."
- 5. If the number of "FAILED" measurements is greater than 10 percent of the total measurements checked during the final inspection, the testing and balancing shall be considered incomplete and shall be rejected.



- C. TAB Work will be considered defective if it does not pass final inspections. If TAB Work fails, proceed as follows:
  - 1. Recheck all measurements and make adjustments. Revise the final report and balancing device settings to include all changes; resubmit the final report and request a second final inspection.
  - 2. If the second final inspection also fails, Commissioner may contract the services of another TAB contractor to complete TAB Work according to the Contract Documents and deduct the cost of the services from the original TAB contractor's final payment.
- D. Prepare test and inspection reports.

### 3.12 ADDITIONAL TESTS

- A. Within 90 days of completing TAB, perform additional TAB to verify that balanced conditions are being maintained throughout and to correct unusual conditions.
- B. Seasonal Periods: If initial TAB procedures were not performed during near-peak summer and winter conditions, perform additional TAB during near-peak summer and winter conditions.

END OF SECTION 230593





## SECTION 230711 – DUCT AND PIPING INSULATION

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

#### 1.2 DESCRIPTION

A. Field applied insulation for thermal efficiency and condensation control for

1. HVAC piping, ductwork plenums and equipment, engine exhaust pipe and muffler.

B. Definitions

1. ASJ: All service jacket, white finish facing or jacket.
2. Air conditioned space: Space having air temperature and/or humidity controlled by mechanical equipment.
3. Cold: Equipment, ductwork or piping handling media at design temperature of 16 degrees C (60 degrees F) or below.
4. Concealed: Ductwork and piping above ceilings and in chases, and pipe spaces.
5. Exposed: Piping, ductwork, and equipment exposed to view in finished areas including mechanical and electrical equipment rooms or exposed to outdoor weather. Attics and crawl spaces where air handling units are located are considered to be mechanical rooms. Shafts, chases, unfinished attics, crawl spaces and pipe basements are not considered finished areas.
6. FSK: Foil-scrim-kraft facing.
7. Hot: HVAC Ductwork handling air at design temperature above 16 degrees C (60 degrees F); HVAC equipment or piping handling media above 41 degrees C (105 degrees F); and piping media and equipment 32 to 230 degrees C (90 to 450 degrees F).
8. Density: kg/m<sup>3</sup> - kilograms per cubic meter (Pcf - pounds per cubic foot).
9. Runouts: Branch pipe connections up to 25-mm (one-inch) nominal size to fan coil units or reheat coils for terminal units.
10. Thermal conductance: Heat flow rate through materials.
  - a. Flat surface: Watt per square meter (BTU per hour per square foot).
  - b. Pipe or Cylinder: Watt per square meter (BTU per hour per linear foot).
11. Thermal Conductivity (k): Watt per meter, per degree C (BTU per inch thickness, per hour, per square foot, per degree F temperature difference).



12. Vapor Retarder (Vapor Barrier): A material which retards the transmission (migration) of water vapor. Performance of the vapor retarder is rated in terms of permeance (perms). For the purpose of this specification, vapor retarders shall have a maximum published permeance of 0.1 perms and vapor barriers shall have a maximum published permeance of 0.001 perms.
13. R: Pump recirculation.
14. FOS: Fuel oil supply.
15. FOR: Fuel oil return.

### 1.3 QUALITY ASSURANCE

- A. All insulation and applications shall conform to NYC Energy Conservation Code.
- B. Criteria:
  1. Comply with NFPA 90A, particularly paragraphs 4.3.3.1 through 4.3.3.6, 4.3.10.2.6, and 5.4.6.4.
  2. Test methods: ASTM E84, UL 723, or NFPA 255.
  3. Specified k factors are at 24 degrees C (75 degrees F) mean temperature unless stated otherwise. Where optional thermal insulation material is used, select thickness to provide thermal conductance no greater than that for the specified material. For pipe, use insulation manufacturer's published heat flow tables. For domestic hot water supply and return, run out insulation and condensation control insulation, no thickness adjustment need be made.
  4. All materials shall be compatible and suitable for service temperature, and shall not contribute to corrosion or otherwise attack surface to which applied in either the wet or dry state.
- C. Every package or standard container of insulation or accessories delivered to the job site for use must have a manufacturer's stamp or label giving the name of the manufacturer and description of the material.

### 1.4 SUBMITTALS

- A. Shop Drawings:
  1. All information, clearly presented, shall be included to determine compliance with drawings and specifications and ASTM, federal and military specifications.
    - a. Insulation materials: Specify each type used and state surface burning characteristics.
    - b. Insulation facings and jackets: Each type used. Make it clear that white finish will be furnished for exposed ductwork, casings and equipment.
    - c. Insulation accessory materials: Each type used.
    - d. Manufacturer's installation and fitting fabrication instructions for flexible unicellular insulation.
    - e. Make reference to applicable specification paragraph numbers for coordination.



## 1.5 STORAGE AND HANDLING OF MATERIAL

- A. Store materials in clean and dry environment, pipe covering jackets shall be clean and unmarred. Place adhesives in original containers. Maintain ambient temperatures and conditions as required by printed instructions of manufacturers of adhesives, mastics and finishing cements.

## PART 2 - PRODUCTS

### 2.1 MINERAL FIBER OR FIBER GLASS

- A. ASTM C612 (Board, Block), Class 1 or 2, density 48 kg/m<sup>3</sup> (3 pcf), k = 0.037 (0.26) at 24 degrees C (75 degrees F), external insulation for temperatures up to 204 degrees C (400 degrees F) with foil scrim (FSK) facing.

### 2.2 CALCIUM SILICATE

- A. Preformed pipe Insulation: ASTM C533, Type I and Type II with indicator denoting asbestos-free material.
- B. Premolded Pipe Fitting Insulation: ASTM C533, Type I and Type II with indicator denoting asbestos-free material.
- C. Equipment Insulation: ASTM C533, Type I and Type II
- D. Characteristics:

Insulation Characteristics		
ITEMS	TYPE I	TYPE II
Temperature, maximum degrees C (degrees F)	649 (1200)	927 (1700)
Density (dry), Kg/m <sup>3</sup> (lb/ ft3)	232 (14.5)	288 (18)
Thermal conductivity: Min W/ m K (Btu in/h ft <sup>2</sup> degrees F)@ mean temperature of 93 degrees C (200 degrees F)	0.059 (0.41)	0.078 (0.540)
Surface burning characteristics:		
Flame spread Index, Maximum	0	0
Smoke Density index, Maximum	0	0

### 2.3 INSULATION FACINGS AND JACKETS

- A. Vapor Retarder, higher strength with low water permeance = 0.02 or less perm rating, Beach puncture 50 units for insulation facing on exposed ductwork, casings and equipment, and for



pipe insulation jackets. Facings and jackets shall be all service type (ASJ) or PVDC Vapor Retarder jacketing.

- B. ASJ jacket shall be white kraft bonded to 0.025 mm (1 mil) thick aluminum foil, fiberglass reinforced, with pressure sensitive adhesive closure. Comply with ASTM C1136. Beach puncture 50 units, Suitable for painting without sizing. Jackets shall have minimum 40 mm (1-1/2 inch) lap on longitudinal joints and minimum 75 mm (3 inch) butt strip on end joints. Butt strip material shall be same as the jacket. Lap and butt strips shall be self-sealing type with factory-applied pressure sensitive adhesive.
- C. Vapor Retarder medium strength with low water vapor permeance of 0.02 or less perm rating), Beach puncture 25 units: Foil-Scrim-Kraft (FSK) or PVDC vapor retarder jacketing type for concealed ductwork and equipment.
- D. Field applied vapor barrier jackets shall be provided, in addition to the specified facings and jackets, on all exterior piping and ductwork as well as on interior piping and ductwork. The vapor barrier jacket shall consist of a multi-layer laminated cladding with a maximum water vapor permeance of 0.001 perms. The minimum puncture resistance shall be 35 cm-kg (30 inch-pounds) for interior locations and 92 cm-kg (80 inch-pounds) for exterior or exposed locations or where the insulation is subject to damage.
- E. Glass Cloth Jackets: Presized, minimum 0.18 kg per square meter (7.8 ounces per square yard), 2000 kPa (300 psig) bursting strength with integral vapor retarder where required or specified. Weather proof if utilized for outside service.
- F. Factory composite materials may be used provided that they have been tested and certified by the manufacturer.
- G. Pipe fitting insulation covering (jackets): Fitting covering shall be premolded to match shape of fitting and shall be polyvinyl chloride (PVC) conforming to Fed Spec L-P-335, composition A, Type II Grade GU, and Type III, minimum thickness 0.7 mm (0.03 inches). Provide color matching vapor retarder pressure sensitive tape.
- H. Aluminum Jacket-Piping systems and circular breeching and stacks: ASTM B209, 3003 alloy, H-14 temper, 0.6 mm (0.023 inch) minimum thickness with locking longitudinal joints. Jackets for elbows, tees and other fittings shall be factory-fabricated to match shape of fitting and of 0.6 mm (0.024) inch minimum thickness aluminum. Fittings shall be of same construction as straight run jackets but need not be of the same alloy. Factory-fabricated stainless steel bands shall be installed on all circumferential joints. Bands shall be 13 mm (0.5 inch) wide on 450 mm (18 inch) centers. System shall be weatherproof if utilized for outside service.
- I. Aluminum jacket-Rectangular breeching: ASTM B209, 3003 alloy, H-14 temper, 0.5 mm (0.020 inches) thick with 32 mm (1-1/4 inch) corrugations or 0.8 mm (0.032 inches) thick with no corrugations. System shall be weatherproof if used for outside service.

## 2.4 PIPE COVERING PROTECTION SADDLES

- A. Cold pipe support: Premolded pipe insulation 180 degrees (half-shells) on bottom half of pipe at supports. Material shall be cellular glass or high density Polyisocyanurate insulation of the



same thickness as adjacent insulation. Density of Polyisocyanurate insulation shall be a minimum of 48 kg/m<sup>3</sup> (3.0 pcf).

Nominal Pipe Size and Accessories Material (Insert Blocks)	
Nominal Pipe Size mm (inches)	Insert Blocks mm (inches)
Up through 125 (5)	150 (6) long
150 (6)	150 (6) long
200 (8), 250 (10), 300 (12)	225 (9) long
350 (14), 400 (16)	300 (12) long
450 through 600 (18 through 24)	350 (14) long

- B. Warm or hot pipe supports: Premolded pipe insulation (180 degree half-shells) on bottom half of pipe at supports. Material shall be high density Polyisocyanurate (for temperatures up to 149 degrees C [300 degrees F]), cellular glass or calcium silicate. Insulation at supports shall have same thickness as adjacent insulation. Density of Polyisocyanurate insulation shall be a minimum of 48 kg/m<sup>3</sup> (3.0 pcf).

## 2.5 ADHESIVE, MASTIC, CEMENT

- A. Mil. Spec. MIL-A-3316, Class 1: Jacket and lap adhesive and protective finish coating for insulation.
- B. Mil. Spec. MIL-A-3316, Class 2: Adhesive for laps and for adhering insulation to metal surfaces.
- C. Mil. Spec. MIL-A-24179, Type II Class 1: Adhesive for installing flexible unicellular insulation and for laps and general use.
- D. Mil. Spec. MIL-C-19565, Type I: Protective finish for outdoor use.
- E. Mil. Spec. MIL-C-19565, Type I or Type II: Vapor barrier compound for indoor use.
- F. ASTM C449: Mineral fiber hydraulic-setting thermal insulating and finishing cement.
- G. Other: Insulation manufacturers' published recommendations.

## 2.6 MECHANICAL FASTENERS

- A. Pins, anchors: Welded pins, or metal or nylon anchors with galvanized steel-coated or fiber washer, or clips. Pin diameter shall be as recommended by the insulation manufacturer.
- B. Staples: Outward clinching monel or galvanized steel.



- C. Wire: 1.3 mm thick (18 gage) soft annealed galvanized or 1.9 mm (14 gage) copper clad steel or nickel copper alloy.
- D. Bands: 13 mm (0.5 inch) nominal width, brass, galvanized steel, aluminum or stainless steel.

## 2.7 REINFORCEMENT AND FINISHES

- A. Glass fabric, open weave: ASTM D1668, Type III (resin treated) and Type I (asphalt treated).
- B. Glass fiber fitting tape: Mil. Spec MIL-C-20079, Type II, Class 1.
- C. Tape for Flexible Elastomeric Cellular Insulation: As recommended by the insulation manufacturer.
- D. Hexagonal wire netting: 25 mm (one inch) mesh, 0.85 mm thick (22 gage) galvanized steel.
- E. Corner beads: 50 mm (2 inch) by 50 mm (2 inch), 0.55 mm thick (26 gage) galvanized steel; or, 25 mm (1 inch) by 25 mm (1 inch), 0.47 mm thick (28 gage) aluminum angle adhered to 50 mm (2 inch) by 50 mm (2 inch) Kraft paper.
- F. PVC fitting cover: Fed. Spec L-P-535, Composition A, 11-86 Type II, Grade GU, with Form B Mineral Fiber insert, for media temperature 4 degrees C (40 degrees F) to 121 degrees C (250 degrees F). Below 4 degrees C (40 degrees F) and above 121 degrees C (250 degrees F). Provide double layer insert. Provide color matching vapor barrier pressure sensitive tape.

## 2.8 FLAME AND SMOKE

- A. Unless shown otherwise all assembled systems shall meet flame spread 25 and smoke developed 50 rating as developed under ASTM, NFPA and UL standards and specifications. See paragraph 1.3 "Quality Assurance".

## PART 3 - EXECUTION

### 3.1 GENERAL REQUIREMENTS

- A. Required pressure tests of duct and piping joints and connections shall be completed for application of insulation. Surface shall be clean and dry with all foreign materials, such as dirt, oil, loose scale and rust removed.
- B. Except for specific exceptions, insulate generator exhaust and supply air ducts and plenums, engine exhaust pipe and muffler and outdoor fuel piping. Insulate each pipe and duct individually. Do not use scrap pieces of insulation where a full length section will fit.
- C. Insulation materials shall be installed in a first class manner with smooth and even surfaces, with jackets and facings drawn tight and smoothly cemented down at all laps. Insulation shall be continuous through all sleeves and openings, except at fire dampers and duct heaters (NFPA



90A). Vapor retarders shall be continuous and uninterrupted throughout systems with operating temperature 16 degrees C (60 degrees F) and below. Lap and seal vapor retarder over ends and exposed edges of insulation. Anchors, supports and other metal projections through insulation on cold surfaces shall be insulated and vapor sealed for a minimum length of 150 mm (6 inches).

- D. Install vapor stops at all insulation terminations on either side of valves, pumps and equipment and particularly in straight lengths of pipe insulation.
- E. Insulation on hot piping and equipment shall be terminated square at items not to be insulated, access openings and nameplates. Cover all exposed raw insulation with white sealer or jacket material.
- F. Protect all insulations outside of buildings with aluminum jacket using lock joint or other approved system for a continuous weather tight system. Access doors and other items requiring maintenance or access shall be removable and sealable.
- G. HVAC work not to be insulated:
  - 1. In hot piping: Flexible connectors, control valves, safety valves and discharge vent piping, vacuum breakers, thermostatic vent valves.
- H. Apply insulation materials subject to the manufacturer's recommended temperature limits. Apply adhesives, mastic and coatings at the manufacturer's recommended minimum coverage.
- I. Elbows, flanges and other fittings shall be insulated with the same material as is used on the pipe straights. The elbow/ fitting insulation shall be field-fabricated, mitered or factory prefabricated to the necessary size and shape to fit on the elbow/ fitting. Use of polyurethane spray-foam to fill a PVC elbow jacket is prohibited on cold applications.
- J. Firestop Pipe and Duct insulation:
  - 1. Provide firestopping insulation at fire and smoke barriers through penetrations. Fire stopping insulation shall be UL listed.
  - 2. Pipe and duct penetrations requiring fire stop insulation including, but not limited to the following:
    - a. Pipe risers through floors
    - b. Pipe or duct chase walls and floors
    - c. Smoke partitions
    - d. Fire partitions
- K. Freeze protection of above grade outdoor piping (over heat tracing tape): 26 mm (10 inch) thick insulation, for all pipe sizes 75 mm(3 inches) and smaller and 25 mm(1inch) thick insulation for larger pipes. Provide metal jackets for all pipes.
- L. Provide vapor barrier jackets over insulation as follows:
  - 1. All piping and ductwork exposed to outdoor weather.



2. All interior piping and ducts conveying fluids exposed to outdoor air (i.e. in attics, ventilated (not air conditioned) spaces, etc.) below ambient air temperature in high humidity areas.

M. Provide metal jackets over insulation as follows:

1. All piping and ducts exposed to outdoor weather.
2. Piping exposed in building, within 1800 mm (6 feet) of the floor, that connects to sterilizers, kitchen and laundry equipment. Jackets may be applied with pop rivets. Provide aluminum angle ring escutcheons at wall, ceiling or floor penetrations.
3. A 50 mm (2 inch) overlap is required at longitudinal and circumferential joints.

### 3.2 INSULATION INSTALLATION

A. Mineral Fiber Board (for Generator Exhaust Duct and Air Intake Duct):

1. Plain board:
  - a. Insulation shall be scored, beveled or mitered to provide tight joints and be secured to equipment with bands spaced 225 mm (9 inches) on center for irregular surfaces or with pins and clips on flat surfaces. Use corner beads to protect edges of insulation.
  - b. For hot equipment: Stretch 25 mm (1 inch) mesh wire, with edges wire laced together, over insulation and finish with insulating and finishing cement applied in one coat, 6 mm (1/4 inch) thick, trowel led to a smooth finish.
2. Exposed, unlined ductwork and equipment in unfinished areas, mechanical and electrical equipment rooms and attics, interstitial spaces and duct work exposed to outdoor weather:
  - a. Outside air intake ducts: no insulation required 25 mm (one inch) thick insulation faced with ASJ.

B. Molded Mineral Fiber Pipe and Tubing Covering (Outdoor Fuel Piping):

1. Fit insulation to pipe or duct, aligning longitudinal joints. Seal longitudinal joint laps and circumferential butt strips by rubbing hard with a nylon sealing tool to assure a positive seal. Staples may be used to assist in securing insulation. Seal all vapor retarder penetrations on cold piping with a generous application of vapor barrier mastic. Provide inserts and install with metal insulation shields at outside pipe supports. Install freeze protection insulation over heating cable.
2. Contractor's options for fitting, flange and valve insulation:
  - a. Insulating and finishing cement for sizes less than 100 mm (4 inches) operating at surface temperature of 16 degrees C (61 degrees F) or more.
  - b. Factory premolded, one piece PVC covers with mineral fiber, (Form B), inserts. Provide two insert layers for pipe temperatures below 4 degrees C (40 degrees F),





- or above 121 degrees C (250 degrees F). Secure first layer of insulation with twine. Seal seam edges with vapor barrier mastic and secure with fitting tape.
- c. Factory molded, ASTM C547 or field mitered sections, joined with adhesive or wired in place. For hot piping finish with a smoothing coat of finishing cement. For cold fittings, 16 degrees C (60 degrees F) or less, vapor seal with a layer of glass fitting tape imbedded between two 2 mm (1/16 inch) coats of vapor barrier mastic.
  - d. Fitting tape shall extend over the adjacent pipe insulation and overlap on itself at least 50 mm (2 inches).
3. Nominal thickness in millimeters and inches specified in the schedule at the end of this section.
- C. Cellular Glass Insulation:
- 1. Pipe and tubing, covering nominal thickness in millimeters and inches as specified in the schedule at the end of this section.
    - a. Provide expansion chambers for pipe loops, anchors and wall penetrations as recommended by the insulation manufacturer.
- D. Calcium Silicate (Generator Engine Exhaust Pipe and Muffler):
- 1. Engine Exhaust Insulation for Emergency Generator: Type II, Class D, 3-inch nominal thickness. Cover exhaust completely from engine through roof or wall construction, including muffler. Secure with 16 AWG galvanized annealed wire or 0.38 x 12 mm 0.015 x 1/2 IN wide galvanized bands on 300 mm 12 IN maximum centers. Anchor wire and bands to welded pins, clips or angles. Apply 25 mm 1 IN hex galvanized wire over insulation. Fill voids with 6 mm 1/4 IN insulating cement.

END OF SECTION 230711

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**SECTION 230993 - AUTOMATIC TEMPERATURE CONTROL SYSTEM****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

**1.2 GENERAL DESCRIPTION**

A. The automatic temperature control (ATC ) contractor shall furnish and install:

1. A complete automatic temperature and fuel supply control system to execute sequence of operations as described in contract drawings.
2. All line voltage and low voltage wiring, conduit, panels, and accessories for a complete operational ATC system. The ATC contractor shall be responsible for all electrical work associated with the ATC, any ATC interface to any other systems including but not limited to HVAC systems, emergency generator systems, and as shown in the contract documents. All power for the ATC system shall be furnished and installed by the ATC contractor. Refer to the electrical section of this specification for the installation requirements for low and line voltage wiring.
3. All hardware and software required to integrate all mechanical and electrical systems as specified.
4. Refer to details, schedules and sequence of operations for additional requirements.
5. Control dampers (also acting as combination fire/smoke dampers).
6. CO and fuel fume detection system.

**1.3 QUALITY ASSURANCE**

A. Materials and equipment shall be new and shall be catalogued products of known controls company. All portions of the system must be of the same manufacturer.

**1.4 WARRANTY**

A. The contractor shall warranty the ATC to be free from defects in workmanship and material for a period of one (1) year from the date of acceptance by the City of New York. During the warranty period, the contractor shall furnish all labor to repair or replace all items or components that fail due to defects in workmanship or material. This contractor shall also provide all system software upgrades during the warranty period.



## 1.5 INSTRUCTION

- A. The contractor shall provide competent instructors to give full instruction to designated personnel in the adjustment, operation and maintenance of the system installed rather than a general instruction course. Instructors shall be thoroughly familiar with all aspects of the subject matter they are to teach. All instruction shall be held during normal work hours of 8:00 a.m. To 4:30 p.m. Weekdays. Provide 6 hours of instruction.

## 1.6 SUBMITTALS

- A. Provide all submittals as required, including but not limited to technical bulletins and catalog data for all equipment and system components.
- B. Provide system diagrams showing quantity and location of all AT equipment and control panels. Coordinate origin and location of power feeds to AT equipment.
- C. Provide control system flow diagrams, ladder wiring diagrams, bill of materials and narrative description of sequence of operation for all systems controlled. Include alarm and emergency sequences and equipment interlocks. Shop drawing submittals shall be complete full size drawings, 11" x 17" minimum, and include sufficient data to indicate complete compliance with contract documents.
- D. Provide full description of the method of interfacing (software and hardware) with other equipment provided in other sections of specification.
- E. Provide valve and damper schedule. Provide identification numbers, location, system, dimensions and performance data. Include damper leakage rates.

## PART 2 – PRODUCTS

### 2.1 ACCEPTABLE MANUFACTURERS/INSTALLERS

- A. The ATC system and all AT components shall be Honeywell, Johnson Controls, Automated Logic or approved equal for temperature controls, and Gas Guard, Bacharach, RKI or approved equal for CO and fume detection.

### 2.2 FIELD DEVICES

#### A. General

- 1. All devices and equipment shall be approved for installation.

#### B. Thermostat

- 1. Thermostats shall be line or low voltage snap type with sensor accuracy of +/- .5 °f.



**C. Damper Actuators**

1. Damper actuators shall be electronic type, 24 vac with spring return. Size actuator for torque requirements of damper. Provide limit switches to protect motor against burnout. Damper motor shall be Belimo, Honeywell, Johnson Control or approved equal.

**D. Alarm Panels (for CO and Fuel Fume Detectors)**

1. Unitized cabinet with suitable brackets for wall or floor mounting. Fabricate of 0.06-inch- (1.5-mm-) thick, furniture-quality steel or extruded-aluminum alloy, totally enclosed, with hinged doors and keyed lock and with manufacturer's standard shop-painted finish. Provide common keying for all panels.
2. Indicating light for each alarm point, single horn, acknowledge switch, and test switch, mounted on hinged cover.
  - a. Alarm Condition: Indicating light flashes and horn sounds.
  - b. Acknowledge Switch: Horn is silent and indicating light is steady.
  - c. Second Alarm: Horn sounds and indicating light is steady.
  - d. Alarm Condition Cleared: System is reset and indicating light is extinguished.
  - e. Contacts in alarm panel allow remote monitoring by independent alarm company.

**PART 3 - EXECUTION**

**3.1 GENERAL**

- A. Provide all relays, switches, sources of electricity and all other auxiliaries, accessories and connections necessary to make a complete operable system in accordance with the sequences specified. Install controls so that adjustments and calibrations can be readily made. Controls are to be installed by this contractor.
- B. Install surface mounted control devices, tubing and raceways on brackets to clear the final finished surface on insulation. Conceal control conduit and wiring in all spaces except in the mechanical equipment rooms and in unfinished spaces. Exposed wiring in mechanical spaces shall be in rigid conduits. Install in parallel banks with all changes in directions made at 90 degree angles.
- C. Normal (no signal or electricity) positions for controlled components :
  1. Outside air dampers                      closed
  2. Recirculation air dampers            opened
  3. Exhaust air dampers                    closed
- D. Perform all wiring in accordance with all local and national codes including the NEC. Install all line voltage wiring, concealed or exposed shall be in conduits in accordance with the division 26 specification.



3.2 COMMISSIONING, TESTING AND ACCEPTANCE

- A. Each ATC program shall be placed on line and commissioned. The contractor shall, in the presence of the City of New York and Commissioner, demonstrate each programmed sequence of operations and compare the results in writing. In addition, each control loop shall be tested to verify proper response and stable control, within specified accuracy.
- B. The contractor shall demonstrate all points and system functions until all devices and functions meet specification.
- C. The ATC contractor shall supply all test equipment.

END OF SECTION 230993



## SECTION 233113 - METAL DUCTS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

A. Section Includes:

1. Single-wall rectangular ducts and fittings.
2. Single-wall round ducts and fittings.
3. Sheet metal materials.
4. Sealants and gaskets.
5. Hangers and supports.

B. Related Sections:

1. Section 230593 "Testing, Adjusting, and Balancing for HVAC" for testing, adjusting, and balancing requirements for metal ducts.
2. Section 233300 "Air Duct Accessories" for dampers, sound-control devices, duct-mounting access doors and panels, turning vanes, and flexible ducts.

#### 1.3 PERFORMANCE REQUIREMENTS

- A. Duct Standards: Duct construction, including sheet metal thicknesses, seam and joint construction, reinforcements, and hangers and supports, shall comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" and performance requirements and design criteria indicated in "Duct Schedule" Article.
- B. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1.



#### 1.4 ACTION SUBMITTALS

A. Product Data: For each type of the following products:

1. Liners and adhesives.
2. Sealants and gaskets.

B. Shop Drawings:

1. Fabrication, assembly, and installation, including plans, elevations, sections, components, and attachments to other work.
2. Factory- and shop-fabricated ducts and fittings.
3. Duct layout indicating sizes, configuration, liner material, and static-pressure classes.
4. Elevation of top of ducts.
5. Dimensions of main duct runs from building grid lines.
6. Fittings.
7. Reinforcement and spacing.
8. Seam and joint construction.
9. Penetrations through fire-rated and other partitions.
10. Equipment installation based on equipment being used on Project.
11. Locations for duct accessories, including dampers, turning vanes, and access doors and panels.
12. Hangers and supports, including methods for duct and building attachment, seismic restraints, and vibration isolation.

C. Engineering Submittal:

1. Sheet metal thicknesses.
2. Joint and seam construction and sealing.
3. Reinforcement details and spacing.
4. Materials, fabrication, assembly, and spacing of hangers and supports.
5. Design Calculations: Calculations, including analysis data signed and sealed by the qualified professional engineer licensed by the State of New York responsible for their preparation for selecting hangers and supports and seismic restraints.

#### 1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

1. Duct installation in congested spaces, indicating coordination with general construction, building components, and other building services. Indicate proposed changes to duct layout.
2. Suspended ceiling components.
3. Structural members to which duct will be attached.
4. Size and location of initial access modules for acoustical tile.
5. Penetrations of smoke barriers and fire-rated construction.





6. Items penetrating finished ceiling including the following:

- a. Lighting fixtures.
- b. Air outlets and inlets.
- c. Speakers.
- d. Sprinklers.
- e. Access panels.
- f. Perimeter moldings.

B. Welding certificates.

C. Field quality-control reports.

1.6 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel," for hangers and supports. AWS D9.1M/D9.1, "Sheet Metal Welding Code," for duct joint and seam welding.
- B. Welding Qualifications: Qualify procedures and personnel according to the following:
  1. AWS D1.1/D1.1M, "Structural Welding Code - Steel," for hangers and supports.
  2. AWS D9.1M/D9.1, "Sheet Metal Welding Code," for duct joint and seam welding.
- C. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and System Start-up."
- D. ASHRAE/IESNA Compliance: Applicable requirements in ASHRAE/IESNA 90.1, Section 6.4.4 - "HVAC System Construction and Insulation."

PART 2 - PRODUCTS

2.1 SINGLE-WALL RECTANGULAR DUCTS AND FITTINGS

- A. General Fabrication Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" based on indicated static-pressure class unless otherwise indicated.
- B. Transverse Joints: Select joint types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-1, "Rectangular Duct/Transverse Joints," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."



- C. Longitudinal Seams: Select seam types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 2-2, "Rectangular Duct/Longitudinal Seams," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- D. Elbows, Transitions, Offsets, Branch Connections, and Other Duct Construction: Select types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 4, "Fittings and Other Construction," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."

## 2.2 SINGLE-WALL ROUND DUCTS AND FITTINGS

- A. General Fabrication Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 3, "Round, Oval, and Flexible Duct," based on indicated static-pressure class unless otherwise indicated.
  - 1. Manufacturers: Subject to compliance with requirements, provide products by one of the following or approved equal:
    - a. Lindab Inc.
    - b. McGill AirFlow LLC.
    - c. SEMCO Incorporated.
    - d. Sheet Metal Connectors, Inc.
    - e. Spiral Manufacturing Co., Inc.
- B. Transverse Joints: Select joint types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-1, "Round Duct Transverse Joints," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
  - 1. Transverse Joints in Ducts Larger Than 60 Inches (1524 mm) in Diameter: Flanged.
- C. Longitudinal Seams: Select seam types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-2, "Round Duct Longitudinal Seams," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- D. Tees and Laterals: Select types and fabricate according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-5, "90 Degree Tees and Laterals," and Figure 3-6, "Conical Tees," for static-pressure class, applicable sealing requirements, materials involved, duct-support intervals, and other provisions in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."



## 2.3 SHEET METAL MATERIALS

- A. General Material Requirements: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods unless otherwise indicated. Sheet metal materials shall be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.
- B. Galvanized Sheet Steel: Comply with ASTM A 653/A 653M.
  - 1. Galvanized Coating Designation: G90 (Z275).
  - 2. Finishes for Surfaces Exposed to View: Mill phosphatized.
- C. Aluminum Sheets: Comply with ASTM B 209 (ASTM B 209M) Alloy 3003, H14 temper; with mill finish for concealed ducts, and standard, one-side bright finish for duct surfaces exposed to view.
- D. Reinforcement Shapes and Plates: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.
  - 1. Where black- and galvanized-steel shapes and plates are used to reinforce aluminum ducts, isolate the different metals with butyl rubber, neoprene, or EPDM gasket materials.
- E. Tie Rods: Galvanized steel, 1/4-inch (6-mm) minimum diameter for lengths 36 inches (900 mm) or less; 3/8-inch (10-mm) minimum diameter for lengths longer than 36 inches (900 mm).
- F. Insulation Pins and Washers:
  - 1. Cupped-Head, Capacitor-Discharge-Weld Pins: Copper- or zinc-coated steel pin, fully annealed for capacitor-discharge welding, 0.135-inch- (3.5-mm-) diameter shank, length to suit depth of insulation indicated with integral 1-1/2-inch (38-mm) galvanized carbon-steel washer.
  - 2. Insulation-Retaining Washers: Self-locking washers formed from 0.016-inch- (0.41-mm-) thick galvanized steel; with beveled edge sized as required to hold insulation securely in place but not less than 1-1/2 inches (38 mm) in diameter.

## 2.4 SEALANT AND GASKETS

- A. General Sealant and Gasket Requirements: Surface-burning characteristics for sealants and gaskets shall be a maximum flame-spread index of 25 and a maximum smoke-developed index of 50 when tested according to UL 723; certified by an NRTL.
- B. Two-Part Tape Sealing System:
  - 1. Tape: Woven cotton fiber impregnated with mineral gypsum and modified acrylic/silicone activator to react exothermically with tape to form hard, durable, airtight seal.
  - 2. Tape Width: 4 inches (102 mm).
  - 3. Sealant: Modified styrene acrylic.
  - 4. Water resistant.



5. Mold and mildew resistant.
  6. Maximum Static-Pressure Class: 10-inch wg (2500 Pa), positive and negative.
  7. Service: Indoor and outdoor.
  8. Service Temperature: Minus 40 to plus 200 deg F (Minus 40 to plus 93 deg C).
  9. Substrate: Compatible with galvanized sheet steel (both PVC coated and bare), stainless steel, or aluminum.
  10. For indoor applications, sealant shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
  11. Sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- C. Water-Based Joint and Seam Sealant:
1. Application Method: Brush on.
  2. Solids Content: Minimum 65 percent.
  3. Shore A Hardness: Minimum 20.
  4. Water resistant.
  5. Mold and mildew resistant.
  6. VOC: Maximum 75 g/L (less water).
  7. Maximum Static-Pressure Class: 10-inch wg (2500 Pa), positive and negative.
  8. Service: Indoor or outdoor.
  9. Substrate: Compatible with galvanized sheet steel (both PVC coated and bare), stainless steel, or aluminum sheets.
- D. Solvent-Based Joint and Seam Sealant:
1. Application Method: Brush on.
  2. Base: Synthetic rubber resin.
  3. Solvent: Toluene and heptane.
  4. Solids Content: Minimum 60 percent.
  5. Shore A Hardness: Minimum 60.
  6. Water resistant.
  7. Mold and mildew resistant.
  8. For indoor applications, sealant shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
  9. VOC: Maximum 395 g/L.
  10. Sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
  11. Maximum Static-Pressure Class: 10-inch wg (2500 Pa), positive or negative.
  12. Service: Indoor or outdoor.
  13. Substrate: Compatible with galvanized sheet steel (both PVC coated and bare), stainless steel, or aluminum sheets.
- E. Flanged Joint Sealant: Comply with ASTM C 920.
1. General: Single-component, acid-curing, silicone, elastomeric.
  2. Type: S.
  3. Grade: NS.



4. Class: 25.
5. Use: O.
6. For indoor applications, sealant shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method.24).
7. Sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

F. Flange Gaskets: Butyl rubber, neoprene, or EPDM polymer with polyisobutylene plasticizer.

G. Round Duct Joint O-Ring Seals:

1. Seal shall provide maximum leakage class of 3 cfm/100 sq. ft. at 1-inch wg (0.14 L/s per sq. m at 250 Pa) and shall be rated for 10-inch wg (2500-Pa) static-pressure class, positive or negative.
2. EPDM O-ring to seal in concave bead in coupling or fitting spigot.
3. Double-lipped, EPDM O-ring seal, mechanically fastened to factory-fabricated couplings and fitting spigots.

## 2.5 HANGERS AND SUPPORTS

- A. Hanger Rods for Noncorrosive Environments: Cadmium-plated steel rods and nuts.
- B. Hanger Rods for Corrosive Environments: Electrogalvanized, all-thread rods or galvanized rods with threads painted with zinc-chromate primer after installation.
- C. Strap and Rod Sizes: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 5-1 (Table 5-1M), "Rectangular Duct Hangers Minimum Size," and Table 5-2, "Minimum Hanger Sizes for Round Duct."
- D. Steel Cables for Galvanized-Steel Ducts: Galvanized steel complying with ASTM A 603.
- E. Steel Cables for Stainless-Steel Ducts: Stainless steel complying with ASTM A 492.
- F. Steel Cable End Connections: Cadmium-plated steel assemblies with brackets, swivel, and bolts designed for duct hanger service; with an automatic-locking and clamping device.
- G. Duct Attachments: Sheet metal screws, blind rivets, or self-tapping metal screws; compatible with duct materials.
- H. Trapeze and Riser Supports:
  1. Supports for Galvanized-Steel Ducts: Galvanized-steel shapes and plates.
  2. Supports for Stainless-Steel Ducts: Stainless-steel shapes and plates.
  3. Supports for Aluminum Ducts: Aluminum or galvanized steel coated with zinc chromate.

## PART 3 - EXECUTION



### 3.1 DUCT INSTALLATION

- A. Drawing plans, schematics, and diagrams indicate general location and arrangement of duct system. Indicated duct locations, configurations, and arrangements were used to size ducts and calculate friction loss for air-handling equipment sizing and for other design considerations. Install duct systems as indicated unless deviations to layout are approved on Shop Drawings and Coordination Drawings.
- B. Install ducts according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" unless otherwise indicated.
- C. Install round ducts in maximum practical lengths.
- D. Install ducts with fewest possible joints.
- E. Install factory- or shop-fabricated fittings for changes in direction, size, and shape and for branch connections.
- F. Unless otherwise indicated, install ducts vertically and horizontally, and parallel and perpendicular to building lines.
- G. Install ducts close to walls, overhead construction, columns, and other structural and permanent enclosure elements of building.
- H. Install ducts with a clearance of 1 inch (25 mm), plus allowance for insulation thickness.
- I. Route ducts to avoid passing through transformer vaults and electrical equipment rooms and enclosures.
- J. Where ducts pass through non-fire-rated interior partitions and exterior walls and are exposed to view, cover the opening between the partition and duct or duct insulation with sheet metal flanges of same metal thickness as the duct. Overlap openings on four sides by at least 1-1/2 inches (38 mm).
- K. Where ducts pass through fire-rated interior partitions and exterior walls, install fire dampers. Comply with requirements in Section 233300 "Air Duct Accessories" for fire and smoke dampers.
- L. Protect duct interiors from moisture, construction debris and dust, and other foreign materials. Comply with SMACNA's "IAQ Guidelines for Occupied Buildings Under Construction," Appendix G, "Duct Cleanliness for New Construction Guidelines."

### 3.2 INSTALLATION OF EXPOSED DUCTWORK

- A. Protect ducts exposed in finished spaces from being dented, scratched, or damaged.
- B. Trim duct sealants flush with metal. Create a smooth and uniform exposed bead. Do not use two-part tape sealing system.



- C. Grind welds to provide smooth surface free of burrs, sharp edges, and weld splatter. When welding stainless steel with a No. 3 or 4 finish, grind the welds flush, polish the exposed welds, and treat the welds to remove discoloration caused by welding.
- D. Maintain consistency, symmetry, and uniformity in the arrangement and fabrication of fittings, hangers and supports, duct accessories, and air outlets.
- E. Repair or replace damaged sections and finished work that does not comply with these requirements.

### 3.3 DUCT SEALING

- A. Seal ducts for duct static-pressure, seal classes, and leakage classes specified in "Duct Schedule" Article according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
- B. Seal ducts to the following seal classes according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible":
  - 1. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible."
  - 2. Outdoor, Supply-Air Ducts: Seal Class A.
  - 3. Outdoor, Exhaust Ducts: Seal Class C.
  - 4. Outdoor, Return-Air Ducts: Seal Class C.
  - 5. Unconditioned Space, Supply-Air Ducts in Pressure Classes 2-Inch wg (500 Pa) and Lower: Seal Class B.
  - 6. Unconditioned Space, Supply-Air Ducts in Pressure Classes Higher Than 2-Inch wg (500 Pa): Seal Class A.
  - 7. Unconditioned Space, Exhaust Ducts: Seal Class C.
  - 8. Unconditioned Space, Return-Air Ducts: Seal Class B.
  - 9. Conditioned Space, Supply-Air Ducts in Pressure Classes 2-Inch wg (500 Pa) and Lower: Seal Class C.
  - 10. Conditioned Space, Supply-Air Ducts in Pressure Classes Higher Than 2-Inch wg (500 Pa): Seal Class B.
  - 11. Conditioned Space, Exhaust Ducts: Seal Class B.
  - 12. Conditioned Space, Return-Air Ducts: Seal Class C.

### 3.4 HANGER AND SUPPORT INSTALLATION

- A. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Chapter 5, "Hangers and Supports."
- B. Building Attachments: Concrete inserts, powder-actuated fasteners, or structural-steel fasteners appropriate for construction materials to which hangers are being attached.
  - 1. Where practical, install concrete inserts before placing concrete.
  - 2. Install powder-actuated concrete fasteners after concrete is placed and completely cured.
  - 3. Use powder-actuated concrete fasteners for standard-weight aggregate concretes or for slabs more than 4 inches (100 mm) thick.



4. Do not use powder-actuated concrete fasteners for lightweight-aggregate concretes or for slabs less than 4 inches (100 mm) thick.
  5. Do not use powder-actuated concrete fasteners for seismic restraints.
- C. Hanger Spacing: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 5-1 (Table 5-1M), "Rectangular Duct Hangers Minimum Size," and Table 5-2, "Minimum Hanger Sizes for Round Duct," for maximum hanger spacing; install hangers and supports within 24 inches (610 mm) of each elbow and within 48 inches (1200 mm) of each branch intersection.
- D. Hangers Exposed to View: Threaded rod and angle or channel supports.
- E. Support vertical ducts with steel angles or channel secured to the sides of the duct with welds, bolts, sheet metal screws, or blind rivets; support at each floor and at a maximum intervals of 16 feet (5 m).
- F. Install upper attachments to structures. Select and size upper attachments with pull-out, tension, and shear capacities appropriate for supported loads and building materials where used.

### 3.5 CONNECTIONS

- A. Make connections to equipment with flexible connectors complying with Section 233300 "Air Duct Accessories."
- B. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for branch, outlet and inlet, and terminal unit connections.

### 3.6 PAINTING

- A. Paint interior of metal ducts that are visible through registers and grilles and that do not have duct liner. Apply one coat of flat, black, latex paint over a compatible galvanized-steel primer. Paint materials and application requirements are specified in Section 099101 "Construction Painting"

### 3.7 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Leakage Tests:
  1. Comply with SMACNA's "HVAC Air Duct Leakage Test Manual." Submit a test report for each test.
  2. Test the following systems:
    - a. Ducts with a Pressure Class Higher Than 3-Inch wg (750 Pa): Test representative duct sections, selected by Commissioner from sections installed, totaling no less than 25 percent of total installed duct area for each designated pressure class.





- b. Supply Ducts with a Pressure Class of 2-Inch wg (500 Pa) or Higher: Test representative duct sections, selected by Commissioner from sections installed, totaling no less than 50 percent of total installed duct area for each designated pressure class.
      - c. Return Ducts with a Pressure Class of 2-Inch wg (500 Pa) or Higher: Test representative duct sections, selected by Commissioner from sections installed, totaling no less than 50 percent of total installed duct area for each designated pressure class.
      - d. Exhaust Ducts with a Pressure Class of 2-Inch wg (500 Pa) or Higher: Test representative duct sections, selected by Commissioner from sections installed, totaling no less than 50 percent of total installed duct area for each designated pressure class.
      - e. Outdoor Air Ducts with a Pressure Class of 2-Inch wg (500 Pa) or Higher: Test representative duct sections, selected by Commissioner from sections installed, totaling no less than 50 percent of total installed duct area for each designated pressure class.
    3. Disassemble, reassemble, and seal segments of systems to accommodate leakage testing and for compliance with test requirements.
    4. Test for leaks before applying external insulation.
    5. Conduct tests at static pressures equal to maximum design pressure of system or section being tested. If static-pressure classes are not indicated, test system at maximum system design pressure. Do not pressurize systems above maximum design operating pressure.
    6. Give seven days' advance notice for testing.
  - C. Duct System Cleanliness Tests:
    1. Visually inspect duct system to ensure that no visible contaminants are present.
    2. Test sections of metal duct system, chosen randomly by Owner, for cleanliness according to "Vacuum Test" in NADCA ACR, "Assessment, Cleaning and Restoration of HVAC Systems."
      - a. Acceptable Cleanliness Level: Net weight of debris collected on the filter media shall not exceed 0.75 mg/100 sq. cm.
  - D. Duct system will be considered defective if it does not pass tests and inspections.
  - E. Prepare test and inspection reports.
- 3.8 DUCT CLEANING
- A. Clean new and existing duct system(s) before testing, adjusting, and balancing.
  - B. Use service openings for entry and inspection.
    1. Create new openings and install access panels appropriate for duct static-pressure class if required for cleaning access. Provide insulated panels for insulated or lined duct. Patch insulation and liner as recommended by duct liner manufacturer. Comply with Section 233300 "Air Duct Accessories" for access panels and doors.



2. Disconnect and reconnect flexible ducts as needed for cleaning and inspection.
  3. Remove and reinstall ceiling to gain access during the cleaning process.
- C. Particulate Collection and Odor Control:
1. When venting vacuuming system inside the building, use HEPA filtration with 99.97 percent collection efficiency for 0.3-micron-size (or larger) particles.
  2. When venting vacuuming system to outdoors, use filter to collect debris removed from HVAC system, and locate exhaust downwind and away from air intakes and other points of entry into building.
- D. Clean the following components by removing surface contaminants and deposits:
1. Air outlets and inlets (registers, grilles, and diffusers).
  2. Supply, return, and exhaust fans including fan housings, plenums (except ceiling supply and return plenums), scrolls, blades or vanes, shafts, baffles, dampers, and drive assemblies.
  3. Dedicated exhaust and ventilation components and makeup air systems.
- E. Mechanical Cleaning Methodology:
1. Clean metal duct systems using mechanical cleaning methods that extract contaminants from within duct systems and remove contaminants from building.
  2. Use vacuum-collection devices that are operated continuously during cleaning. Connect vacuum device to downstream end of duct sections so areas being cleaned are under negative pressure.
  3. Use mechanical agitation to dislodge debris adhered to interior duct surfaces without damaging integrity of metal ducts, duct liner, or duct accessories.
  4. Clean fibrous-glass duct liner with HEPA vacuuming equipment; do not permit duct liner to get wet. Replace fibrous-glass duct liner that is damaged, deteriorated, or delaminated or that has friable material, mold, or fungus growth.
  5. Clean coils and coil drain pans according to NADCA 1992. Keep drain pan operational. Rinse coils with clean water to remove latent residues and cleaning materials; comb and straighten fins.
  6. Provide drainage and cleanup for wash-down procedures.
  7. Antimicrobial Agents and Coatings: Apply EPA-registered antimicrobial agents if fungus is present. Apply antimicrobial agents according to manufacturer's written instructions after removal of surface deposits and debris.
- 3.9 START UP
- A. Air Balance: Comply with requirements in Section 230593 "Testing, Adjusting, and Balancing for HVAC."
- 3.10 DUCT SCHEDULE
- A. Fabricate ducts with galvanized sheet steel except as otherwise indicated:



**B. Exhaust Ducts:**

1. Ducts Connected to Fans Exhausting (ASHRAE 62.1, Class 1 and 2) Air:
  - a. Pressure Class: Negative 1-inch wg (250 Pa).
  - b. Minimum SMACNA Seal Class: A if negative pressure, and A if positive pressure.
  - c. SMACNA Leakage Class for Rectangular: 4.
  - d. SMACNA Leakage Class for Round and Flat Oval: 4.
2. Ducts Connected to Equipment Not Listed Above:
  - a. Pressure Class: Positive or negative 4-inch wg (1000 Pa).
  - b. Minimum SMACNA Seal Class: A if negative pressure, and A if positive pressure.
  - c. SMACNA Leakage Class for Rectangular: 4.
  - d. SMACNA Leakage Class for Round and Flat Oval: 4.

**C. Outdoor-Air (Not Filtered, Heated, or Cooled) Ducts:**

1. Ducts Connected to Equipment Not Listed Above:
  - a. Pressure Class: Positive or negative 2-inch wg (500 Pa).
  - b. Minimum SMACNA Seal Class: A.
  - c. SMACNA Leakage Class for Rectangular: 4.
  - d. SMACNA Leakage Class for Round and Flat Oval: 4.

**D. Intermediate Reinforcement:**

1. Galvanized-Steel Ducts: Galvanized steel.
2. Stainless-Steel Ducts:
  - a. Exposed to Airstream: Match duct material.
  - b. Not Exposed to Airstream: Match duct material.
3. Aluminum Ducts: Aluminum.

**E. Elbow Configuration:**

1. Rectangular Duct: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-2, "Rectangular Elbows."
  - a. Velocity 800 fpm or Lower:
    - 1) Radius Type RE 1 with minimum 0.5 radius-to-diameter ratio.
    - 2) Mitered Type RE 4 without vanes.



- b. Velocity 800 to 1200 fpm:
  - 1) Radius Type RE 1 with minimum 1.0 radius-to-diameter ratio.
  - 2) Radius Type RE 3 with minimum 0.5 radius-to-diameter ratio and two vanes.
  - 3) Mitered Type RE 2 with vanes complying with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-3, "Vanes and Vane Runners," and Figure 4-4, "Vane Support in Elbows."
- c. Velocity 1200 fpm or Higher:
  - 1) Radius Type RE 1 with minimum 1.5 radius-to-diameter ratio.
  - 2) Radius Type RE 3 with minimum 1.0 radius-to-diameter ratio and two vanes.
  - 3) Mitered Type RE 2 with vanes complying with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-3, "Vanes and Vane Runners," and Figure 4-4, "Vane Support in Elbows."
- 2. Rectangular Duct: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-2, "Rectangular Elbows."
  - a. Radius Type RE 1 with minimum 1.5 radius-to-diameter ratio.
  - b. Radius Type RE 3 with minimum 1.0 radius-to-diameter ratio and two vanes.
  - c. Mitered Type RE 2 with vanes complying with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 4-3, "Vanes and Vane Runners," and Figure 4-4, "Vane Support in Elbows."
- 3. Round Duct: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Figure 3-4, "Round Duct Elbows."
  - a. Minimum Radius-to-Diameter Ratio and Elbow Segments: Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible," Table 3-1, "Mitered Elbows." Elbows with less than 90-degree change of direction have proportionately fewer segments.
    - 1) Velocity 800 fpm or Lower: 0.5 radius-to-diameter ratio and three segments for 90-degree elbow.
    - 2) Velocity 800 to 1200 fpm: 1.0 radius-to-diameter ratio and four segments for 90-degree elbow.
    - 3) Velocity 1200 fpm or Higher: 1.5 radius-to-diameter ratio and five segments for 90-degree elbow.
    - 4) Radius-to Diameter Ratio: 1.5.
  - b. Round Elbows, 12 Inches (305 mm) and Smaller in Diameter: Stamped or pleated.
  - c. Round Elbows, 14 Inches (356 mm) and Larger in Diameter: Standing seam.

END OF SECTION 233113



## SECTION 233300 - AIR DUCT ACCESSORIES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

A. Section Includes:

1. Backdraft and pressure relief dampers.
2. Manual volume dampers.
3. Control dampers.
4. Combination fire and smoke dampers.
5. Flange connectors.
6. Duct silencers.
7. Turning vanes.
8. Duct-mounted access doors.
9. Flexible connectors.
10. Duct accessory hardware.

#### 1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. For duct silencers, include pressure drop and dynamic insertion loss data. Include breakout noise calculations for high transmission loss casings.

B. Shop Drawings: For duct accessories. Include plans, elevations, sections, details and attachments to other work.

1. Detail duct accessories fabrication and installation in ducts and other construction. Include dimensions, weights, loads, and required clearances; and method of field assembly into duct systems and other construction. Include the following:
  - a. Special fittings.
  - b. Manual volume damper installations.
  - c. Control-damper installations.



- d. Fire-damper, smoke-damper, combination fire- and smoke-damper, ceiling, and corridor damper installations, including sleeves; and duct-mounted access doors and remote damper operators.
- e. Wiring Diagrams: For power, signal, and control wiring.

#### 1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which ceiling-mounted access panels and access doors required for access to duct accessories are shown and coordinated with each other, using input from Installers of the items involved.
- B. Source quality-control reports.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For air duct accessories to include in operation and maintenance manuals.

#### 1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Fusible Links: Furnish quantity equal to 10 percent of amount installed but not less than 2 of each.

### PART 2 - PRODUCTS

#### 2.1 ASSEMBLY DESCRIPTION

- A. Comply with NFPA 90A, "Installation of Air Conditioning and Ventilating Systems," and with NFPA 90B, "Installation of Warm Air Heating and Air Conditioning Systems."
- B. Comply with SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for acceptable materials, material thicknesses, and duct construction methods unless otherwise indicated. Sheet metal materials shall be free of pitting, seam marks, roller marks, stains, discolorations, and other imperfections.

#### 2.2 MATERIALS

- A. Galvanized Sheet Steel: Comply with ASTM A 653/A 653M.
  - 1. Galvanized Coating Designation: G90 (Z275).
  - 2. Exposed-Surface Finish: Mill phosphatized.



- B. Reinforcement Shapes and Plates: Galvanized-steel reinforcement where installed on galvanized sheet metal ducts; compatible materials for aluminum and stainless-steel ducts.
- C. Tie Rods: Galvanized steel, 1/4-inch (6-mm) minimum diameter for lengths 36 inches (900 mm) or less; 3/8-inch (10-mm) minimum diameter for lengths longer than 36 inches (900 mm).

### 2.3 BACKDRAFT AND PRESSURE RELIEF DAMPERS

- A. Description: Gravity balanced.
- B. Maximum Air Velocity: 1250 fpm (6.4 m/s)
- C. Maximum System Pressure: 3-inch wg (0.8 kPa).
- D. Blades: Multiple single-piece blades, off-center pivoted, with sealed edges.
- E. Blade Action: Parallel.
- F. Blade Seals: Neoprene, mechanically locked.
- G. Blade Axles:
  - 1. Material: Galvanized steel.
  - 2. Diameter: 0.20 inch (5 mm)
- H. Tie Bars and Brackets: Galvanized steel.
- I. Return Spring: Adjustable tension.
- J. Bearings: Steel ball or synthetic pivot bushings.

### 2.4 MANUAL VOLUME DAMPERS

- A. Standard, Steel, Manual Volume Dampers:
  - 1. Standard leakage rating, with linkage outside airstream.
  - 2. Suitable for horizontal or vertical applications.
  - 3. Frames:
    - a. Frame: Hat-shaped, 0.05-inch- (1.3-mm-) galvanized steel.
    - b. Mitered and welded corners.
    - c. Flanges for attaching to walls and flangeless frames for installing in ducts.
  - 4. Blades:
    - a. Multiple or single blade.
    - b. Parallel- or opposed-blade design.



- c. Stiffen damper blades for stability.
      - d. Galvanized steel, 0.064 inch (1.62 mm) thick.
    - 5. Blade Axles: Galvanized steel.
    - 6. Bearings:
      - a. Molded synthetic.
      - b. Dampers in ducts with pressure classes of 3-inch wg (750 Pa) or less shall have axles full length of damper blades and bearings at both ends of operating shaft.
    - 7. Tie Bars and Brackets: Galvanized steel.
  - B. Damper Hardware:
    - 1. Zinc-plated, die-cast core with dial and handle made of 3/32-inch- (2.4-mm-) thick zinc-plated steel, and a 3/4-inch (19-mm) hexagon locking nut.
    - 2. Include center hole to suit damper operating-rod size.
    - 3. Include elevated platform for insulated duct mounting.
- 2.5 CONTROL DAMPERS
- A. Low-leakage rating with linkage outside airstream and bearing AMCA's Certified Ratings Seal for both air performance and air leakage.
  - B. Frames:
    - 1. Hat, U, or Angle shaped.
    - 2. 0.094-inch- (2.4-mm-) thick, galvanized sheet steel.
    - 3. Mitered and welded, or interlocking, gusseted corners.
  - C. Blades:
    - 1. Multiple blade with maximum blade width of 8 inches (200 mm).
    - 2. Parallel- and opposed-blade design.
    - 3. Galvanized-steel, or Aluminum.
    - 4. 0.064 inch (1.62 mm) thick single skin or 0.0747-inch- (1.9-mm-) thick dual skin.
    - 5. Blade Edging: Closed-cell neoprene.
    - 6. Blade Edging: Inflatable seal blade edging, or replaceable rubber seals.
  - D. Blade Axles: 1/2-inch- (13-mm-) diameter; galvanized steel; blade-linkage hardware of zinc-plated steel and brass; ends sealed against blade bearings.
    - 1. Operating Temperature Range: From minus 40 to plus 200 deg F (minus 40 to plus 93 deg C).
  - E. Bearings:
    - 1. Synthetic.





2. Dampers in ducts with pressure classes of 3-inch wg (750 Pa) or less shall have axles full length of damper blades and bearings at both ends of operating shaft.
3. Thrust bearings at each end of every blade.

## 2.6 COMBINATION FIRE AND SMOKE DAMPERS

- A. Type: Dynamic; rated and labeled according to UL 555 and UL 555S by an NRTL.
- B. Closing rating in ducts up to 4-inch wg (1-kPa) static pressure class and minimum 2000-fpm (10-m/s) velocity.
- C. Fire Rating: 1-1/2 and 3 hours.
- D. Frame: Hat-shaped, 0.094-inch-(2.4-mm-) thick, galvanized sheet steel, with welded, interlocking, gusseted or mechanically attached corners and mounting flange.
- E. Heat-Responsive Device: Replaceable, 165 deg F (74 deg C) rated, fire-closure device.
- F. Heat-Responsive Device: Electric resettable link and switch package, factory installed, rated 180F for generator air exhaust.
- G. Smoke Detector: Integral, factory wired for single-point connection, where called for.
- H. Blades: Roll-formed, horizontal, overlapping, 0.063-inch- (1.6-mm-) thick, galvanized sheet steel.
- I. Leakage: Class I
- J. Rated pressure and velocity to exceed design airflow conditions.
- K. Mounting Sleeve: Factory-installed, 0.039-inch- (1.0-mm-) thick, galvanized sheet steel; length to suit wall or floor application with factory-furnished silicone calking.
- L. Master control panel for use in dynamic smoke-management systems.
- M. Damper Motors: two-position action.
- N. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements for motors specified in Section 230513 "Common Motor Requirements for HVAC Equipment."
  1. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.
  2. Controllers, Electrical Devices, and Wiring: Comply with electrical requirements for devices and connections.
  3. Permanent-Split-Capacitor or Shaded-Pole Motors: With oil-immersed and sealed gear trains.
  4. Spring-Return Motors: Equip with an integral spiral-spring mechanism where indicated. Enclose entire spring mechanism in a removable housing designed for service or



adjustments. Size for running torque rating of 150 in. x lbf (17 N x m) and breakaway torque rating of 150 in. x lbf (17 N x m).

5. Outdoor Motors and Motors in Outdoor-Air Intakes: Equip with O-ring gaskets designed to make motors weatherproof. Equip motors with internal heaters to permit normal operation at minus 40 deg F (minus 40 deg C).
6. Nonspring-Return Motors: For dampers larger than 25 sq. ft. (2.3 sq. m), size motor for running torque rating of 150 in. x lbf (17 N x m) and breakaway torque rating of 300 in. x lbf (34 N x m).
7. Electrical Connection: 115 V, single phase, 60 Hz.

O. Accessories:

1. Auxiliary switches for fan control.

2.7 FLANGE CONNECTORS

- A. Description: Add-on, or roll-formed, factory-fabricated, slide-on transverse flange connectors, gaskets, and components.
- B. Material: Galvanized steel.
- C. Gage and Shape: Match connecting ductwork.

2.8 DUCT-MOUNTED ACCESS DOORS

- A. Duct-Mounted Access Doors: Fabricate access panels according to SMACNA's "HVAC Duct Construction Standards - Metal and Flexible"; Figures 7-2 (7-2M), "Duct Access Doors and Panels," and 7-3, "Access Doors - Round Duct."

1. Door:
  - a. Double wall, rectangular.
  - b. Galvanized sheet metal with insulation fill and thickness as indicated for duct pressure class.
  - c. Vision panel.
  - d. Hinges and Latches: 1-by-1-inch (25-by-25-mm) butt or piano hinge and cam latches.
  - e. Fabricate doors airtight and suitable for duct pressure class.
2. Frame: Galvanized sheet steel, with bend-over tabs and foam gaskets.
3. Number of Hinges and Locks:
  - a. Access Doors Less Than 12 Inches (300 mm) Square: No hinges and two sash locks.
  - b. Access Doors up to 18 Inches (460 mm) Square: Continuous and two sash locks.
  - c. Access Doors larger than 18 inch square continuous hinge and two compression latches.



2.9 DUCT ACCESS PANEL ASSEMBLIES

- A. Labeled according to UL 1978 by an NRTL.
- B. Panel and Frame: Minimum thickness 0.0528-inch (1.3-mm) carbon steel.
- C. Fasteners: Carbon steel. Panel fasteners shall not penetrate duct wall.
- D. Gasket: Comply with NFPA 96; grease-tight, high-temperature ceramic fiber, rated for minimum 2000 deg F (1093 deg C).
- E. Minimum Pressure Rating: 10-inch wg (2500 Pa), positive or negative.

2.10 FLEXIBLE CONNECTORS

- A. Materials: Flame-retardant or noncombustible fabrics.
- B. Coatings and Adhesives: Comply with UL 181, Class 1.
- C. Metal-Edged Connectors: Factory fabricated with a fabric strip 5-3/4 inches (146 mm) wide attached to two strips of 2-3/4-inch- (70-mm-) wide, 0.028-inch- (0.7-mm-) thick, galvanized sheet steel or 0.032-inch- (0.8-mm-) thick aluminum sheets. Provide metal compatible with connected ducts.
- D. Indoor System, Flexible Connector Fabric: Glass fabric double coated with neoprene.
  - 1. Minimum Weight: 26 oz./sq. yd. (880 g/sq. m).
  - 2. Tensile Strength: 480 lbf/inch (84 N/mm) in the warp and 360 lbf/inch (63 N/mm) in the filling.
  - 3. Service Temperature: Minus 40 to plus 200 deg F (Minus 40 to plus 93 deg C).
- E. Outdoor System, Flexible Connector Fabric: Glass fabric double coated with weatherproof, synthetic rubber resistant to UV rays and ozone.
  - 1. Minimum Weight: 24 oz./sq. yd. (810 g/sq. m).
  - 2. Tensile Strength: 530 lbf/inch (93 N/mm) in the warp and 440 lbf/inch (77 N/mm) in the filling.
  - 3. Service Temperature: Minus 50 to plus 250 deg F (Minus 45 to plus 121 deg C).
- F. High-Temperature System, Flexible Connectors: Glass fabric coated with silicone rubber.
  - 1. Minimum Weight: 16 oz./sq. yd. (542 g/sq. m).
  - 2. Tensile Strength: 285 lbf/inch (50 N/mm) in the warp and 185 lbf/inch (32 N/mm) in the filling.
  - 3. Service Temperature: Minus 67 to plus 500 deg F (Minus 55 to plus 260 deg C).



- G. High-Corrosive-Environment System, Flexible Connectors: Glass fabric with chemical-resistant coating.
  - 1. Minimum Weight: 14 oz./sq. yd. (474 g/sq. m).
  - 2. Tensile Strength: 450 lbf/inch (79 N/mm) in the warp and 340 lbf/inch (60 N/mm) in the filling.
  - 3. Service Temperature: Minus 67 to plus 500 deg F (Minus 55 to plus 260 deg C).
- H. Thrust Limits: Combination coil spring and elastomeric insert with spring and insert in compression, and with a load stop. Include rod and angle-iron brackets for attaching to fan discharge and duct.
  - 1. Frame: Steel, fabricated for connection to threaded rods and to allow for a maximum of 30 degrees of angular rod misalignment without binding or reducing isolation efficiency.
  - 2. Outdoor Spring Diameter: Not less than 80 percent of the compressed height of the spring at rated load.
  - 3. Minimum Additional Travel: 50 percent of the required deflection at rated load.
  - 4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
  - 5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
  - 6. Elastomeric Element: Molded, oil-resistant rubber or neoprene.
  - 7. Coil Spring: Factory set and field adjustable for a maximum of 1/4-inch (6-mm) movement at start and stop.

#### 2.11 DUCT ACCESSORY HARDWARE

- A. Instrument Test Holes: Cast iron or cast aluminum to suit duct material, including screw cap and gasket. Size to allow insertion of pitot tube and other testing instruments and of length to suit duct-insulation thickness.
- B. Adhesives: High strength, quick setting, neoprene based, waterproof, and resistant to gasoline and grease.

#### 2.12 SOUND TRAPS FOR DUCTWORK

- A. Where indicated on the Drawings, provide in the ductwork packaged sound traps of proper models and sizes for the purpose of attenuating noise. Sound traps shall be as specified herein and shall conform with the requirements tabulated on the Drawings.
- B. Construction
  - 1. Rectangular Units: Fabricate casings with a minimum of 0.034-inch thick, solid galvanized ASTM A653 sheet metal for outer casing and 0.022-inch thick, ASTM A653 perforated galvanized sheet metal for inner casing.



2. Round Units:
    - a. Outer Casings:
      - 1) ASTM A653 galvanized sheet steel
      - 2) Up to 24" in Diameter: 0.034" thick
      - 3) 26" through 40" in Diameter: 0.040" thick
      - 4) 42" through 52" in Diameter: 0.052" thick.
      - 5) 54" through 60" in Diameter: 0.064" thick.
      - 6) Casings fabricated of spiral lock-seam duct may be one size thinner than that indicated.
    - b. Interior Casing, Partitions, and Baffles:
      - 1) ASTM A653 galvanized sheet steel
      - 2) At least 0.034" thick and designed for minimum aerodynamic losses
  3. Sheet Metal Perforations: 1/8" diameter perforations for inner casing and baffle sheet metal.
  4. Fill Material: Inert and vermin-proof fibrous material, packed under not less than 5 percent compression.
  5. Erosion Barrier: Polymer bag enclosing fill and heat-sealed before assembly or Tedlar film liner as a fill protection.
  6. Fabricate silencers to form rigid units that will not pulsate, vibrate, rattle, or otherwise react to system pressure variations.
    - a. Do not use nuts, bolts, or sheet metal screws for unit assemblies.
    - b. Lock form and seal or continuously weld joints.
    - c. Suspended Units: Provide factory-installed suspension hooks or lugs attached to frame in quantities spaced to prevent deflection or distortion.
    - d. Reinforcement: Provide cross or trapeze angles for rigid suspension.
- C. Performance
1. The attenuation values obtained by the sound traps shall be not less than those tabulated on the Drawings. They shall be true attenuation values, only accomplished by the sound traps. These true attenuations shall not include any effects due to (1) end reflections, (2) room absorptions, (3) plenum absorption, (4) directivity, (5) beaming, (6) standing waves or (7) distance factors.
  2. Adhesives, sealants, packing materials, and accessory materials shall have fire ratings not exceeding 25 for flame-spread index. Smoke developed index ratings shall not exceed 50 when tested according to ASTM E84.
- D. Air Flow Pressure Drop: Air flow pressure drop values shall not exceed those indicated on the Drawings. The air flow pressure drop performance shall be certified by the manufacturer to have been tested and rated in accordance with applicable portions of AMCA Bulletin 210, or with a method of air measurement approved by the NYC Department of Buildings.



- E. Source Quality Control:
1. Acoustic Performance: Test according to ASTM E477.
  2. Record acoustic ratings, including dynamic insertion loss and self-noise power levels with an airflow of at least 2000-fpm face velocity.
  3. Leak Test: Test units for airtightness at 200 percent of associated fan static pressure or 6-inch wg static pressure, whichever is greater.
- F. Manufacturers or approved equal: Subject to compliance with requirements, provide sound traps from one of the following (or approved equal):
- Industrial Acoustics Company  
Koppers Co., Inc.  
Aeroacoustic Corp.  
Vibro-Acoustics  
McGill AirFlow Corporation.  
Dynasonics, A PCI Industries Company

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Install duct accessories according to applicable details in SMACNA's "HVAC Duct Construction Standards - Metal and Flexible" for metal ducts and in NAIMA AH116, "Fibrous Glass Duct Construction Standards," for fibrous-glass ducts.
- B. Install duct accessories of materials suited to duct materials; use galvanized-steel accessories in galvanized-steel and fibrous-glass ducts, stainless-steel accessories in stainless-steel ducts, and aluminum accessories in aluminum ducts.
- C. Install backdraft, or control dampers at inlet of exhaust fans or exhaust ducts as close as possible to exhaust fan unless otherwise indicated.
- D. Install volume dampers at points on supply, return, and exhaust systems where branches extend from larger ducts. Where dampers are installed in ducts having duct liner, install dampers with hat channels of same depth as liner, and terminate liner with nosing at hat channel.
1. Install steel volume dampers in steel ducts.
  2. Install aluminum volume dampers in aluminum ducts.
- E. Set dampers to fully open position before testing, adjusting, and balancing.
- F. Install test holes at fan inlets and outlets and elsewhere as indicated.
- G. Install fire and smoke dampers according to UL listing.
- H. Connect ducts to duct silencers rigidly.



- I. Install duct access doors on sides of ducts to allow for inspecting, adjusting, and maintaining accessories and equipment at the following locations:
  - 1. At outdoor-air intakes and mixed-air plenums.
  - 2. At drain pans and seals.
  - 3. Downstream from manual volume dampers, control dampers, backdraft dampers, and equipment.
  - 4. Adjacent to and close enough to fire or smoke dampers, to reset or reinstall fusible links. Access doors for access to fire or smoke dampers having fusible links shall be pressure relief access doors and shall be outward operation for access doors installed upstream from dampers and inward operation for access doors installed downstream from dampers.
  - 5. Control devices requiring inspection.
  - 6. Elsewhere as indicated.
- J. Install access doors with swing against duct static pressure.
- K. Access Door Sizes:
  - 1. One-Hand or Inspection Access: 8 by 5 inches (200 by 125 mm).
  - 2. Two-Hand Access: 12 by 6 inches (300 by 150 mm).
  - 3. Head and Hand Access: 18 by 10 inches (460 by 250 mm).
  - 4. Head and Shoulders Access: 21 by 14 inches (530 by 355 mm).
  - 5. Body Access: 25 by 14 inches (635 by 355 mm).
  - 6. Body plus Ladder Access: 25 by 17 inches (635 by 430 mm).
- L. Label access doors according to Section 230553 "Identification for HVAC Piping and Equipment" to indicate the purpose of access door.
- M. Install flexible connectors to connect ducts to equipment.
- N. Connect diffusers or light troffer boots to ducts directly or with maximum 60-inch (1500-mm) lengths of flexible duct clamped or strapped in place.
- O. Connect flexible ducts to metal ducts with adhesive plus sheet metal screws.
- P. Install duct test holes where required for testing and balancing purposes.
- Q. Install thrust limits at centerline of thrust, symmetrical on both sides of equipment. Attach thrust limits at centerline of thrust and adjust to a maximum of 1/4-inch (6-mm) movement during start and stop of fans.

### 3.2 FIELD QUALITY CONTROL

- A. Tests and Inspections:
  - 1. Operate dampers to verify full range of movement.
  - 2. Inspect locations of access doors and verify that purpose of access door can be performed.



3. Operate fire, smoke, and combination fire and smoke dampers to verify full range of movement and verify that proper heat-response device is installed.
4. Inspect turning vanes for proper and secure installation.
5. Operate remote damper operators to verify full range of movement of operator and damper.

END OF SECTION 233300





## SECTION 233900 – FANS AND ACCESSORIES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project:
  - 1. Contract Drawings
  - 2. Specifications
  - 3. General Conditions
  - 4. Addendum
  - 5. Contract (City of New York Standard Construction Contract).

#### 1.2 WORK INCLUDED

- A. Furnish and install all fans of the various types, arrangement and sizes specified herein and as scheduled on the drawings.
- B. Fans shall include all motors, drives, special coatings and accessories.
- C. Furnish and install back draft dampers with all fans.

#### 1.3 RELATED SECTIONS

- A. Examine all drawings and criteria sheets and all other Sections of the Specifications for requirements which affect work under this Section whether or not such work is specifically mentioned in this Section.

#### 1.4 REFERENCES

- A. Applicable provisions of the following Codes and Trade Standard Publications shall apply to the work of this Section, and are hereby incorporated into, and made a part of the Contract Documents.
- B. Material standards shall be as specified or detailed hereinafter and as following:
  - 1. AMCA 99 – Standards Handbook; 1986.
  - 2. AMCA 210 – Laboratory Methods of Testing Fans for Rating Purposes; 1985.
  - 3. AMCA 261 – Directory of Products Licensed to Bear the AMCA Certified Ratings Seal; 1995.
  - 4. AMCA 300 – Test Code for Sound Rating Air Moving Devices; 1994.
  - 5. AMCA 301 – Method of Publishing Sound Rating Air Moving Devices; 1994.
  - 6. NEMA MG 1 – Motors and Generators; 1993 (and Revision 1).



7. NFPA 96 – Installation of Equipment for the Removal of Smoke and Grease Vapors from Commercial Cooking Equipment; 1994.
8. UL 705 – Power Ventilators; 1994.

#### 1.5 SUBMITTALS

- A. Submit certified curves showing fan performance with system operating points plotted on curves.
- B. Submit motor data sheets including motor efficiency and power factor at various loadings of nameplate horsepower. Motor efficiency and power factor shall be shown for 100%, 75% and 50% of nameplate horsepower. Submit data on efficiency and power factor required for motors 1 HP and above only. Motors shall have premium efficiency motors with minimum efficiency on motors listed in specification.
- C. Submit bearing sizing calculations for each similar size and type of fan. Fan bearing calculations shall be based on fan at maximum operating conditions including belt pull. Calculations shall be done for both fan bearings and motor bearings. Calculations required on centrifugal fans, vent sets in-line fans, wall mounted propeller fans and vane axial fans only.
- D. Submit sound power levels for each size and type of fan. Sound levels shall be in all (8) octave bands for discharge of fan, inlet to fan, and radiated noise through casing.
- E. Submit certified shop drawings indicating all dimensional data, and operating and maintenance clearances.

#### 1.6 QUALITY ASSURANCE

- A. Fans shall conform to most recent AMCA Bulletins regarding construction and testing. Fans shall be tested and rated per AMCA and shall be selected in proper operating range without motor overloading and fan surge.
- B. Manufacturers must prove experience in the production of similar products of this type for at least three (3) years prior.
- C. Fans shall be air and sound certified in accordance with AMCA 210 and 300 and shall bear the AMCA seal.
- D. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. and other testing firm acceptable to the NYC DOB and all suitable for the purpose specified and indicated.



1.7 ENVIRONMENTAL REQUIREMENTS

- A. Do not operate fans for any purpose, temporary or permanent, until ductwork is clean, filters are in place, bearings have been lubricated and fan has been test run under observation.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Manufacturers or approved equal acceptable contingent upon product's compliance with the specifications are as follows:

- 1. In-Line Tubular Centrifugal Fans

- a. Greenheck Fan Corp.
    - b. Loren Cook Co.
    - c. Buffalo Forge Co.
    - d. New York Blower
    - e. Twin City Fan

- B. Selection And Balancing

- 1. Provide and install items as listed in equipment schedules, as shown on drawings, and as specified, complete in all respects to the functions intended.
    - 2. Provide fans capable of accommodating static pressure variations of  $\pm 10\%$ .
    - 3. Provide balanced variable sheaves for motors 15 HP and under.
    - 4. Statically and dynamically balance fans in the field to eliminate vibration or noise transmission to occupied areas of the building. Provide certificate of compliance from manufacturer.
    - 5. Provide OSHA and ANSI approved belt guards on interior mounted belt driven fans. Provide weatherproof ventilated housing for exterior mounted fans.
    - 6. Provide safety, bird or insect screen where inlet or outlet is exposed.
    - 7. All fans shall be manufactured in accordance with this specification even where techniques are required which are not considered standard by that manufacturer.
    - 8. Verify fan arrangement with the Contractor including motor location for servicing and discharge arrangements for proper airflow.
    - 9. Where fixed speed sheaves are specified for a particular fan, provide (2) additional sheaves (one motor and one drive) as necessary for final air balancing.

- C. Painting

- 1. Each fan component shall be thoroughly cleaned, degreased and deburred before the application of a rust preventive primer.
    - 2. Two (2) coats of a rust preventive primer shall be applied under a topcoat of air-dried epoxy or enamel. Minimum coating thickness shall be 5 to 6 mils. The final coat shall be applied after final assembly to all surfaces.



3. Special coatings shall be provided for corrosive exhaust systems as specified under the fan specification.

## 2.2 IN-LINE TUBULAR CENTRIFUGAL FANS

- A. Provide belt driven centrifugal type in-line fans with capacities as indicated in the equipment schedules on the mechanical drawings.
- B. AMCA pressure Class I or Class II as indicated in the equipment schedule.
- C. Fan housing shall be heavy gauge aluminum steel welded to a rigid galvanized structural steel framework or steel coated with an epoxy finish. Minimum thickness of epoxy finish shall be 5 mils. Fan housing shall be provided with mounting brackets at both inlet and discharge suitable for hanger rods or bolting directly to structure.
- D. Fan housing shall have inlet and outlet connections flanged.
- E. Fan inlet cone shall have a die spun hyperbolic shape and be matched to the wheel cone to ensure full loading of fan blades and to maximize efficiency.
- F. Fan wheel shall have single thickness backward inclined blades or true hollow airfoil shaped blades. Wheel characteristics shall be non-overloading and non-sparking type.
- G. Fan inlet cone, wheel cone, blades and back plate shall be constructed of heavy gauge aluminum or steel. Steel construction shall be coated with an epoxy coating having a minimum thickness of 5 mils.
- H. Blades shall be welded to wheel cone and back plate.
- I. Wheel shall be statically and dynamically balanced.
- J. Drive shaft shall be ground and polished high grade steel supported by permanently lubricated sealed ball bearings housed in a cast iron pillow block housing.
- K. Bearings shall be sized for a minimum of L-10 life of 200,000 hours at maximum fan operating conditions including belt pull. Bearings shall be selected in accordance with standards set forth by the Anti-Friction Bearing Mfrs. Assn.
- L. Drives shall be sized for a minimum of 1.65 times the fan motor horsepower. Sheaves shall be adjustable and have a tapered lock, split and keyed hub. Belts shall be oil resistant, 24,000-hour non-static type.
- M. Fan shall be suitable for horizontal or vertical mounting.
- N. Motor, drive, and bearings shall be out of the exhaust airstream and housed to facilitate ease of maintenance. Motor cooling shall be through the fan drive and motor housing. Housing for motor drive and bearings shall be of the same construction as the fan housing.



- O. Motors shall be in accordance with Motors Section of the Special Conditions.
- P. Fans shall be constructed in accordance with AMCA 99-0401 Type A, B or C.
- Q. Provide with 1/2" by 1/2" galvanized wire mesh attached to a galvanized structural steel frame. Frame shall be bolted to the flanged housing construction.
- R. Provide thrust arrestors as required to limit movement of the fan upon start-up.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Fans shall be installed in accordance with manufacturer recommendations, Contract Drawings and reviewed submittals.
- B. Fans shall be installed so as to ensure easy accessibility for service or removal or replacement of all components such as, but not limited to, fans, motors, belts, drives, bearings, dampers, actuators, isolators, and field connections.
- C. The Contractor shall install all motors and drives shipped loose. Fans shall be installed and tested, and shall be made fully operational by the Contractor.
- D. Provide fixed sheaves as necessary for final air balancing. The Contractor shall install the fixed sheave after balancing with the Contractor to adjust the fans.
- E. Make all penetrations through roof or vertical walls watertight. Submit methods of sealing to Commissioner for review and approval.
- F. All fans shall have flexible inlet and outlet couplings to prevent vibration transmission to ductwork.
- G. The Contractor shall assemble all loose parts including motors and drive assemblies on site and shall vibration balance the fans in the field. Field adjustment including belt alignment, wheel balancing, belt tension, greasing of bearings, installation of belt guards, and other loose parts shall be provided by the Contractor.

#### 3.2 COORDINATION

- A. The Contractor shall coordinate the fan arrangement with the coordinated ductwork layout prior to ordering the fan. The Contractor shall provide all labor and materials necessary to change fan arrangement in the field when fan arrangement does not match ductwork.



- B. The inlet and discharge ductwork shall have a minimum straight run of (2) fan diameters upstream and downstream of the fan. The Contractor shall notify the Commissioner in writing if these conditions cannot be achieved. Installation of improper inlet/discharge conditions without the review of the Commissioner shall be corrected in the field at no cost to the City of New York.
- C. The discharge duct arrangement shall comply with AMCA recommended layouts for elbows after fans.
- D. The Contractor shall provide all supplemental steel, supports, rods and hangers necessary to hang or mount fans. Supports shall include thrust restraint as required by the fan manufacturer.
- E. The fan manufacturer and Contractor shall coordinate the fan orientation for tubular centrifugal fans and shall verify that the fan support and bearings are supplied for the coordinated fan orientation (horizontal or vertical). The Contractor shall revise the fan in the field if job conditions require changing of orientation, at no cost to the City of New York.
- F. The Contractor shall receive and inspect all fans and motors to make sure that all fans are received without defect. All defective or damaged fans shall be returned to the manufacturer by the Contractor for replacement.
- G. The Contractor shall properly protect all equipment to prevent damage from water, dirt, etc. Protection shall include temporary plastic wrap to keep equipment in original factory condition. Fans used for temporary ventilation during construction shall be totally cleaned and refurbished prior to turnover to the City of New York.
- H. The Contractor shall mount and vibration balance all fans. The Contractor shall furnish and install power wiring to the fan motor and verify proper fan rotation. The Contractor shall coordinate the starter requirements to ensure that the proper starter is installed for non-standard motors. The Contractor shall wire all interlocking wiring to the fan including smoke detector wiring for fan shutdown.
- I. The Contractor shall mount all automatic control dampers on the fan either shipped loose or provided by the Contractor.

END OF SECTION 233900



## SECTION 235300 - FUEL HANDLING SYSTEMS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

#### 1.2 DESCRIPTION

A. Provide fuel oil handling systems in accordance with the Contract Documents.

#### 1.3 WORK INCLUDED

- A. Steel Single Wall Storage Tanks.
- B. Factory Package Steel Wall Storage Tanks with containment tank including supply and return pumps and level controls.
- C. Leak Detection System.
- D. Electronic Fuel Level Gauge
- E. Fuel Oil Pumps.
- F. Day Tanks.
- G. Piping, Valves and Accessories.
- H. Underground Piping.

#### 1.4 SUBMITTALS

- A. Submit full technical rating data, catalog cuts, model numbers, dimensional installation details, capacities, construction details, piping details, wiring diagrams, and installation instructions.
- B. Submit shop drawings of the tank for approval. The shop drawings shall indicate the size, construction data, tapping connections and location of the tappings.



- C. System vendor shall coordinate product data presented by leak monitoring system and double wall fuel storage tank to provide a comprehensive set of interfaced drawings which will serve as the basis for system evaluation by Commissioner and installation by Contractor designated by the City of New York.
- D. Installation Plans: Provide the City of New York accurate as-built plans which show the size and location of any new underground or above ground tank and piping system. These plans must include a statement by the installer that the system has been installed in compliance with the State and local standards as well as the Department of Environmental Protection.

## 1.5 QUALITY ASSURANCE

- A. Comply with the following governing standards:
  - 1. NYC Mechanical Code 1305.14 for alternate tank design.
  - 2. Underwriters' Laboratories, Inc.
  - 3. National Fire Protection Assoc. (NFPA 30) Flammable and Combustible Liquids Code and (NFPA 31) Standards for Installation of Oil Burning Equipment.
  - 4. National Sanitation Foundation Testing Laboratory, January 1984, listing of Plastic Piping System Components and Related Materials, Standard 15.
  - 5. Steel Tank Institute.
- B. Construct, test and install the tanks in accordance with NFPA recommendations and furnish with Underwriters' label. Comply with all governing Federal, State and local requirements and with the Department of Environmental Protection.
- C. All tanks, pumps, piping and fuel oil accessories shall comply with all governing Federal, State and local codes and all regulations of the NYC Department of Buildings. Comply with Underwriters' Laboratories requirements and Department of Environmental Protection.
- D. Factory test all fuel tanks at 25 psig after fabrication.
- E. Furnish major elements of the fuel systems by a single source vendor to assure design, installation and service interface and to for instruction of personnel and supply of replacement parts to the City of New York.
- F. Provide City of New York M.E.A. number.

## PART 2 - PRODUCTS

### 2.1 SINGLE WALL STEEL STORAGE FUEL TANK

- A. Tank construction shall comply with NYC Mechanical Code 1305.14 for alternate design.





- B. Alternate design (for field fabricated tanks) shall comply with all requirements listed in Section 1305.14 of NYC Mechanical Code.
- C. Venting: In accordance with U.L. provisions, tank(s) shall have a normal vent opening sized per NYC Mechanical Code 1305.7.
- D. Fittings: Tank(s) shall be equipped with threaded pipe connections for fill, supply, return, gauge, drain normal and emergency vents. See Drawings for sizes.
- E. Accessories
  - 1. Provide steel support saddles constructed of minimum 5/16" 3/8" 1/2" "tee" construction. Base "tee" to be a minimum of 4" high. Provide number of saddles required to not exceed 12 foot spacing. A minimum of 2 saddles will be required.
- F. Coating: Paint tank on the exterior only, with red primer.
- G. Testing: For standard tank design testing shall comply with NFPA 31. For alternate tank design hydrostatic test of no less than 25 psig shall be performed.
- H. Warranty: Provide fabricator's warranty for 10 years from date of the City of New York's acceptance of fuel oil system, against faulty material or workmanship.
- I. Acceptable Manufacturers or approved equal
  - 1. Easco Corp. (Basis of design)
  - 2. Buffalo
  - 3. Adamson

## 2.2 FACTORY PACKAGE DAY TANK WITH CONTAINMENT AND PUMPS

- A. General: Provide a packaged design fuel oil day tank for supply of fuel to an engine generator set. Day tank shall be complete in all respects in order to provide each engine with a reliable, local source of fuel. Tank size and pump capacity as indicated on drawing schedule.
- B. The day tank shall be designed and supplied as an engineered system by the manufacturer. Each tank shall be of packaged design to include all inlet flow control devices, other valves, supply & return pumps, level and pump controls, indicators, alarms and all other devices as required to form an integrated, functional system such that field installation is restricted largely to external piping, wiring and such intermediate devices that are required by code and/or good engineering practice to interconnect the bulk source of supply to the day tank, the day tank to each engine and to provide for external vents as per local codes and UL142, NFPA31 and NFPA37.
- C. The system shall be designed and installed in accordance with applicable sections of NFPA30, NFPA31, NFPA37, UL80 and UL142. The primary day tank will comply with NYC construction requirements and be rated for 25 psig.



- D. Installation General: The day tank shall be installed adjacent to the engine, on the same grade. Install (as shown on the plan drawings, as detailed herein) on a housekeeping pad adjacent to the prime mover. Anchor tank to the pad.
- E. Provide schedule 40, ASTM A 53, black iron pipe connections to the day tank as shown. Make all connections to fixed installed pipe with pipe unions to facilitate tank service/removal.
1. Supply to day tank supply pumps from remote storage tank
  2. Return from day tank overflow-return pump to bulk supply
  3. Supply and return to each engine, as recommended by manufacturer
  4. Vent sizes shall be as shown and as required by local codes and by UL 142, NFPA31 and NFPA37 specification
- F. Day Tank Construction:
1. All welded steel atmospheric tank of rectangular construction built in accordance with codes and standards noted above for indoor use with fuel oil
  2. Pipe thread connections shall be provided for:
    - a. Fuel oil supply, 0.75 inch
    - b. Supply to each engine, (2) 0.75 inch. Each supply to be equipped with fusible link valve
    - c. Return from each engine, (3) 1.0 inch
    - d. Overflow return to storage tank (return pump outlet)
    - e. Vent, 2.0 inch
    - f. Emergency vent, 4.0 inch (100-gallon & larger)
    - g. Drain, 0.75 inch, with fire rated drain valve
  3. An inspection port in the top shall be provided
  4. The tank shall be equipped with a welded steel channel base suitable for bolt attachment to a concrete pad
  5. The tank shall have interior corrosion protection.
  6. The exterior of the day tank shall receive a heavy-duty industrial anti-corrosion coating and be finish painted
  7. All day tank system components shall be protected by a removable steel equipment cover.
  8. \*Primary Day tank shall be factory leak tested at 25-PSI and be of 10-gauge steel construction.
- G. The tank shall be installed and anchored within a UL Listed steel containment dike/basin having a minimum capacity of 200% that of the day tank. The containment shall be equipped with a leak detector that shall activate the "rupture" alarm described below. A drain with ball valve is to be supplied. The containment shall be painted inside and out to match the day tank.
- H. Fuel Delivery System:
1. The day tank shall be fed from on-board duplex supply pumps described below.
  2. Provide the following inlet devices:
    - a. Main inlet shutoff valve, 0.75 inch (qty 2)



- b. Inlet strainer, 0.75 inch (qty 2)
  - c. Main inlet solenoid valve, 100PSI rated, 0.75 inch brass body, viton or buna-n seal (qty 2)
  - d. Main inlet fusible link valve
- I. Day tank level controller. A UL Listed, integrated design level controller package shall be supplied which provides differential level control for activation of supply pump, tank level indication, system alarms and manual operating controls. Level controller shall be self-contained as a unit within a NEMA1 box mounted on top of the day tank. The controller shall utilize discrete level sensors and circuit paths for level alarms and fill pump control. Failure in one sensor or circuit path shall not necessarily disable the entire controller. All indicators are to be long life light emitting diodes.
- 1. The level controller shall provide the following:
    - Control functions
      - a. "Auto-off-manual" pump control mode switch
      - b. "Press to test" pump push-button
      - c. Pump start-stop automatic level control
      - d. Pump overflow control backup
    - Indication Functions
      - a. Fuel level
      - b. Power available
      - c. Switch not in auto
      - d. Pump running
      - e. Low level alarm
      - f. High level alarm
      - g. Overflow alarm/pump control backup activated
      - h. Day Tank leakOutputs
      - i. Pump running
      - j. Switch not in auto
      - k. Low level alarm (60W)
      - l. High level alarm (60W)
      - m. Day tank leak
  - 2. The level controller shall have an intrinsic overflow cutout backup control which, upon sensing an overflow, will stop the pump, activate an alarm and cause the controller to revert to an emergency backup level control mode which allows the tank to continue operating automatically but which inhibits overflow.
- J. Supply pumps – Qty 2
- 1. Direct drive, motor driven pump coupled via flexible coupling.
  - 2. Motor to be open drip proof construction, NEMA type B, continuous duty at 40C, 1725 RPM, 1-phase, 60 hertz, 1.15 service factor



3. Pump to be directly driven, positive displacement, internal gear type with mechanical shaft seal. Pump shall be a high pressure, hydraulic type consisting of two intermeshing, hardened steel, precision ground gear assemblies enclosed by a high strength, die cast aluminum housing, hardened drive shaft, pressure loaded mechanical shaft seal.
  4. Duplex Pump controller, for activation by above level controller to include:
    - a. Function: Automatic duplex pump controller to provide lead-lag operation with automatic alternation of pumps on successive starts and automatic lag pump back-up. With control switch in "automatic" position, upon closure of control contacts, lead pump starts and runs. In normal operation, upon subsequent closure of control contacts, pumps alternate operation. Upon activation of low level alarm, lag pump starts and runs. In either normal or alarm operation, pumps do not run simultaneously.
    - b. Mode control switch: "pump 1--both--pump 2".
    - c. Pump running indicators.
    - d. Control power transformer (if needed, typically for 3-phase input power).
- K. Overflow-return pump: Provide a day tank mounted overflow-return pump with controller:
1. Direct drive, motor driven pump coupled via flexible coupling.
  2. Motors to be open drip proof construction, NEMA type B, continuous duty at 40C, 1725 RPM, 1-phase, 60 hertz, 1.15 service factor
  3. Pumps to be directly driven, positive displacement, internal gear type with mechanical shaft seal. Pump shall be a high pressure, hydraulic type consisting of two intermeshing, hardened steel, precision ground gear assemblies enclosed by a high strength, die cast aluminum housing, hardened drive shaft, pressure loaded mechanical shaft seal.
  4. Provide a check valve on the return pump outlet, spring-type, bronze construction, 600 psi rated.
    - a. Provide overflow-return pump controller
    - b. Arm pump at 70% day tank level
    - c. Activate pump at 95% day tank level and pump down to 70% level.
    - d. Lock-out fill system when overflow-return pump is activated
    - e. Provide alarm when overflow-return pump is activated
    - f. Provide test push-button, running and armed indicators
- L. Provide a manufacturers two-year parts and labor warranty.
- M. Day tank testing
1. The day tank shall be supplied with manufacturers test certificates as below
  2. Tank test: pressure test, leak proof test and structural integrity/appearance test
  3. Level controller: operational test with liquid of level sensors, level indicator, level control, alarms, backup devices
  4. Pump: vacuum test, flow test, pressure test, leak proof test, ampere/voltage test, load test, overload test.



N. Day tank manual

1. The day tank shall be supplied with an illustrated manufacturer's manual which includes the following:
2. Registration certificate
3. Glossary
4. Equipment list
5. Detailed description of operation
6. Pump specifications
7. Installation instructions
8. Troubleshooting instructions
9. Maintenance instructions
10. Piping diagram
11. Electrical drawing
12. Exploded view parts drawing/parts list
13. Dimensional drawing
14. Warranty card

O. Approved Manufacturers:

1. Simplex (Basis of design)
2. Preferred Utility
3. Tramont
4. Or approved equal.

2.3 FUEL OIL LEAK DETECTION SYSTEM

- A. Furnish and install electronic alarm and monitoring system for fuel leaks. Sensors and alarm devices to be mounted as shown on Drawings and as directed by Commissioner.
- B. Provide a continuous leak detection system utilizing electro-optic technology. Controller shall be capable of distinguishing liquid hydrocarbons from water.
  1. Alarm Controller: Alarm console to be NEMA 4X with remote sensor test capability at console utilizing test button. When pressed the test button will test entire system electronics from control panel to the sensors. Console to be UL listed to provide intrinsically safe output circuits to electro-optic sensors in Class I, Group D hazardous locations. Console must monitor interstitial space and/or piping sump for presence of liquid. Each alarm condition to be visually indicated by a dedicated red L.E.D. indicator for fuel leak or high level or an amber L.E.D. indicator for water leak or low level which is to remain lit until alarm condition is corrected. Each alarm condition to also be audibly annunciated via a 95-decibel piezoelectric pulsing horn which can be silenced via the horn silence button. Console shall also provide a green "system detecting" indicator. Each alarm to have N.O. dry contacts for control purposes, as well as low voltage outputs for NEMA 4X RA-series remote audio / visual alarm panel.
  2. Remote alarm panel: Remote audio / visual NEMA 4X alarm panel is to be mounted by filling area outside hazardous area. Each high level alarm condition to be visually indicated by a dedicated red L.E.D. indicator which is to remain lit until alarm condition is corrected.



Each alarm condition to also be audibly annunciated via a 95-decibel piezoelectric pulsing horn with auto time out.

C. Provide for Monitoring Panels:

1. Power Source: 120 volts AC (from emergency power panel).
2. Two spare light bulbs.
3. Hasp for padlock.
4. Mounting hardware.

D. Sensors

1. Provide and install sensors for double wall tanks to monitor leaks into the interstitial space. Sensors shall be solid state electro-optic technology and shall have capability of distinguishing between liquid hydrocarbons and water. Sensor shall be compact shape and have flexible shaft so it can be installed and removed from grade without the use of a pull string. Sensors shall have stainless steel electrode and shall be third party certified. Sensors to be similar to "OMNTEC" Model PDWS for steel tanks or approved equal.
2. Provide and install sensors for double wall fuel oil piping where called for. Sensors shall be solid-state electro-optic technology and operate at any angle. Sensor shall be capable of being tested remotely without removal of device and shall be third party certified. Sensors shall be similar to "OMNTEC" Model LS-ASC or approved equal.

E. Acceptable Manufacturers or approved equal.

1. Preferred Utilities (Basis of design)
2. OMNTEC
3. Simplex
4. Or approved equal.

## 2.4 ELECTRONIC TANK FUEL LEVEL GAUGE

- A. Furnish and install remote reading electronic tank gauging systems, utilizing a liquid sensitive electronic probe type level sensor to provide a continuous indication on a remote instrument, and providing a digital indication of the actual tank content in gallons. The instrument shall have a die cast aluminum housing with gasketed, hinged door. The digital display shall be not less than .8" high and provide a flashing display at predetermined high and low liquid level. The system shall operate on 120V, 60 Hz with an intrinsically safe circuit at the tank. The gauging system shall be equipped with 2 additional contacts providing a 4-20 MA output.
- B. Unit shall be suitable for ambient temperatures from 40°F to +120°F.
- C. Alarm functions of the tank gauging system to be as follows:
  1. Low Level on Tank: Flashing display on gauge and transmitting of alarm signal to remote location. Alarm silencing pushbutton silences bell, display continues to flash until situation is corrected.
  2. High Level Alarm: Flashing display on gauge.



3. Provide a 4-20 maDC output for interface with the BMCS for high and low level alarms and tank capacity. BMCS Contractor shall be provided with necessary scaling factors to allow the system to display gallons of fuel remaining in tank.
- D. Provide an overfill alarm system consisting of the following:
  1. A separate tank mounted level switch constructed of a sealed brass probe screwed into an opening on top of the tank. A magnetic switch shall be provided in a factory encapsulated housing protected from fuel vapors. A closed cell magnetic float will be the sole moving part.
  2. Audible/Visual Alarm for the tanks. Provide a NEMA 4 weatherproof cabinet containing a 4" alarm bell with automatic silencing, an enclosed protected minimum 30 watt flashing light for each tank, bell silencing pushbutton and alarm test pushbutton.
  3. Contacts for 4-20 MA output signals to the BMCS.
  4. A steel "caution" sign with porcelain enameled bright yellow background and 2" black lettering, to alert operator to the presence of an overfill alarm system.
  5. Mount equipment as shown on drawings or as directed by site representative. Contractor to provide wiring between all components.
  6. Acceptable Manufacturers or approved equal:
    - a. Preferred Utilities
    - b. Omntec
    - c. Innovative Components
    - d. Uehling Instrument

## 2.5 FUEL OIL PUMP SETS

- A. Provide factory-assembled packaged duplex fuel oil pump sets with components mounted on a steel base support fabricated of ¼" steel plate with 3" steel side rails continuously welded to the base. Base support to be fabricated with 1" overflow lip and provided with ½" plugged drain connection. The base shall be provided with steel brackets for mounting and support of the electrical control panel. Pipe shall be schedule 40 black steel with screwed fittings. Each pump set shall consist of the following components:
  1. Two (2) vane or gear type positive displacement fuel oil pumps with capacities as scheduled. Pumps to be direct connected by flexible coupling to motor. Pump shall be capable of pulling a minimum of 19" Hg vacuum.
  2. One (1) duplex oil strainer, sized equal to the suction line piping, for suction side service. Strainer shall have one-piece cast-iron body and shall be suitable for pressure to 200 PSI. Strainer baskets to be fabricated of brass mesh and to come complete with selector handle and locking handwheel.
  3. Two (2) fuel oil pump relief valves. Each valve to be cast bronze body with brass and bronze internals. Valves to have 300 lb. body rating with adjustable range of 75 to 300 psi.
  4. Gate valves shall be provided on suction and discharge side of each pump and prior to all pressure gauges and switches. Valves to have threaded bronze bodies, with bonnet, discs and stem of bronze. Packing to be fuel oil resistant.
  5. One (1) 4" liquid-filled pressure gauge to be placed on discharge side of each pump. The gauge shall read 0 to 200 psi.



6. One (1) 4" liquid-filled compound gauge having dial range from 30" of vacuum to 15 psi, and shall be placed on the suction and discharge sides of strainer. Case shall be black-finished steel, with steel dial. Movement to be brass with phosphor bronze bourdon tube.
7. Vertical ball check valve with cast bronze body and bronze internals to be located on the discharge side of each pump.
8. Control panel shall be mounted to base support bracket. Panel to be fabricated of 14 gauge steel, all-welded construction and finished in durable enamel. Panel shall be factory-wired and include required items to provide for automatic changeover from one (1) pump to the other and operation of standby pump should operating pump fail.
9. Control panel for fuel oil pumps shall include the following:
  - a. Fuel oil pump motor circuit breakers.
  - b. Fuel oil pump motor starters.
  - c. Fuel oil pump selector switch for hand or automatic changeover.
  - d. Control circuit fuse.
  - e. Lead/lag alternator relay for backup pump operation.
  - f. Lead pump fail relay and light and alarm.
  - g. Lights to indicate each pump "ON".
  - h. Dry contacts for interface with BMS for each pump on/off status and lead pump failure alarm.
  - i. Disconnect for each pump motor.
10. Control panel for each generator day tank fuel oil pump set shall include the following:
  - a. Logic to control level in day tank via level controller.
  - b. Fuel oil pump motor circuit breakers.
  - c. Fuel oil pump motor starters.
  - d. Fuel oil pump selector switch for hand or automatic changeover.
  - e. Control circuit fuse.
  - f. Lights for day tank high and low level and leak alarm (via rupture basin leak alarm switch).
  - g. Lead/lag alternator relay for backup pump operation.
  - h. Lead pump fail relay and light and alarm.
  - i. Lights to indicate each pump "ON".
  - j. Dry contacts for interface with BMS for each pump on/off status and lead pump failure alarm, day tank high level (each) day tank low level (each) and leak alarm (each).
  - k. Disconnect for each pump motor.
11. All pump sets shall be factory wired and piped requiring only final field connections.

**B. Acceptable Manufacturers or approved equal**

1. Simplex
2. Viking
3. Preferred Utilities
4. Kraisel
5. Roper





**2.6 FUEL OIL PIPING, VALVES AND ACCESSORIES**

- A. Fuel Piping and valving construction shall conform to NYC Mechanical Code 1302 and 1303. Fuel system installation shall conform to NYC Mechanical Code 1305.
- B. Vent Terminals
  - 1. Provide full size vent protector constructed of galvanized cast iron with threaded connection and of weatherproof design.
- C. Fill Box
  - 1. Provide hinged rectangular remote 7 gallons fill box to house fill and sounding lines. Box to be surface mounted on wall construction. Construct box entirely of 12-gage steel power-coated and provide with lockable latch. Provide a cast iron fill cap for piping in the box with required key to remove cap. Fill pipe connections shall be from bottom of box. Provide 3/4" capped valved drain at bottom.
- D. Acceptable Manufacturers:
  - 1. Morrison Bros. Co (base of design)
  - 2. Simplex
  - 3. Preferred Utilities
  - 4. Or approved equal.
- E. Emergency Shutoff Valves (Fire Valve):
  - 1. Manufacturers: Franklin Fueling Systems, Model 662 or approved equal
  - 2. Listed and labeled for fuel-oil service by an NRTL acceptable to authorities having jurisdiction.
  - 3. Single poppet valve.
  - 4. Body: ASTM A 123, cast iron
  - 5. Disk: FPM.
  - 6. Poppet Spring: Stainless steel.
  - 7. Stem: Plated brass.
  - 8. O-Ring: FPM.
  - 9. Packing Nut: PTFE-coated brass.
- F. Fuel Cooler
  - 1. Manufacturer: Thermal transfer product, Model AOR-5-1 or approved equal.
  - 2. Coil Tube: copper single pass.
  - 3. Coil Fins: Aluminum.
  - 4. Fan blades: Aluminum with steel hub non-sparking.
  - 5. Fan guard: zinc plated steel
  - 6. Cabinet: Steel with Baked Enamel finish.
  - 7. Coil manifold: steel with steel connections.
  - 8. Rating: 300 PSI, temperature -400 F.



9. Fan Motor
10. With built in bypass set at 30 PSI

**G. Flame Arrester:**

1. Manufacturer: Shand & Jurs Model 94306 for vertical installation or 94307 for horizontal installation – or approved equal.
2. Body: Cast steel flanged.
3. Tube Bank: 316 stainless steel
4. Assembly rated for 25 PSI.
5. Size per plan vent size

**H. Vacuum Breaker Valve**

1. Furnish and install a Vacuum Breaker Valve into a riser line as shown on the contract drawings. The valve shall prevent excessive vacuums that can disrupt fuel system operation or damage equipment. The valve shall automatically open to admit air when an unwanted vacuum develops. Valve shall prevent water and debris from entering the riser. The valve shall be similar to preferred utilities Manufacturing Corporation Danbury, CT, Model VB Vacuum Breaker Valve.
2. The valve assembly shall consist of a brass body with threaded ends, stainless steel ball and EPN "O" ring seat. The combination of spring action, round ball and a soft resilient seat provides positive bubble-tight closing, at low differential pressure. The device shall be suitable for pressures up to 300 PSIG and 365 F and opens to relieve unwanted pressure with less than 2" Hg.

**2.7 LABELS AND IDENTIFICATION**

- A. Detectable Warning Tape: Acid- and alkali-resistant PE film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches (152 mm) wide and 4 mils (0.1 mm) thick, continuously inscribed with a description of utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches (762 mm) deep; colored yellow.

**PART 3 - EXECUTION**

**3.1 GENERAL**

- A. Obtain all permits required. Provide adequate notice to inspector(s) for installation and testing of new equipment.
- B. Provide the City of New York with information and filled-in forms for registration of this facility with New York D.E.C. and EPA.
- C. Provide and install foot valve at bottom of suction stub in tanks, sized for full line size.



- D. Retest all fuel oil tanks after installation.

### 3.2 OIL PIPING

- A. Provide pressure gauges as shown on Drawings in fuel oil suction and return lines at locations visible from the floor. Gauge on the suction side to be 4½" diameter with 0 to 30" vacuum range at one inch vacuum graduations. Gauge on discharge side to be 4½" diameter with a 0 to 30 lbs. range at one-lb. graduations. Gauges to be as manufactured by Marsh Co. or Ashcroft.
- B. Oil piping to be provided with ground joint unions near each piece of apparatus, to facilitate connecting and disconnecting. Piping must be properly valved, as approved. Each oil line to engine boiler chiller/heater to be provided with a cutoff gate valve.
- C. Provide double drain valves in series with single hose connection for draining oil at all low points of system.
- D. Oil pipe connections to tanks to be properly graded and shall be provided with a minimum of three (3) elbow swing joints with arms of ample length to permit movement of the tank or pipe in any direction without impairing the efficiency of the pipe connections, and to be so constructed that any settlement of the tank will tend to tighten the threads in said joints. Screwed elbows shall be used at swing joints only; all other underground pipe fittings shall be welded.
- E. Oil piping outside of building to be run underground and pitched back to fuel oil tanks. Piping inside of buildings to run as shown on Drawings, and be properly supported. All piping must be free from vibration.

### 3.3 ABOVE GROUND TANKS

- A. Install above ground tank on a 4" high concrete pad with steel saddles leveled and grouted in place to assure full bearing. Provide buffer pad of suitable material between tank and saddles.
- B. Install fuel oil day tanks on an angle iron stand within rupture basin. The entire assembly to be field painted after installation is complete with red primer.

### 3.4 TANK MONITORING AND GAUGES

- A. Install sensors in tank as per manufacturer's recommendations.
- B. Provide wiring from sensors to monitoring panels. Run wires in 1" rigid galvanized underground conduit (see Electrical Specification).
- C. Mount gauges, alarms, bells, etc. in Generator Room. Provide control and power wiring between equipment as required.

### 3.5 PUMPS

- A. The pump manufacturer to be responsible for aligning in the field prior to startup of all flexible coupled pumps. Alignment to be with dial indicator with accuracy of  $\pm 0.002$  inch. The pump manufacturer must submit a written report certifying that the alignment work has been performed by his personnel and that the pumps are ready for operation.
- B. Floor-mounted pumps to be leveled up on tapered steel wedges in such a manner as to permit a minimum of 3/4 inch of grout between the pump base and the top of the concrete base.

END OF SECTION 235300



SECTION 238239 - UNIT HEATERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project:
  - 1. Contract Drawings
  - 2. Specifications
  - 3. General Conditions
  - 4. Addendum
  - 5. Contract (City of New York Standard Construction Contract).

1.2 SUMMARY

- A. Section Includes:
  - 1. Cabinet unit heaters with centrifugal fans and electric-resistance heating coils.
  - 2. Propeller unit heaters with electric-resistance heating coils.
  - 3. Wall and ceiling heaters with propeller fans and electric-resistance heating coils.

1.3 DEFINITIONS

- A. BAS: Building automation system.
- B. CWP: Cold working pressure.
- C. PTFE: Polytetrafluoroethylene plastic.
- D. TFE: Tetrafluoroethylene plastic.

1.4 ACTION SUBMITTALS

- A. Product Data: Include rated capacities, operating characteristics, furnished specialties, and accessories for each product indicated.
- B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
  - 1. Plans, elevations, sections, and details.
  - 2. Location and size of each field connection.
  - 3. Details of anchorages and attachments to structure and to supported equipment.



4. Equipment schedules to include rated capacities, operating characteristics, furnished specialties, and accessories.
  5. Location and arrangement of piping valves and specialties.
  6. Location and arrangement of integral controls.
  7. Wiring Diagrams: Power, signal, and control wiring.
- C. Samples for Initial Selection: Finish colors for units with factory-applied color finishes.
- D. Samples for Verification: Finish colors for each type of cabinet unit heater and wall and ceiling heaters indicated with factory-applied color finishes.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Floor plans, reflected ceiling plans, and other details, drawn to scale, on which the following items are shown and coordinated with each other, based on input from installers of the items involved:
1. Structural members to which unit heaters will be attached.
  2. Method of attaching hangers to building structure.
- B. Manufacturer Seismic Qualification Certification: Submit certification that cabinet unit heaters, accessories, and components will withstand seismic forces defined in Section 230548 "Vibration and Seismic Controls for HVAC Piping and Equipment." Include the following:
1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
    - a. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified."
  2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
  3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- C. Field quality-control test reports.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For cabinet unit heaters to include in emergency, operation, and maintenance manuals.



1.7 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to the NYC Department of Buildings, and marked for intended use.
- B. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and Startup."
- C. ASHRAE/IESNA 90.1 Compliance: Applicable requirements in ASHRAE/IESNA 90.1, Section 6 - "Heating, Ventilating, and Air-Conditioning."

PART 2 - PRODUCTS

2.1 PROPELLER UNIT HEATERS

- A. Manufacturers or approved equal: Subject to compliance with requirements, provide products by one of the following:
  - 1. Modine.
  - 2. Markel.
  - 3. Engineered Air Ltd.
  - 4. McQuay International.
  - 5. Rosemex Products.
  - 6. Ruffneck Heaters; a division of Lexa Corporation.
  - 7. Trane.
- B. Description: An assembly including casing, coil, fan, and motor in horizontal discharge configuration with adjustable discharge louvers.
- C. Comply with UL 2021.
- D. Comply with UL 823.
- E. Cabinet: Removable panels for maintenance access to controls.
- F. Cabinet Finish: Manufacturer's standard baked enamel applied to factory-assembled and -tested propeller unit heater before shipping.
- G. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1.
- H. Discharge Louver: Adjustable fin diffuser for horizontal units and conical diffuser for vertical units.



- I. Electric-Resistance Heating Elements: Nickel-chromium heating wire, free from expansion noise and 60-Hz hum, embedded in magnesium oxide refractory and sealed in steel or corrosion-resistant metallic sheath with fins no closer than 0.16 inch (4 mm). Element ends shall be enclosed in terminal box. Fin surface temperature shall not exceed 550 deg F (288 deg C) at any point during normal operation.
  - 1. Circuit Protection: One-time fuses in terminal box for overcurrent protection and limit controls for high-temperature protection of heaters.
  - 2. Wiring Terminations: Stainless-steel or corrosion-resistant material.
- J. Fan: Propeller type with aluminum wheel directly mounted on motor shaft in the fan venturi.
- K. Fan Motors: Comply with requirements in Section 230513 "Common Motor Requirements for HVAC Equipment."
  - 1. Motor Type: Permanently lubricated, multispeed.
- L. Control Devices:
  - 1. Unit-mounted fan-speed switch.
  - 2. Unit-mounted thermostat.
- M. Capacities and Characteristics
  - 1. As indicated on drawing schedule.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Examine areas to receive unit heaters for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Examine roughing-in for electrical connections to verify actual locations before unit heater installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

#### **3.2 INSTALLATION**

- A. Install wall boxes in finished wall assembly; seal and weatherproof.
- B. Install cabinet unit heaters to comply with NFPA 90A.
- C. Install propeller unit heaters level and plumb.
- D. Suspend cabinet unit heaters from structure with elastomeric hangers.





- E. Suspend propeller unit heaters from structure with all-thread hanger rods and spring hangers.

### 3.3 CONNECTIONS

- A. Comply with safety requirements in UL 1995.
- B. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."
- C. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

### 3.4 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust field-assembled components and equipment installation, including connections, and to assist in field testing. Report results in writing.
- B. Perform the following field tests and inspections and prepare test reports:
  - 1. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
  - 2. Operate electric heating elements through each stage to verify proper operation and electrical connections.
  - 3. Test and adjust controls and safety devices. Replace damaged and malfunctioning controls and equipment.
- C. Remove and replace malfunctioning units and retest as specified above.

### 3.5 ADJUSTING

- A. Adjust initial temperature set points.
- B. Occupancy Adjustments: When requested within 12 months of date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.

### 3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to instruct Commissioner's maintenance personnel to adjust, operate, and maintain cabinet unit heaters.

END OF SECTION 238239



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## SECTION 23 82 40 – FLUE EXHAUST CONDENSATE ACID NEUTRALIZER

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

A. This section includes acidic exhaust flue condensate treatment.

#### 1.3 SUBMITTALS

- A. Product Data: Include rated capacities; shipping; installed, and operating weights; furnished specialties and accessories for each model indicated.
- B. Shop Drawings: Detailed equipment assemblies and indicated dimensions, required clearances, and method of field assembly, components, and location and size of each field connection.
- C. Maintenance Data: Include in the maintenance manuals specified in division 1. Include parts list, and maintenance guide.

#### 1.4 QUALITY ASSURANCE

A. All components shall be schedule 40 PVC

#### 1.5 WARRANTY

A. General Warranty: Installing contractor shall provide one year of warranty parts and labor.



- B. Special Warranty: Submit a written warranty, executed by the contractor for the Inline Tube Neutralizer.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Available Manufactures: Manufactures shall be a company specializing in the manufacturing of the products specified in this section with minimum three (3) years experience.
- B. Service Access: The contractor shall use unions or PP tubing with clamps for easy servicing.
- C. Testing: Contractor shall test pH level at the outlet of the tube with a digital pH meter and submit a report to the design Engineer.
- D. Manufactures: JJM BOILER WORKS, INC Model JM-3, is the basis of design. Listed acceptable manufacturers shall be subject to compliance with the requirements. Provide pH treatment inline tubes by one of the following or approved equal:
  - 1. JJM Boiler Works, Inc.
  - 2. Viessmann, USA
  - 3. Nu-Con Company

### 2.2 COMPONENTS:

- A. Two 2" Plastic snap clamps with mounting holes.
- B. Pre- charged replaceable Magnesium Oxide Pellet Tube.
- C. Two: .5" NPT x .75 O.D Barb fittings
- D. Two: .5" NPT x .75" PVC Socket Fittings.
- E. One: .5" NPT Outlet Port
- F. One: .5" NPT Inlet Port
- G. One: .75 schedule 40 PVC "WYE" bypass Fitting
- H. Inline Tube may be opaque color tubing or Clear PVC Tubing.
- I. All packing material shall be recyclable paper and cardboard. No forma shall be used in packing.



2.3 PRODUCT RATING

- A. Shall be rated up to 300 MBH
- B. Flow rate shall be up to 2.40 GPH
- C. Horizontal Mounting Only

2.4 START UP

- A. Contractor shall engage a Factory-authorized service representative to provide startup service in presence of City of New York Special Inspector. Start up to be performed only after complete boiler room operation is field verified by the installing contractor. One year labor and parts warranty shall be provided by the contractor.

PART 3 - PRODUCTS

NOT USED.

END OF SECTION 238240



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## SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL.

### 1.1 RELATED DOCUMENTS

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

### 1.2 SUMMARY

A. Section Includes:

1. Electrical equipment coordination and installation.
2. Sleeves for raceways and cables.
3. Sleeve seals.
4. Grout.
5. Common electrical installation requirements

### 1.3 DEFINITIONS

- A. EPDM: Ethylene-propylene-diene terpolymer rubber.
- B. NBR: Acrylonitrile-butadiene rubber.

### 1.4 SUBMITTALS

- A. Product Data: For sleeve seals.

### 1.5 COORDINATION

A. Coordinate arrangement, mounting, and support of electrical equipment:

1. To allow maximum possible headroom unless specific mounting heights that reduce headroom are indicated.
2. To provide for ease of disconnecting the equipment with minimum interference to other installations.
3. To allow right of way for piping and conduit installed at required slope.



4. So connecting raceways, cables, wireways, cable trays, and busways will be clear of obstructions and of the working and access space of other equipment.
- B. Coordinate installation of required supporting devices and set sleeves in cast-in-place concrete, masonry walls, and other structural components as they are constructed.
- C. Coordinate location of access panels and doors for electrical items that are behind finished surfaces or otherwise concealed.
- D. Coordinate sleeve selection and application with selection and application of firestopping.

## PART 2 - PRODUCTS

### 2.1 SLEEVES FOR RACEWAYS AND CABLES

- A. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized steel, plain ends.
- B. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.
- C. Sleeves for Rectangular Openings: Galvanized sheet steel.
  1. Minimum Metal Thickness:
    - a. For sleeve cross-section rectangle perimeter less than 50 inches (1270 mm) and no side more than 16 inches (400 mm), thickness shall be 0.052 inch (1.3 mm).
    - b. For sleeve cross-section rectangle perimeter equal to, or more than, 50 inches (1270 mm) and 1 or more sides equal to, or more than, 16 inches (400 mm), thickness shall be 0.138 inch (3.5 mm).

### 2.2 SLEEVE SEALS

- A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
  1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
    - a. Advance Products & Systems, Inc.
    - b. Calpico, Inc.
    - c. Metraflex Co.
    - d. Pipeline Seal and Insulator, Inc.
  2. Sealing Elements: EPDM interlocking links shaped to fit surface of cable or conduit. Include type and number required for material and size of raceway or cable.
  3. Pressure Plates: Carbon steel or stainless steel. Include two for each sealing element.





4. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating or stainless steel of length required to secure pressure plates to sealing elements. Include one for each sealing element.

### 2.3 GROUT

- A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

## PART 3 - EXECUTION

### 3.1 COMMON REQUIREMENTS FOR ELECTRICAL INSTALLATION

- A. Comply with NECA 1.
- B. Measure indicated mounting heights to bottom of unit for suspended items and to center of unit for wall-mounting items.
- C. Headroom Maintenance: If mounting heights or other location criteria are not indicated, arrange and install components and equipment to provide maximum possible headroom consistent with these requirements.
- D. Equipment: Install to facilitate service, maintenance, and repair or replacement of components of both electrical equipment and other nearby installations. Connect in such a way as to facilitate future disconnecting with minimum interference with other items in the vicinity.
- E. Right of Way: Give to piping systems installed at a required slope.

### 3.2 SLEEVE INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Electrical penetrations occur when raceways, cables, wireways, cable trays, or busways penetrate concrete slabs, concrete or masonry walls, or fire-rated floor and wall assemblies.
- B. Concrete Slabs and Walls: Install sleeves for penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of slabs and walls.
- C. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
- D. Fire-Rated Assemblies: Install sleeves for penetrations of fire-rated floor and wall assemblies unless openings compatible with firestop system used are fabricated during construction of floor or wall.
- E. Cut sleeves to length for mounting flush with both surfaces of walls.
- F. Extend sleeves installed in floors 3 inches above finished floor level.



- G. Size pipe sleeves to provide 1/4-inch (6.4-mm) annular clear space between sleeve and raceway or cable, unless indicated otherwise.
- H. Seal space outside of sleeves with grout for penetrations of concrete and masonry
  - 1. Promptly pack grout solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect grout while curing.

Interior Penetrations of Non-Fire-Rated Walls and Floors: Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint.

- I. Fire-Rated-Assembly Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at raceway and cable penetrations. Install sleeves and seal raceway and cable penetration sleeves with firestop materials.
- J. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
- K. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- L. Underground, Exterior-Wall Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch (25-mm) annular clear space between raceway or cable and sleeve for installing mechanical sleeve seals.

### 3.3 SLEEVE-SEAL INSTALLATION

- A. Install to seal exterior wall penetrations.
- B. Use type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

### 3.4 FIRESTOPPING

- A. Apply firestopping to penetrations of fire-rated floor and wall assemblies for electrical installations to restore original fire-resistance rating of assembly.

END OF SECTION 260500



## SECTION 260519 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project:
  - 1. Contract Drawings
  - 2. Specifications
  - 3. General Conditions
  - 4. Addendum
  - 5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Building wires and cables rated 600 V and less.
  - 2. Connectors, splices, and terminations rated 600 V and less.
  - 3. Sleeves and sleeve seals for electrical penetrations.

#### 1.3 DEFINITIONS

- A. EPDM: Ethylene-propylene-diene terpolymer rubber.
- B. NBR: Acrylonitrile-butadiene rubber.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For testing agency.
- B. Field quality-control test reports.



## 1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the InterNational Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to NYC Department of Buildings.
  - 1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to NYC Department of Buildings, and marked for intended use.
- C. Comply with NFPA 70.

## PART 2 - PRODUCTS

### 2.1 CONDUCTORS AND CABLES

- A. Manufacturers or approved equal: Subject to compliance with requirements, provide products by one of the following:
  - 1. American Insulated Wire Corp.; a Leviton Company.
  - 2. General Cable Corporation.
  - 3. Senator Wire & Cable Company.
  - 4. Southwire Company.
- B. Copper Conductors: Comply with NEMA WC 70.
- C. Conductor Insulation: Comply with NEMA WC 70 for Types THW, THHN-THWN, XHHW.
- D. Multiconductor Cable: Comply with NEMA WC 70 for armored cable, Type AC, metal-clad cable, Type MC, mineral-insulated, metal-sheathed cable, Type MI with ground wire.

### 2.2 CONNECTORS AND SPLICES

- A. Manufacturers or approved equal: Subject to compliance with requirements, provide products by one of the following:
  - 1. AFC Cable Systems, Inc.
  - 2. Hubbell Power Systems, Inc.
  - 3. O-Z/Gedney; EGS Electrical Group LLC.



4. 3M; Electrical Products Division.
  5. Tyco Electronics Corp.
- B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

### PART 3 - EXECUTION

#### 3.1 CONDUCTOR MATERIAL APPLICATIONS

- A. Feeders: Copper only. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.
- B. Branch Circuits: Copper. Solid for No. 10 AWG and smaller; stranded for No. 8 AWG and larger.

#### 3.2 CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS

- A. Exposed Feeders: Type THHN-THWN, single conductors in raceway.
- B. Feeders Concealed in Ceilings, Walls, Partitions, and Crawlspace: Type THHN-THWN, single conductors in raceway, armored cable with ground wire, Type AC or metal-clad, Type MC.
- C. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.
- D. Exposed Branch Circuits: Type THHN-THWN, single conductors in raceway.
- E. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN-THWN, single conductors in raceway, armored cable, Type AC, metal-clad cable, Type MC.
- F. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.
- G. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, strain relief device at terminations to suit application.
- H. Class 1 Control Circuits: Type THHN-THWN, in raceway.
- I. Class 2 Control Circuits: Type THHN-THWN, in raceway, power-limited cable, concealed in building finishes.



### 3.3 INSTALLATION OF CONDUCTORS AND CABLES

- A. Conceal cables in finished walls, ceilings, and floors, unless otherwise indicated.
- B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.
- C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.
- D. Install exposed cables parallel and perpendicular to surfaces of exposed structural members, and follow surface contours where possible.
- E. Support cables according to Section 260529 "Hangers and Supports for Electrical Systems."
- F. Identify and color-code conductors and cables according to Section 260553 "Identification for Electrical Systems."

### 3.4 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
- B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than unspliced conductors.
  - 1. Use oxide inhibitor in each splice and tap conductor for aluminum conductors.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 6 inches (150 mm) of slack.

### 3.5 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

### 3.6 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly.



**3.7 FIELD QUALITY CONTROL**

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections and prepare test reports.
- B. Perform tests and inspections and prepare test reports.
- C. Tests and Inspections:
  - 1. After installing conductors and cables and before electrical circuitry has been energized, test conductors feeding critical equipment and services for compliance with requirements.
  - 2. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
  - 3. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each splice in cables and conductors No. 3 AWG and larger. Remove box and equipment covers so splices are accessible to portable scanner.
    - a. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each splice 11 months after date of Substantial Completion.
    - b. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
    - c. Record of Infrared Scanning: Prepare a certified report that identifies splices checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.
- D. Test Reports: Prepare a written report to record the following:
  - 1. Test procedures used.
  - 2. Test results that comply with requirements.
  - 3. Test results that do not comply with requirements and corrective action taken to achieve compliance with requirements.
- E. Remove and replace malfunctioning units and retest as specified above.

END OF SECTION 260519



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## SECTION 260526 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

A. Section Includes: Grounding systems and equipment.

#### 1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

#### 1.4 INFORMATIONAL SUBMITTALS

A. Informational Submittals: Plans showing dimensioned as-built locations of grounding features specified in "Field Quality Control" Article, including the following:

1. Test wells.
2. Ground rods.
3. Ground rings.
4. Grounding arrangements and connections for separately derived systems.
5. Grounding for sensitive electronic equipment.

B. Qualification Data: For qualified testing agency and testing agency's field supervisor.

C. Field quality-control reports.

#### 1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For grounding to include in emergency, operation, and maintenance manuals.



1. Instructions for periodic testing and inspection of grounding features at grounding connections for separately derived systems based on NFPA 70B.
  - a. Tests shall determine if ground-resistance or impedance values remain within specified maximums, and instructions shall recommend corrective action if values do not.
  - b. Include recommended testing intervals.

## 1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Member company of NETA or an NRTL.
  1. Testing Agency's Field Supervisor: Currently certified by NETA to supervise on-site testing.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Comply with UL 467 for grounding and bonding materials and equipment.

## PART 2 - PRODUCTS

### 2.1 CONDUCTORS

- A. Insulated Conductors: Copper wire or cable insulated for 600 V unless otherwise required by applicable Code or NYC Department of Buildings.
- B. Bare Copper Conductors:
  1. Solid Conductors: ASTM B 3.
  2. Stranded Conductors: ASTM B 8.
  3. Bonding Jumper: Copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.
- C. Bare Grounding Conductor and Conductor Protector for Wood Poles:
  1. No. 4 AWG minimum, soft-drawn copper.
  2. Conductor Protector: Half-round PVC.
- D. Grounding Bus: Predrilled rectangular bars of annealed copper, 1/4 by 4 inches (6.3 by 100 mm) in cross section, with 9/32-inch (7.14-mm) holes spaced 1-1/8 inches (28 mm) apart. Stand-off insulators for mounting shall comply with UL 891 for use in switchboards, 600 V. Lexan or PVC, impulse tested at 5000 V.



## 2.2 CONNECTORS

- A. Listed and labeled by an NRTL acceptable NYC Department of Buildings for applications in which used and for specific types, sizes, and combinations of conductors and other items connected.
- B. Bolted Connectors for Conductors and Pipes: Copper or copper alloy, pressure type with at least two bolts.
  - 1. Pipe Connectors: Clamp type, sized for pipe.
- C. Welded Connectors: Exothermic-welding kits of types recommended by kit manufacturer for materials being joined and installation conditions. Used for bonding to steel and as indicated.
- D. Bus-bar Connectors: Mechanical type, cast silicon bronze, solderless compression-type wire terminals, and long-barrel, two-bolt connection to ground bus bar.

## 2.3 GROUNDING ELECTRODES

- A. Ground Rods: Copper-clad steel, 3/4 inch by 10 feet (19 mm by 3 m).

## PART 3 - EXECUTION

### 3.1 APPLICATIONS

- A. Conductors: Install solid conductor for No. 10 AWG and smaller, and stranded conductors for No. 8 AWG and larger unless otherwise indicated.
- B. Isolated Grounding Conductors: Green-colored insulation with continuous yellow stripe. On feeders with isolated ground, identify grounding conductor where visible to normal inspection, with alternating bands of green and yellow tape, with at least three bands of green and two bands of yellow.
- C. Grounding Bus: Install in electrical and telephone equipment rooms, in rooms housing service equipment, and elsewhere as indicated.
  - 1. Install bus on insulated spacers 2 inches (50 mm) minimum from wall, 6 inches (150 mm) above finished floor unless otherwise indicated.
  - 2. Where indicated on both sides of doorways, route bus up to top of door frame, across top of doorway, and down to specified height above floor; connect to horizontal bus.
- D. Conductor Terminations and Connections:
  - 1. Pipe and Equipment Grounding Conductor Terminations: Bolted connectors.
  - 2. Connections to Structural Steel: Welded connectors.



### 3.2 EQUIPMENT GROUNDING

- A. Install insulated equipment grounding conductors with all feeders and branch circuits.
- B. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
  - 1. Feeders and branch circuits.
  - 2. Lighting circuits.
  - 3. Receptacle circuits.
  - 4. Single-phase motor and appliance branch circuits.
  - 5. Three-phase motor and appliance branch circuits.
  - 6. Flexible raceway runs.
  - 7. Armored and metal-clad cable runs.
  - 8. Busway Supply Circuits: Install insulated equipment grounding conductor from grounding bus in the switchgear, switchboard, or distribution panel to equipment grounding bar terminal on busway.
  - 9. Computer and Rack-Mounted Electronic Equipment Circuits: Install insulated equipment grounding conductor in branch-circuit runs from equipment-area power panels and power-distribution units.
- C. Air-Duct Equipment Circuits: Install insulated equipment grounding conductor to duct-mounted electrical devices operating at 120 V and more, including air cleaners, heaters, dampers, humidifiers, and other duct electrical equipment. Bond conductor to each unit and to air duct and connected metallic piping.
- D. Water Heater, Heat-Tracing, and Antifrost Heating Cables: Install a separate insulated equipment grounding conductor to each electric water heater and heat-tracing cable. Bond conductor to heater units, piping, connected equipment, and components.
- E. Isolated Grounding Receptacle Circuits: Install an insulated equipment grounding conductor connected to the receptacle grounding terminal. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service unless otherwise indicated.
- F. Isolated Equipment Enclosure Circuits: For designated equipment supplied by a branch circuit or feeder, isolate equipment enclosure from supply circuit raceway with a nonmetallic raceway fitting listed for the purpose. Install fitting where raceway enters enclosure, and install a separate insulated equipment grounding conductor. Isolate conductor from raceway and from panelboard grounding terminals. Terminate at equipment grounding conductor terminal of the applicable derived system or service unless otherwise indicated.

### 3.3 INSTALLATION

- A. Grounding Conductors: Route along shortest and straightest paths possible unless otherwise indicated or required by Code. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.



- B. Ground Rods: Drive rods until tops are 2 inches (50 mm) below finished floor or final grade unless otherwise indicated.
  - 1. Interconnect ground rods with grounding electrode conductor below grade and as otherwise indicated. Make connections without exposing steel or damaging coating if any.
- C. Bonding Straps and Jumpers: Install in locations accessible for inspection and maintenance except where routed through short lengths of conduit.
  - 1. Bonding to Structure: Bond straps directly to basic structure, taking care not to penetrate any adjacent parts.
  - 2. Bonding to Equipment Mounted on Vibration Isolation Hangers and Supports: Install bonding so vibration is not transmitted to rigidly mounted equipment.
- D. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install tinned bonding jumper to bond across flexible duct connections to achieve continuity.

### 3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
- C. Tests and Inspections:
  - 1. After installing grounding system but before permanent electrical circuits have been energized, test for compliance with requirements.
  - 2. Inspect physical and mechanical condition. Verify tightness of accessible, bolted, electrical connections with a calibrated torque wrench according to manufacturer's written instructions.
  - 3. Test completed grounding system at each location where a maximum ground-resistance level is specified, at service disconnect enclosure grounding terminal, and at individual ground rods. Make tests at ground rods before any conductors are connected.
    - a. Measure ground resistance no fewer than two full days after last trace of precipitation and without soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
    - b. Perform tests by fall-of-potential method according to IEEE 81.
  - 4. Prepare dimensioned Drawings locating each test well, ground rod and ground-rod assembly, and other grounding electrodes. Identify each by letter in alphabetical order, and key to the record of tests and observations. Include the number of rods driven and their depth at each location, and include observations of weather and other phenomena that may affect test results. Describe measures taken to improve test results.



- D. Grounding system will be considered defective if it does not pass tests and inspections.
- E. Prepare test and inspection reports.
- F. Report measured ground resistances that exceed the following values:
  - 1. Power and Lighting Equipment or System with Capacity of 500 kVA and Less: 10 ohms.
- G. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Commissioner promptly and include recommendations to reduce ground resistance.

END OF SECTION 260526



## SECTION 260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project:
  - 1. Contract Drawings
  - 2. Specifications
  - 3. General Conditions
  - 4. Addendum
  - 5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Hangers and supports for electrical equipment and systems.
  - 2. Construction requirements for concrete bases.

#### 1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. IMC: Intermediate metal conduit.
- C. RMC: Rigid metal conduit.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. Provide supports for multiple raceways, including comprehensive engineering analysis by a qualified professional engineer licensed in the State of New York., using performance requirements and design criteria indicated.
- B. Supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- C. Provide equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
- D. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this Project, with a minimum structural safety factor of five times the applied force.



## 1.5 ACTION SUBMITTALS

- A. Product Data: For the following:
  - 1. Steel slotted support systems.
- B. Shop Drawings: Signed and sealed by a qualified professional engineer licensed in the State of New York. Show fabrication and installation details and include calculations for the following:
  - 1. Trapeze hangers. Include Product Data for components.
  - 2. Steel slotted channel systems. Include Product Data for components.
  - 3. Equipment supports.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Welding certificates.

## 1.7 QUALITY ASSURANCE

- A. Welding: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Comply with NFPA 70.

## 1.8 COORDINATION

- A. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified together with concrete Specifications.
- B. Coordinate installation of roof curbs, equipment supports, and roof penetrations

## PART 2 - PRODUCTS

### 2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS

- A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
  - 1. Manufacturers or approved equal: Subject to compliance with requirements, provide products by one of the following:
    - a. Allied Tube & Conduit.
    - b. Cooper B-Line, Inc.; a division of Cooper Industries.
    - c. ERICO International Corporation.
    - d. GS Metals Corp.





- e. Thomas & Betts Corporation.
  - f. Unistrut; Tyco International, Ltd.
  - g. Wesanco, Inc.
- 2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
  - 3. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
  - 4. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
  - 5. Channel Dimensions: Selected for applicable load criteria.
- B. Raceway and Cable Supports: As described in NECA 1 and NECA 101.
- C. Conduit and Cable Support Devices: Steel hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
- D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.
- E. Structural Steel for Fabricated Supports and Restraints: ASTM A 36/A 36M, steel plates, shapes, and bars; black and galvanized.
- F. Mounting, Anchoring, and Attachment Components: Items for fastening electrical items or their supports to building surfaces include the following:
- 1. Powder-Actuated Fasteners: Threaded-steel stud, for use in hardened portland cement concrete, steel, or wood, with tension, shear, and pullout capacities appropriate for supported loads and building materials where used.
    - a. Manufacturers or approved equal: Subject to compliance with requirements, provide products by one of the following:
      - 1) Hilti Inc.
      - 2) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
      - 3) MKT Fastening, LLC.
      - 4) Simpson Strong-Tie Co., Inc.; Masterset Fastening Systems Unit.
  - 2. Mechanical-Expansion Anchors: Insert-wedge-type, zinc-coated steel, for use in hardened portland cement concrete with tension, shear, and pullout capacities appropriate for supported loads and building materials in which used.
    - a. Manufacturers or approved equal: Subject to compliance with requirements, provide products by one of the following:
      - 1) Cooper B-Line, Inc.; a division of Cooper Industries.
      - 2) Empire Tool and Manufacturing Co., Inc.



- 3) Hilti Inc.
  - 4) ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
  - 5) MKT Fastening, LLC.
3. Concrete Inserts: Steel or malleable-iron, slotted support system units similar to MSS Type 18; complying with MFMA-4 or MSS SP-58.
  4. Clamps for Attachment to Steel Structural Elements: MSS SP-58, type suitable for attached structural element.
  5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
  6. Toggle Bolts: All-steel springhead type.
  7. Hanger Rods: Threaded steel.

## 2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.

## PART 3 - EXECUTION

### 3.1 APPLICATION

- A. Comply with NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except if requirements in this Section are stricter.
- B. Maximum Support Spacing and Minimum Hanger Rod Size for Raceway: Space supports for EMT, IMC, and RMC as required by NFPA 70. Minimum rod size shall be 1/4 inch (6 mm) in diameter.
- C. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted or other support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
  1. Secure raceways and cables to these supports with single-bolt conduit clamps using spring friction action for retention in support channel.
- D. Spring-steel clamps designed for supporting single conduits without bolts may be used for 1-1/2-inch (38-mm) and smaller raceways serving branch circuits and communication systems above suspended ceilings and for fastening raceways to trapeze supports.



### 3.2 SUPPORT INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except as specified in this Article.
- B. Raceway Support Methods: In addition to methods described in NECA 1, EMT and IMC may be supported by openings through structure members, as permitted in NFPA 70.
- C. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (90 kg).
- D. Mounting and Anchorage of Surface-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
  - 1. To Wood: Fasten with lag screws or through bolts.
  - 2. To New Concrete: Bolt to concrete inserts.
  - 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
  - 4. To Existing Concrete: Expansion anchor fasteners.
  - 5. Instead of expansion anchors, powder-actuated driven threaded studs provided with lock washers and nuts may be used in existing standard-weight concrete 4 inches (100 mm) thick or greater. Do not use for anchorage to lightweight-aggregate concrete or for slabs less than 4 inches (100 mm) thick.
  - 6. To Steel: Welded threaded studs complying with AWS D1.1/D1.1M, with lock washers and nuts, beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69, and Spring-tension clamps.
  - 7. To Light Steel: Sheet metal screws.
  - 8. Items Mounted on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to substrate.
- E. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars.

### 3.3 INSTALLATION OF FABRICATED METAL SUPPORTS

- A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- B. Field Welding: Comply with AWS D1.1/D1.1M.



### 3.4 PAINTING

- A. Touchup: Clean field welds and abraded areas of shop paint. Paint exposed areas immediately after erecting hangers and supports. Use same materials as used for shop painting. Comply with SSPC-PA 1 requirements for touching up field-painted surfaces.
  - 1. Apply paint by brush or spray to provide minimum dry film thickness of 2.0 mils (0.05 mm).
- B. Touchup: Comply with requirements in Section 099101 "Construction Painting", for cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on miscellaneous metal.
- C. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION 260529



## SECTION 260533 - RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

A. Section Includes:

1. Metal conduits, tubing, and fittings.
2. Nonmetal conduits, tubing, and fittings.
3. Surface raceways.
4. Boxes, enclosures, and cabinets.

#### 1.3 DEFINITIONS

- A. ARC: Aluminum rigid conduit.
- B. GRC: Galvanized rigid steel conduit.
- C. IMC: Intermediate metal conduit.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For surface raceways, wireways and fittings, floor boxes, hinged-cover enclosures, and cabinets.
- B. Shop Drawings: For custom enclosures and cabinets. Include plans, elevations, sections, and attachment details.
- C. Samples: For wireways and surface raceways and for each color and texture specified, 12 inches (300 mm) long.



**1.5 INFORMATIONAL SUBMITTALS**

- A. Coordination Drawings: Conduit routing plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of items involved:
  - 1. Structural members in paths of conduit groups with common supports.
  - 2. HVAC and plumbing items and architectural features in paths of conduit groups with common supports.
- B. Qualification Data: For professional engineer, licensed in the State of New York.
- C. Seismic Qualification Certificates: For enclosures, cabinets, and conduit racks and their mounting provisions, including those for internal components, from manufacturer.
  - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
  - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
  - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
  - 4. Detailed description of conduit support devices and interconnections on which the certification is based and their installation requirements.
- D. Source quality-control reports.

**PART 2 - PRODUCTS**

**2.1 METAL CONDUITS, TUBING, AND FITTINGS**

- A. Manufacturers or approved equal: Subject to compliance with requirements, provide products by the following:
  - 1. AFC Cable Systems, Inc.
  - 2. Alfex Inc.
  - 3. Allied Tube & Conduit; a Tyco International Ltd. Co.
  - 4. Anamet Electrical, Inc.; Anaconda Metal Hose.
  - 5. Electri-Flex Company.
  - 6. Manhattan/CDT/Cole-Flex.
  - 7. Maverick Tube Corporation.
  - 8. O-Z/Gedney; a unit of General Signal.
  - 9. Wheatland Tube Company.
- B. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. GRC: Comply with ANSI C80.1.



- D. ARC: Comply with ANSI C80.5.
- E. IMC: Comply with ANSI C80.6.
- F. PVC-Coated Steel Conduit: PVC-coated rigid steel conduit.
  - 1. Comply with NEMA RN 1.
  - 2. Coating Thickness: 0.040 inch (1 mm), minimum.
- G. EMT: Comply with ANSI C80.3 and UL 797.
- H. FMC: Zinc-coated steel or aluminum.
- I. LFMC: Flexible steel conduit with PVC jacket.
- J. Fittings for Metal Conduit: Comply with NEMA FB 1 and UL 514B.
  - 1. Conduit Fittings for Hazardous (Classified) Locations: Comply with UL 886 and NFPA 70.
  - 2. Fittings for EMT:
    - a. Material: Steel or die cast.
    - b. Type: Setscrew or compression.
  - 3. Coating for Fittings for PVC-Coated Conduit: Minimum thickness of 0.040 inch (1 mm), with overlapping sleeves protecting threaded joints.
- K. Joint Compound for IMC, GRC, or ARC: Approved, as defined in NFPA 70, by NYC Department of Buildings for use in conduit assemblies, and compounded for use to lubricate and protect threaded conduit joints from corrosion and to enhance their conductivity.

## 2.2 NONMETALLIC CONDUITS, TUBING, AND FITTINGS

- A. Manufacturers or approved equal: Subject to compliance with requirements, provide products by the following:
  - 1. AFC Cable Systems, Inc.
  - 2. Anamet Electrical, Inc.; Anaconda Metal Hose.
  - 3. Arnco Corporation.
  - 4. CANTEX Inc.
  - 5. CertainTeed Corp.; Pipe & Plastics Group.
  - 6. Condux International, Inc.
  - 7. ElecSYS, Inc.
  - 8. Electri-Flex Company.
  - 9. Lamson & Sessions; Carlon Electrical Products.
  - 10. Mahattan/CDT/Cole-Flex.
  - 11. RACO; a Hubbell company.
  - 12. Thomas & Betts Corporation.



- B. ENT: Comply with NEMA TC 13.
- C. RNC: NEMA TC 2 unless otherwise indicated.
- D. LFNC: Comply with UL 1660.
- E. Fittings for ENT and RNC: Comply with NEMA TC 3; match to conduit or tubing type and material.
- F. Fittings for LFNC: Comply with UL 514B.

## 2.3 METAL WIREWAYS AND AUXILIARY GUTTERS

- A. Manufacturers or approved equal: Subject to compliance with requirements, provide products by the following:
  - 1. Cooper B-Line, Inc.
  - 2. Hoffman; a Pentair company.
  - 3. Square D; a brand of Schneider Electric.
- B. Description: Sheet metal, complying with UL 870 and NEMA 250, Type 1 unless otherwise indicated, and sized according to NFPA 70.
  - 1. Metal wireways installed outdoors shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- D. Wireway Covers: As indicated.
- E. Finish: Manufacturer's standard enamel finish.

## 2.4 SURFACE RACEWAYS

- A. Surface Metal Raceways: Galvanized steel with snap-on covers.
  - 1. Manufacturers or approved equal: Subject to compliance with requirements, provide products by the following:
    - a. Thomas & Betts Corporation.
    - b. Walker Systems, Inc.; Wiremold Company (The)
    - c. Wiremold Company (The); Electrical Sales Division.





**2.5 BOXES, ENCLOSURES, AND CABINETS**

- A. Manufacturers or approved equal: Subject to compliance with requirements, provide products by the following:
1. Cooper Technologies Company; Cooper Crouse-Hinds.
  2. EGS/Appleton Electric.
  3. Erickson Electrical Equipment Company.
  4. Hoffman.
  5. Hubbell Incorporated; Killark Electric Manufacturing Co. Division.
  6. O-Z/Gedney; a unit of General Signal.
  7. RACO; a Hubbell Company.
  8. Robroy Industries, Inc.; Enclosure Division.
  9. Scott Fetzer Co.; Adalet Division.
  10. Spring City Electrical Manufacturing Company.
  11. Thomas & Betts Corporation.
  12. Walker Systems, Inc.; Wiremold Company (The).
  13. Woodhead, Daniel Company; Woodhead Industries, Inc. Subsidiary.
- B. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.
- C. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1.
- D. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, aluminum, Type FD, with gasketed cover.
- E. Metal Floor Boxes:
1. Material: Cast metal or sheet metal.
  2. Type: Fully adjustable.
  3. Shape: Rectangular.
  4. Listing and Labeling: Metal floor boxes shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- F. Small Sheet Metal Pull and Junction Boxes: NEMA OS 1.
- G. Cast-Metal Access, Pull, and Junction Boxes: Comply with NEMA FB 1 and UL 1773, galvanized, cast iron with gasketed cover.
- H. Gangable boxes are prohibited.
- I. Cabinets:
1. NEMA 250, Type 1 galvanized-steel box with removable interior panel and removable front, finished inside and out with manufacturer's standard enamel.
  2. Hinged door in front cover with flush latch and concealed hinge.
  3. Key latch to match panelboards.



4. Metal barriers to separate wiring of different systems and voltage.
5. Accessory feet where required for freestanding equipment.
6. Nonmetallic cabinets shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

### PART 3 - EXECUTION

#### 3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
  1. Exposed Conduit: GRC.
- B. Indoors: Apply raceway products as specified below unless otherwise indicated:
  1. Exposed, Not Subject to Physical Damage: EMT.
  2. Exposed, Not Subject to Severe Physical Damage: EMT.
  3. Exposed and Subject to Severe Physical Damage: GRC. Raceway locations include the following:
    - a. Loading dock.
    - b. Corridors used for traffic of mechanized carts, forklifts, and pallet-handling units.
  4. Concealed in Ceilings and Interior Walls and Partitions: EMT.
  5. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): FMC, except use LFMC in damp or wet locations.
  6. Damp or Wet Locations: GRC.
  7. Boxes and Enclosures: NEMA 250, Type 1, except use NEMA 250, Type 4 stainless steel in institutional and commercial kitchens and damp or wet locations.
- C. Minimum Raceway Size: 3/4-inch (21-mm) trade size.
- D. Raceway Fittings: Compatible with raceways and suitable for use and location.
  1. Rigid and Intermediate Steel Conduit: Use threaded rigid steel conduit fittings unless otherwise indicated. Comply with NEMA FB 2.10.
  2. EMT: Use setscrew or compression, steel fittings. Comply with NEMA FB 2.10.
  3. Flexible Conduit: Use only fittings listed for use with flexible conduit. Comply with NEMA FB 2.20.
- E. Install nonferrous conduit or tubing for circuits operating above 60 Hz. Where aluminum raceways are installed for such circuits and pass through concrete, install in nonmetallic sleeve.
- F. Do not install aluminum conduits, boxes, or fittings in contact with concrete or earth.
- G. Install surface raceways only where indicated on Drawings.



### 3.2 INSTALLATION

- A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NECA 102 for aluminum conduits. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
- B. Keep raceways at least 6 inches (150 mm) away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
- C. Complete raceway installation before starting conductor installation.
- D. Comply with requirements in Section 260529 "Hangers and Supports for Electrical Systems" for hangers and supports.
- E. Arrange stub-ups so curved portions of bends are not visible above finished slab.
- F. Install no more than the equivalent of three 90-degree bends in any conduit run except for control wiring conduits, for which fewer bends are allowed. Support within 12 inches (300 mm) of changes in direction.
- G. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
- H. Support conduit within 12 inches (300 mm) of enclosures to which attached.
- I. Raceways Embedded in Slabs:
  - 1. Run conduit larger than 1-inch (27-mm) trade size, parallel or at right angles to main reinforcement. Where at right angles to reinforcement, place conduit close to slab support. Secure raceways to reinforcement at maximum 10-foot (3-m) intervals.
  - 2. Arrange raceways to cross building expansion joints at right angles with expansion fittings.
  - 3. Arrange raceways to keep a minimum of 2 inches (50 mm) of concrete cover in all directions.
  - 4. Do not embed threadless fittings in concrete unless specifically approved by Commissioner for each specific location.
  - 5. Change from ENT to IMC before rising above floor.
- J. Stub-ups to Above Recessed Ceilings:
  - 1. Use EMT, IMC, or RMC for raceways.
  - 2. Use a conduit bushing or insulated fitting to terminate stub-ups not terminated in hubs or in an enclosure.
- K. Threaded Conduit Joints, Exposed to Wet, Damp, Corrosive, or Outdoor Conditions: Apply listed compound to threads of raceway and fittings before making up joints. Follow compound manufacturer's written instructions.



- L. Raceway Terminations at Locations Subject to Moisture or Vibration: Use insulating bushings to protect conductors including conductors smaller than No. 4 AWG.
- M. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4-inch (35mm) trade size and insulated throat metal bushings on 1-1/2-inch (41-mm) trade size and larger conduits terminated with locknuts. Install insulated throat metal grounding bushings on service conduits.
- N. Install raceways square to the enclosure and terminate at enclosures with locknuts. Install locknuts hand tight plus 1/4 turn more.
- O. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to assure a continuous ground path.
- P. Cut conduit perpendicular to the length. For conduits 2-inch (53-mm) trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length.
- Q. Install pull wires in empty raceways. Use polypropylene or monofilament plastic line with not less than 200-lb (90-kg) tensile strength. Leave at least 12 inches (300 mm) of slack at each end of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.
- R. Surface Raceways:
  - 1. Install surface raceway with a minimum 2-inch (50-mm) radius control at bend points.
  - 2. Secure surface raceway with screws or other anchor-type devices at intervals not exceeding 48 inches (1200 mm) and with no less than two supports per straight raceway section. Support surface raceway according to manufacturer's written instructions. Tape and glue are not acceptable support methods.
- S. Flexible Conduit Connections: Comply with NEMA RV 3. Use a maximum of 72 inches (1830 mm) of flexible conduit for recessed and semirecessed luminaires, equipment subject to vibration, noise transmission, or movement; and for transformers and motors.
  - 1. Use LFMC in damp or wet locations subject to severe physical damage.
  - 2. Use LFMC or LFNC in damp or wet locations not subject to severe physical damage.
- T. Mount boxes at heights indicated on Drawings. If mounting heights of boxes are not individually indicated, give priority to ADA requirements. Install boxes with height measured to top of box unless otherwise indicated.
- U. Recessed Boxes in Masonry Walls: Saw-cut opening for box in center of cell of masonry block, and install box flush with surface of wall. Prepare block surfaces to provide a flat surface for a raintight connection between box and cover plate or supported equipment and box.
- V. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.
- W. Locate boxes so that cover or plate will not span different building finishes.



- X. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for the purpose.
- Y. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.
- Z. Set metal floor boxes level and flush with finished floor surface.
- AA. Set nonmetallic floor boxes level. Trim after installation to fit flush with finished floor surface.

### 3.3 SLEEVE AND SLEEVE-SEAL INSTALLATION FOR ELECTRICAL PENETRATIONS

- A. Install sleeves and sleeve seals at penetrations of exterior floor and wall assemblies. Comply with requirements in Section 260544 "Sleeves and Sleeve Seals for Electrical Raceways and Cabling."

### 3.4 FIRESTOPPING

- A. Install firestopping at penetrations of fire-rated floor and wall assemblies.

### 3.5 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage and deterioration.
  - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
  - 2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

END OF SECTION 260533



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**SECTION 260544 - SLEEVES AND SLEEVE SEALS FOR ELECTRICAL  
RACEWAYS AND CABLING**

**PART 1 - GENERAL**

**1.1 RELATED DOCUMENTS**

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

**1.2 SUMMARY**

A. Section Includes:

1. Sleeves for raceway and cable penetration of non-fire-rated construction walls and floors.
2. Sleeve-seal systems.
3. Grout.
4. Silicone sealants.

**1.3 ACTION SUBMITTALS**

A. Product Data: For each type of product.

**PART 2 - PRODUCTS**

**2.1 SLEEVES**

A. Wall Sleeves:

1. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, zinc coated, plain ends.
2. Cast-Iron Pipe Sleeves: Cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop unless otherwise indicated.

B. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies: Galvanized-steel sheet; 0.0239-inch (0.6-mm) minimum thickness; round tube closed with welded longitudinal joint, with tabs for screw-fastening the sleeve to the board.



- C. PVC-Pipe Sleeves: ASTM D 1785, Schedule 40.
- D. Molded-PVC Sleeves: With nailing flange for attaching to wooden forms.
- E. Molded-PE or -PP Sleeves: Removable, tapered-cup shaped, and smooth outer surface with nailing flange for attaching to wooden forms.
- F. Sleeves for Rectangular Openings:
  - 1. Material: Galvanized sheet steel.
  - 2. Minimum Metal Thickness:
    - a. For sleeve cross-section rectangle perimeter less than 50 inches (1270 mm) and with no side larger than 16 inches (400 mm), thickness shall be 0.052 inch (1.3 mm).
    - b. For sleeve cross-section rectangle perimeter 50 inches (1270 mm) or more and one or more sides larger than 16 inches (400 mm), thickness shall be 0.138 inch (3.5 mm).

## 2.2 SLEEVE-SEAL SYSTEMS

- A. Description: Modular sealing device, designed for field assembly, to fill annular space between sleeve and raceway or cable.
  - 1. Manufacturers or approved equal: Subject to compliance with requirements, provide products by one of the following:
    - a. Advance Products & Systems, Inc.
    - b. CALPICO, Inc.
    - c. Metraflex Company (The).
    - d. Pipeline Seal and Insulator, Inc.
    - e. Proco Products, Inc.
  - 2. Sealing Elements: EPDM rubber interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
  - 3. Pressure Plates: Carbon steel.
  - 4. Connecting Bolts and Nuts: Carbon steel, with corrosion-resistant coating, of length required to secure pressure plates to sealing elements.

## 2.3 GROUT

- A. Description: Nonshrink; recommended for interior and exterior sealing openings in non-fire-rated walls or floors.
- B. Standard: ASTM C 1107/C 1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
- C. Design Mix: 5000-psi (34.5-MPa), 28-day compressive strength.





- D. Packaging: Premixed and factory packaged.

## 2.4 SILICONE SEALANTS

- A. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below.
1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces that are not fire rated.
  2. Sealant shall have VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
  3. Sealant shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- B. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.

## PART 3 - EXECUTION

### 3.1 SLEEVE INSTALLATION FOR NON-FIRE-RATED ELECTRICAL PENETRATIONS

- A. Comply with NECA 1.
- B. Comply with NEMA VE 2 for cable tray and cable penetrations.
- C. Sleeves for Conduits Penetrating Above-Grade Non-Fire-Rated Concrete and Masonry-Unit Floors and Walls:
1. Interior Penetrations of Non-Fire-Rated Walls and Floors:
    - a. Seal annular space between sleeve and raceway or cable, using joint sealant appropriate for size, depth, and location of joint.
    - b. Seal space outside of sleeves with mortar or grout. Pack sealing material solidly between sleeve and wall so no voids remain. Tool exposed surfaces smooth; protect material while curing.
  2. Use pipe sleeves unless penetration arrangement requires rectangular sleeved opening.
  3. Size pipe sleeves to provide 1/4-inch (6.4-mm) annular clear space between sleeve and raceway or cable unless sleeve seal is to be installed or unless seismic criteria require different clearance.
  4. Install sleeves for wall penetrations unless core-drilled holes or formed openings are used. Install sleeves during erection of walls. Cut sleeves to length for mounting flush with both surfaces of walls. Deburr after cutting.
  5. Install sleeves for floor penetrations. Extend sleeves installed in floors 2 inches (50 mm) above finished floor level. Install sleeves during erection of floors.



- D. Sleeves for Conduits Penetrating Non-Fire-Rated Gypsum Board Assemblies:
  - 1. Use circular metal sleeves unless penetration arrangement requires rectangular sleeved opening.
  - 2. Seal space outside of sleeves with approved joint compound for gypsum board assemblies.
- E. Roof-Penetration Sleeves: Seal penetration of individual raceways and cables with flexible boot-type flashing units applied in coordination with roofing work.
- F. Aboveground, Exterior-Wall Penetrations: Seal penetrations using steel pipe sleeves and mechanical sleeve seals. Select sleeve size to allow for 1-inch (25-mm) annular clear space between pipe and sleeve for installing mechanical sleeve seals.
- G. Underground, Exterior-Wall and Floor Penetrations: Install cast-iron pipe sleeves. Size sleeves to allow for 1-inch (25-mm) annular clear space between raceway or cable and sleeve for installing sleeve-seal system.

### 3.2 SLEEVE-SEAL-SYSTEM INSTALLATION

- A. Install sleeve-seal systems in sleeves in exterior concrete walls and slabs-on-grade at raceway entries into building.
- B. Install type and number of sealing elements recommended by manufacturer for raceway or cable material and size. Position raceway or cable in center of sleeve. Assemble mechanical sleeve seals and install in annular space between raceway or cable and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

### 3.3 SLEEVE-SEAL-FITTING INSTALLATION

- A. Install sleeve-seal fittings in new walls and slabs as they are constructed.
- B. Assemble fitting components of length to be flush with both surfaces of concrete slabs and walls. Position waterstop flange to be centered in concrete slab or wall.
- C. Secure nailing flanges to concrete forms.
- D. Using grout, seal the space around outside of sleeve-seal fittings.

END OF SECTION 260544

## SECTION 260553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project:
1. Contract Drawings
  2. Specifications
  3. General Conditions
  4. Addendum
  5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

- A. Section Includes:
1. Identification for raceways.
  2. Identification of power and control cables.
  3. Identification for conductors.
  4. Underground-line warning tape.
  5. Warning labels and signs.
  6. Instruction signs.
  7. Equipment identification labels.
  8. Miscellaneous identification products.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each electrical identification product indicated.
- B. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.

#### 1.4 QUALITY ASSURANCE

- A. Comply with ANSI A13.1 and IEEE C2.
- B. Comply with NFPA 70.
- C. Comply with 29 CFR 1910.145.



## 1.5 FACILITY OPERATIONS REQUIREMENTS

### A. Equipment to Be Labeled: All equipment requires a label 94D shall include but not limited to:

1. Panelboards, electrical cabinets, and enclosures.
2. Access doors and panels for concealed electrical items.
3. Electrical switchgear and switchboards.
4. Transformers.
5. Electrical substations.
6. Emergency system boxes and enclosures.
7. Motor-control centers.
8. Disconnect switches.
9. Enclosed circuit breakers.
10. Motor starters.
11. Push-button stations.
12. Power transfer equipment.
13. Contactors.
14. Remote-controlled switches, dimmer modules, and control devices.
15. Battery inverter units.
16. Battery racks.
17. Power-generating units.
18. Voice and data cable terminal equipment.
19. Master clock and program equipment.
20. Intercommunication and call system master and staff stations.
21. Television/audio components, racks, and controls.
22. Fire-alarm control panel and annunciators.
23. Security and intrusion-detection control stations, control panels, terminal cabinets, and racks.
24. Monitoring and control equipment.
25. Uninterruptible power supply equipment.
26. Terminals, racks, and patch panels for voice and data communication and for signal and control functions.
27. Automatic Transfer Equipment Power Distribution Units.
28. Receptacles and lighting switches.

### B. Submit the following Product Data:

1. Identification Schedule: An index of nomenclature of electrical equipment and system components used in identification signs and labels.
2. Samples: For each type of label and sign to illustrate size, colors, lettering style, mounting provisions, and graphic features of identification products.

## 1.6 COORDINATION

- ### A.
- Coordinate identification names, abbreviations, colors, and other features with requirements in other Sections requiring identification applications, Drawings, Shop Drawings, manufacturer's wiring diagrams, and the Operation and Maintenance Manual; and with those required by codes, standards, and 29 CFR 1910.145. Use consistent designations throughout Project.



- B. Coordinate installation of identifying devices with completion of covering and painting of surfaces where devices are to be applied.
- C. Coordinate installation of identifying devices with location of access panels and doors.
- D. Install identifying devices before installing acoustical ceilings and similar concealment.

## **PART 2 - PRODUCTS**

### **2.1 POWER RACEWAY IDENTIFICATION MATERIALS**

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway size.
- B. Colors for Raceways Carrying Circuits at 600 V or Less:
  - 1. Black letters on an orange field.
  - 2. Legend: Indicate voltage and system or service type.
- C. Self-Adhesive Vinyl Labels for Raceways Carrying Circuits at 600 V or Less: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- D. Snap-Around Labels for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- E. Snap-Around, Color-Coding Bands for Raceways Carrying Circuits at 600 V or Less: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches (50 mm) long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- F. Write-On Tags: Polyester tag, 0.015 inch (0.38 mm) thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
  - 1. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

### **2.2 CONDUCTOR AND COMMUNICATION AND CONTROL-CABLE IDENTIFICATION MATERIALS**

- A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils thick by 1 to 2 inches wide.



## 2.3 ARMORED AND METAL-CLAD CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.
- B. Colors for Raceways Carrying Circuits at 600 V and Less:
  - 1. Black letters on an orange field.
  - 2. Legend: Indicate voltage and system or service type.
- C. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- D. Self-Adhesive Vinyl Tape: Colored, heavy duty, waterproof, fade resistant; 2 inches (50 mm) wide; compounded for outdoor use.

## 2.4 POWER AND CONTROL CABLE IDENTIFICATION MATERIALS

- A. Comply with ANSI A13.1 for minimum size of letters for legend and for minimum length of color field for each raceway and cable size.
- B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- C. Metal Tags: Brass or aluminum, 2 by 2 by 0.05 inch (50 by 50 by 1.3 mm), with stamped legend, punched for use with self-locking cable tie fastener.
- D. Write-On Tags: Polyester tag, 0.015 inch (0.38 mm) thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
  - 1. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.
- E. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- F. Snap-Around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches (50 mm) long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.

## 2.5 CONDUCTOR IDENTIFICATION MATERIALS

- A. Color-Coding Conductor Tape: Colored, self-adhesive vinyl tape not less than 3 mils (0.08 mm) thick by 1 to 2 inches (25 to 50 mm) wide.



- B. Self-Adhesive Vinyl Labels: Preprinted, flexible label laminated with a clear, weather- and chemical-resistant coating and matching wraparound adhesive tape for securing ends of legend label.
- C. Snap-Around Labels: Slit, pretensioned, flexible, preprinted, color-coded acrylic sleeve, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- D. Snap-Around, Color-Coding Bands: Slit, pretensioned, flexible, solid-colored acrylic sleeve, 2 inches (50 mm) long, with diameter sized to suit diameter of raceway or cable it identifies and to stay in place by gripping action.
- E. Marker Tapes: Vinyl or vinyl-cloth, self-adhesive wraparound type, with circuit identification legend machine printed by thermal transfer or equivalent process.
- F. Write-On Tags: Polyester tag, 0.015 inch (0.38 mm) thick, with corrosion-resistant grommet and cable tie for attachment to conductor or cable.
  - 1. Marker for Tags: Machine-printed, permanent, waterproof, black ink marker recommended by printer manufacturer.

## 2.6 UNDERGROUND-LINE WARNING TAPE

- A. Description: Permanent, bright-colored, continuous-printed, polyethylene tape.
  - 1. Not less than 6 inches wide by 4 mils thick.
  - 2. Compounded for permanent direct-burial service.
  - 3. Embedded continuous metallic strip or core.
  - 4. Printed legend shall indicate type of underground line.

## 2.7 WARNING LABELS AND SIGNS

- A. Comply with NFPA 70 and 29 CFR 1910.145.
- B. Self-Adhesive Warning Labels: Factory-printed, multicolor, pressure-sensitive adhesive labels, configured for display on front cover, door, or other access to equipment unless otherwise indicated.
- C. Baked-Enamel Warning Signs:
  - 1. Preprinted aluminum signs, punched or drilled for fasteners, with colors, legend, and size required for application.
  - 2. 1/4-inch (6.4-mm) grommets in corners for mounting.
  - 3. Nominal size, 7 by 10 inches (180 by 250 mm).



**D. Metal-Backed, Butyrate Warning Signs:**

1. Weather-resistant, nonfading, preprinted, cellulose-acetate butyrate signs with 0.0396-inch (1-mm) galvanized-steel backing; and with colors, legend, and size required for application.
2. 1/4-inch (6.4-mm) grommets in corners for mounting.
3. Nominal size, 10 by 14 inches (250 by 360 mm).

**E. Warning label and sign shall include, but are not limited to, the following legends:**

1. Multiple Power Source Warning: "DANGER - ELECTRICAL SHOCK HAZARD - EQUIPMENT HAS MULTIPLE POWER SOURCES."
2. Workspace Clearance Warning: "WARNING - OSHA REGULATION - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES (915 MM)."

**2.8 INSTRUCTION SIGNS**

**A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch (1.6 mm) thick for signs up to 20 sq. inches (129 sq. cm) and 1/8 inch (3.2 mm) thick for larger sizes.**

1. Engraved legend with black letters on white face.
2. Punched or drilled for mechanical fasteners.
3. Framed with mitered acrylic molding and arranged for attachment at applicable equipment.

**B. Adhesive Film Label: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch (10 mm).**

**C. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch (10 mm). Overlay shall provide a weatherproof and UV-resistant seal for label.**

**2.9 EQUIPMENT IDENTIFICATION LABELS**

**A. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting. White letters on a dark-gray background. Minimum letter height shall be 3/8 inch (10 mm).**

**2.10 CABLE TIES**

**A. General-Purpose Cable Ties: Fungus inert, self extinguishing, one piece, self locking, Type 6/6 nylon.**

1. Minimum Width: 3/16 inch (5 mm).
2. Tensile Strength at 73 deg F (23 deg C), According to ASTM D 638: 12,000 psi (82.7 MPa).





3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
  4. Color: Black except where used for color-coding.
- B. UV-Stabilized Cable Ties: Fungus inert, designed for continuous exposure to exterior sunlight, self extinguishing, one piece, self locking, Type 6/6 nylon.
1. Minimum Width: 3/16 inch (5 mm).
  2. Tensile Strength at 73 deg F (23 deg C), According to ASTM D 638: 12,000 psi (82.7 MPa).
  3. Temperature Range: Minus 40 to plus 185 deg F (Minus 40 to plus 85 deg C).
  4. Color: Black.
- C. Plenum-Rated Cable Ties: Self extinguishing, UV stabilized, one piece, self locking.
1. Minimum Width: 3/16 inch (5 mm).
  2. Tensile Strength at 73 deg F (23 deg C), According to ASTM D 638: 7000 psi (48.2 MPa).
  3. UL 94 Flame Rating: 94V-0.
  4. Temperature Range: Minus 50 to plus 284 deg F (Minus 46 to plus 140 deg C).
  5. Color: Black.

## 2.11 MISCELLANEOUS IDENTIFICATION PRODUCTS

- A. Cable Ties: Fungus-inert, self-extinguishing, 1-piece, self-locking, Type 6/6 nylon cable ties.
1. Minimum Width: 3/16 inch.
  2. Tensile Strength: 50 lb, minimum.
  3. Temperature Range: Minus 40 to plus 185 deg F.
  4. Color: Black, except where used for color-coding.
- B. Paint: Paint materials and application requirements are specified in Division 09 section 099101 "Construction Painting"
1. Exterior Ferrous Metal:
    - a. Semigloss Alkyd-Enamel Finish: finish coat over a primer.
      - 1) Primer: Exterior ferrous-metal primer.
      - 2) Finish Coats: Exterior semigloss alkyd enamel.
  2. Exterior Zinc-Coated Metal (except Raceways):
    - a. Semigloss Alkyd-Enamel Finish: finish coat over a primer.
      - 1) Primer: Exterior zinc-coated metal primer.
      - 2) Finish Coats: Exterior semigloss alkyd enamel.



3. Interior Ferrous Metal:
    - a. Semigloss Acrylic-Enamel Finish: finish coat over a primer.
      - 1) Primer: Interior ferrous-metal primer.
      - 2) Finish Coats: Interior semigloss acrylic enamel.
  4. Interior Zinc-Coated Metal (except Raceways):
    - a. Semigloss Acrylic-Enamel Finish: finish coat over a primer.
      - 1) Primer: Interior zinc-coated metal primer.
      - 2) Finish Coats: Interior semigloss acrylic enamel.
- C. Fasteners for Labels and Signs: Self-tapping, stainless-steel screws or stainless-steel machine screws with nuts and flat and lock washers.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Verify identity of each item before installing identification products.
- B. Location: Install identification materials and devices at locations for most convenient viewing without interference with operation and maintenance of equipment.
- C. Apply identification devices to surfaces that require finish after completing finish work.
- D. Self-Adhesive Identification Products: Clean surfaces before application, using materials and methods recommended by manufacturer of identification device.
- E. Attach signs and plastic labels that are not self-adhesive type with mechanical fasteners appropriate to the location and substrate.
- F. System Identification Color-Coding Bands for Raceways and Cables: Each color-coding band shall completely encircle cable or conduit. Place adjacent bands of two-color markings in contact, side by side. Locate bands at changes in direction, at penetrations of walls and floors, at 50-foot (15-m) maximum intervals in straight runs, and at 25-foot (7.6-m) maximum intervals in congested areas.
- G. Aluminum Wraparound Marker Labels and Metal Tags: Secure tight to surface of conductor or cable at a location with high visibility and accessibility.
- H. Cable Ties: For attaching tags. Use general-purpose type, except as listed below:
  1. Outdoors: UV-stabilized nylon.
  2. In Spaces Handling Environmental Air: Plenum rated.



- I. Painted Identification: Comply with requirements in painting Sections for surface preparation and paint application.

### 3.2 IDENTIFICATION SCHEDULE

- A. Accessible Raceways and Cables within Buildings: Identify the covers of each junction and pull box of the following systems with self-adhesive vinyl labels with the wiring system legend and system voltage. System legends shall be as follows:
1. Equipment Emergency Power.
  2. Power.
  3. UPS.
  4. Life Safety Branch.
  5. Critical Branch.
- B. Power-Circuit Conductor Identification, 600 V or Less: For conductors in vaults, pull and junction boxes, manholes, and handholes, use color-coding conductor tape to identify the phase.
1. Color-Coding for Phase and Voltage Level Identification, 600 V or Less: Use colors listed below for ungrounded branch-circuit conductors.
    - a. Color shall be factory applied or field applied for sizes larger than No. 8 AWG, if NYC Department of Buildings permit.
    - b. Colors for 208/120-V Circuits:
      - 1) Phase A: Black.
      - 2) Phase B: Red.
      - 3) Phase C: Blue.
    - c. Colors for 480/277-V Circuits:
      - 1) Phase A: Brown.
      - 2) Phase B: Orange.
      - 3) Phase C: Yellow.
    - d. Field-Applied, Color-Coding Conductor Tape: Apply in half-lapped turns for a minimum distance of 6 inches (150 mm) from terminal points and in boxes where splices or taps are made. Apply last two turns of tape with no tension to prevent possible unwinding. Locate bands to avoid obscuring factory cable markings.
- C. Install instructional sign including the color-code for grounded and ungrounded conductors using adhesive-film-type labels.
- D. Conductors to Be Extended in the Future: Attach write-on tags to conductors and list source.
- E. Warning Labels for Indoor Cabinets, Boxes, and Enclosures for Power and Lighting: Self-adhesive warning labels or baked-enamel warning signs.
1. Comply with 29 CFR 1910.145.



2. Identify system voltage with black letters on an orange background.
  3. Apply to exterior of door, cover, or other access.
  4. For equipment with multiple power or control sources, apply to door or cover of equipment including, but not limited to, the following:
    - a. Power transfer switches.
- F. Operating Instruction Signs: Install instruction signs to facilitate proper operation and maintenance of electrical systems and items to which they connect. Install instruction signs with approved legend where instructions are needed for system or equipment operation.
- G. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.
1. Labeling Instructions:
    - a. Indoor Equipment: Engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch- (13-mm-) high letters on 1-1/2-inch- (38-mm-) high label; where two lines of text are required, use labels 2 inches (50 mm) high.
    - b. Outdoor Equipment: Engraved, laminated acrylic or melamine label.
    - c. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
    - d. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.
  2. Equipment to Be Labeled:
    - a. Panelboards: Typewritten directory of circuits in the location provided by panelboard manufacturer. Panelboard identification shall be engraved, laminated acrylic or melamine label.
    - b. Enclosures and electrical cabinets.
    - c. Access doors and panels for concealed electrical items.
    - d. Switchgear.
    - e. Switchboards.
    - f. Transformers: Label that includes tag designation shown on Drawings for the transformer, feeder, and panelboards or equipment supplied by the secondary.
    - g. Substations.
    - h. Emergency system boxes and enclosures.
    - i. Motor-control centers.
    - j. Enclosed switches.
    - k. Enclosed circuit breakers.
    - l. Enclosed controllers.
    - m. Variable-speed controllers.
    - n. Push-button stations.



- o. Power transfer equipment.
- p. Remote-controlled switches, dimmer modules, and control devices.
- q. Battery-inverter units.
- r. Battery racks.
- s. Power-generating units.
- t. Monitoring and control equipment.
- u. UPS equipment.

END OF SECTION 260553



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## SECTION 262726 - WIRING DEVICES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project:
  - 1. Contract Drawings
  - 2. Specifications
  - 3. General Conditions
  - 4. Addendum
  - 5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

- A. Section Includes:
  - 1. Receptacles, receptacles with integral GFCI, and associated device plates.
  - 2. Twist-locking receptacles.
  - 3. Receptacles with integral surge-suppression units.
  - 4. Isolated-ground receptacles.
  - 5. Tamper-resistant receptacles.
  - 6. Weather-resistant receptacles.
  - 7. Snap switches and wall-box dimmers.
  - 8. Solid-state fan speed controls.
  - 9. Wall-switch and exterior occupancy sensors.
  - 10. Communications outlets.
  - 11. Pendant cord-connector devices.
  - 12. Cord and plug sets.
  - 13. Floor service outlets, poke-through assemblies, service poles, and multioutlet assemblies.

#### 1.3 DEFINITIONS

- A. EMI: Electromagnetic interference.
- B. GFCI: Ground-fault circuit interrupter.
- C. Pigtail: Short lead used to connect a device to a branch-circuit conductor.
- D. RFI: Radio-frequency interference.
- E. TVSS: Transient voltage surge suppressor.
- F. UTP: Unshielded twisted pair.



#### 1.4 ADMINISTRATIVE REQUIREMENTS

##### A. Coordination:

1. Receptacles for City of New York-Furnished Equipment: Match plug configurations.
2. Cord and Plug Sets: Match equipment requirements.

#### 1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: List of legends and description of materials and process used for premarking wall plates.
- C. Samples: One for each type of device and wall plate specified, in each color specified.

#### 1.6 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.

#### 1.7 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing-label warnings and instruction manuals that include labeling conditions.

### PART 2 - PRODUCTS

#### 2.1 MANUFACTURERS

- A. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.
- B. Available Manufacturers or approved equal: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the work include the following:
  1. Leviton Mfg. Company Inc. (Leviton).
  2. Pass & Seymour/Legrand; Wiring Devices and Accessories (Pass & Seymour).
  3. Cooper Wiring Devices; a division of Cooper Industries, Inc. (Cooper)

#### 2.2 STRAIGHT BLADE RECEPTACLES

- A. Duplex Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 configuration 5-20R, and UL 498 Supplement SD.





1. Products or approved equal: Subject to compliance with requirements, provide one of the following:
  - a. Hubbell; HBL8310 (single), HBL8300 (duplex).
  - b. Leviton; 8310 (single), 8300 (duplex).
  - c. Pass & Seymour; 9301 (single), 9300 (duplex).
  - d. Cooper; 8300 (duplex).
- B. Tamper-Resistant Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 configuration 5-20R, and UL 498.
  1. Products or approved equal: Subject to compliance with requirements, provide one of the following:
    - a. Hubbell; HBL8300SG.
    - b. Leviton; 8300-SGG.
    - c. Pass & Seymour; 63H.
    - d. Cooper; TR8300.

## 2.3 GFCI RECEPTACLES

- A. General Description:
  1. Straight blade, non-feed-through type.
  2. Comply with NEMA WD 1, NEMA WD 6, UL 498, UL 943 Class A, and FS W-C-596.
  3. Include indicator light that shows when the GFCI has malfunctioned and no longer provides proper GFCI protection.
- B. Products or approved equal: Duplex GFCI Convenience Receptacles, 125 V, 20 A:
  1. Cooper; VGF20
  2. Hubbell; GFR5352L.
  3. Pass & Seymour; 2095.
  4. Leviton; 7590.

## 2.4 HAZARDOUS (CLASSIFIED) LOCATION RECEPTACLES

- A. Wiring Devices for Hazardous (Classified) Locations: Comply with NEMA FB 11 and UL 1010.
  1. Manufacturers or approved equal: Subject to compliance with requirements, provide products by one of the following:
    - a. Cooper Crouse-Hinds.
    - b. EGS/Appleton Electric.
    - c. Killark; a division of Hubbell Inc.



## 2.5 TWIST-LOCKING RECEPTACLES

- A. Single Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 configuration L5-20R, and UL 498.
1. Products or approved equal: Subject to compliance with requirements, provide one of the following:
    - a. Hubbell; HBL2310.
    - b. Leviton; 2310.
    - c. Pass & Seymour; L520-R.
    - d. Cooper; L520R.
- B. Isolated-Ground, Single Convenience Receptacles, 125 V, 20 A:
1. Products or approved equal: Subject to compliance with requirements, provide one of the following:
    - a. Hubbell; IG2310.
    - b. Leviton; 2310-IG.
  2. Description: Comply with NEMA WD 1, NEMA WD 6 configuration L5-20R, and UL 498. Equipment grounding contacts shall be connected only to the green grounding screw terminal of the device and with inherent electrical isolation from mounting strap. Isolation shall be integral to receptacle construction and not dependent on removable parts.

## 2.6 PENDANT CORD-CONNECTOR DEVICES

- A. Description: Matching, locking-type plug and receptacle body connector; NEMA WD 6 configurations L5-20P and L5-20R, heavy-duty grade.
1. Body: Nylon with screw-open cable-gripping jaws and provision for attaching external cable grip.
  2. External Cable Grip: Woven wire-mesh type made of high-strength galvanized-steel wire strand, matched to cable diameter, and with attachment provision designed for corresponding connector.

## 2.7 CORD AND PLUG SETS

- A. Description: Match voltage and current ratings and number of conductors to requirements of equipment being connected.
1. Cord: Rubber-insulated, stranded-copper conductors, with Type SOW-A jacket; with green-insulated grounding conductor and equipment-rating ampacity plus a minimum of 30 percent.



2. Plug: Nylon body and integral cable-clamping jaws. Match cord and receptacle type for connection.

## 2.8 TOGGLE SWITCHES

- A. Comply with NEMA WD 1, UL 20, and FS W-S-896.
- B. Switches, 120/277 V, 20 A:
  1. Products or approved equal: Subject to compliance with requirements, provide one of the following:
    - a. Hubbell; CS1221 (single pole), CS1222 (two pole), CS1223 (three way), CS1224 (four way).
    - b. Leviton; 1221-2 (single pole), 1222-2 (two pole), 1223-2 (three way), 1224-2 (four way).
    - c. Pass & Seymour; 20AC1 (single pole), 20AC2 (two pole), 20AC3 (three way), 20AC4 (four way).
    - d. Cooper; 2221 (single pole), 2222 (two pole), 2223 (three way), 2224 (four way).
- C. Pilot-Light Switches, 20 A:
  1. Products or approved equal: Subject to compliance with requirements, provide one of the following:
    - a. Hubbell; HPL1221PL for 120 V and 277 V.
    - b. Leviton; 1221-PLR for 120 V, 1221-7PLR for 277 V.
    - c. Pass & Seymour; PS20AC1-PLR for 120 V.
    - d. Cooper; 2221PL for 120 V and 277 V.
  2. Description: Single pole, with neon-lighted handle, illuminated when switch is "off."
- D. Key-Operated Switches, 120/277 V, 20 A:
  1. Products or approved equal: Subject to compliance with requirements, provide one of the following:
    - a. Hubbell; HBL1221L.
    - b. Leviton; 1221-2L.
    - c. Pass & Seymour; PS20AC1-L.
    - d. Cooper 2221L.
  2. Description: Single pole, with factory-supplied key in lieu of switch handle.



- E. Single-Pole, Double-Throw, Momentary-Contact, Center-off Switches: 120/277 V, 20 A; for use with mechanically held lighting contactors.
1. Products or approved equal: Subject to compliance with requirements, provide one of the following:
    - a. Cooper; 1995.
    - b. Hubbell; HBL1557.
    - c. Leviton; 1257.
    - d. Pass & Seymour; 1251.
- F. Key-Operated, Single-Pole, Double-Throw, Momentary-Contact, Center-off Switches: 120/277 V, 20 A; for use with mechanically held lighting contactors, with factory-supplied key in lieu of switch handle.
1. Products or approved equal: Subject to compliance with requirements, provide one of the following:
    - a. Cooper; 1995L.
    - b. Hubbell; HBL1557L.
    - c. Leviton; 1257L.
    - d. Pass & Seymour; 1251L.

## 2.9 DECORATOR-STYLE DEVICES

- A. Convenience Receptacles: Square face, 125 V, 15 A; comply with NEMA WD 1, NEMA WD 6 Configuration 5-15R, and UL 498.
1. Products or approved equal: Subject to compliance with requirements, provide one of the following:
    - a. Cooper; 6252.
    - b. Hubbell; DR15.
    - c. Leviton; 16252.
    - d. Pass & Seymour; 26252.
- B. Tamper-Resistant Convenience Receptacles: Square face, 125 V, 15 A; comply with NEMA WD 1, NEMA WD 6 Configuration 5-15R, and UL 498.
1. Products or approved equal: Subject to compliance with requirements, provide one of the following:
    - a. Cooper; TR6252.
    - b. Hubbell; DR15TR.
    - c. Pass & Seymour; TR26252.
  2. Description: Labeled to comply with NFPA 70, "Receptacles, Cord Connectors, and Attachment Plugs (Caps)".



- a. Tamper-Resistant and Weather-Resistant Convenience Receptacles: Square face, 125 V, 15 A; comply with NEMA WD 1, NEMA WD 6 Configuration 5-15R, and UL 498.
3. Products or approved equal: Subject to compliance with requirements, provide one of the following:
  - a. Cooper; TWRBR15.
  - b. Hubbell; DR15TR.
  - c. LevitonTRW15.
  - d. Pass & Seymour; TRW26252.
4. Description: Labeled to comply with NFPA 70, "Receptacles, Cord Connectors, and Attachment Plugs (Caps)" when installed in wet and damp locations.
- C. GFCI, Non-Feed-Through Type, Convenience Receptacles: Square face, 125 V, 15 A; comply with NEMA WD 1, NEMA WD 6 Configuration 5-15R, UL 498, and UL 943 Class A.
  1. Products or approved equal: Subject to compliance with requirements, provide one of the following:
    - a. Cooper; VGF15.
    - b. Hubbell; GF15LA.
    - c. Leviton; 8599.
    - d. Pass & Seymour; 1594.
- D. GFCI, Tamper-Resistant and Weather-Resistant Convenience Receptacles: Square face, 125 V, 15 A; comply with NEMA WD 1, NEMA WD 6 Configuration 5-15R, UL 498, and UL 943 Class A.
  1. Products or approved equal: Subject to compliance with requirements, provide one of the following:
    - a. Cooper; TWRVGF15.
    - b. Hubbell; GFTR15.
    - c. Pass & Seymour; 1594TRWR.
  2. Description: Labeled to comply with NFPA 70, "Receptacles, Cord Connectors, and Attachment Plugs (Caps)" Article.
- E. Toggle Switches, Square Face, 120/277 V, 15 A: Comply with NEMA WD 1, UL 20, and FS W-S-896.
  1. Products or approved equal: Subject to compliance with requirements, provide one of the following:
    - a. Cooper; 7621 (single pole), 7623 (three way).
    - b. Hubbell; DS115 (single pole), DS315 (three way).



- c. Leviton; 5621-2 (single pole), 5623-2 (three way).
- d. Pass & Seymour; 2621 (single pole), 2623 (three way).

F. Lighted Toggle Switches, Square Face, 120 V, 15 A: Comply with NEMA WD 1 and UL 20.

- 1. Products or approved equal: Subject to compliance with requirements, provide one of the following:
  - a. Cooper; 7631 (single pole), 7633 (three way).
  - b. Hubbell; DS120IL (single pole), DS320 (three way).
  - c. Leviton; 5631-2 (single pole), 5633-2 (three way).
  - d. Pass & Seymour; 2625 (single pole), 2626 (three way).
- 2. Description: With neon-lighted handle, illuminated when switch is "off."

2.10 WALL-BOX DIMMERS

- A. Dimmer Switches: Modular, full-wave, solid-state units with integral, quiet on-off switches, with audible frequency and EMI/RFI suppression filters.
- B. Control: Continuously adjustable slider; with single-pole or three-way switching. Comply with UL 1472.
- C. Incandescent Lamp Dimmers: 120 V; control shall follow square-law dimming curve. On-off switch positions shall bypass dimmer module.
  - 1. Rating as indicated shall require no derating when ganged with other devices. Illuminated when "off."
- D. Fluorescent Lamp Dimmer Switches: Modular; compatible with dimmer ballasts; trim potentiometer to adjust low-end dimming; dimmer-ballast combination capable of consistent dimming with low end not greater than 20 percent of full brightness.

2.11 WALL PLATES

- A. Single and combination types shall match corresponding wiring devices.
  - 1. Plate-Securing Screws: Metal with head color to match plate finish.
  - 2. Material for Finished Spaces: 0.035-inch- (1-mm-) thick, satin-finished, Type 302 stainless steel.
  - 3. Material for Unfinished Spaces: Galvanized steel.
  - 4. Material for Damp Locations: Cast aluminum with spring-loaded lift cover, and listed and labeled for use in wet and damp locations.



## 2.12 POKE-THROUGH ASSEMBLIES

- A. Manufacturers or approved equal : Subject to compliance with requirements, provide products by one of the following:
1. Hubbell Incorporated; Wiring Device-Kellems.
  2. Pass & Seymour/Legrand.
  3. Square D/Schneider Electric.
  4. Thomas & Betts Corporation.
  5. Wiremold/Legrand.
- B. Description:
1. Factory-fabricated and -wired assembly of below-floor junction box with multichanneled, through-floor raceway/firestop unit and detachable matching floor service-outlet assembly.
  2. Service-Outlet Assembly: Flush type with two simplex receptacles and space for two RJ-45 jacks.
  3. Size: Selected to fit nominal cored holes in floor and matched to floor thickness.
  4. Fire Rating: Unit is listed and labeled for fire rating of floor-ceiling assembly.
  5. Closure Plug: Arranged to close unused cored openings and reestablish fire rating of floor.
  6. Wiring Raceways and Compartments: For a minimum of four No. 12 AWG conductors and a minimum of two four-pair cables that comply with requirements.

## 2.13 PREFABRICATED MULTIOUTLET ASSEMBLIES

- A. Subject to compliance with requirements, provide products by one of the following:
1. Hubbell Incorporated; Wiring Device-Kellems.
  2. Wiremold/Legrand.
  3. Leviton.
  4. Or approved equal.
- B. Description:
1. Two-piece surface metal raceway, with factory-wired multioutlet harness.
  2. Components shall be products from single manufacturer designed for use as a complete, matching assembly of raceways and receptacles.
- C. Raceway Material: Metal, with manufacturer's standard finish.

## 2.14 FINISHES

- A. Device Color:
1. Wiring Devices Connected to Normal Power System: White.



2. TVSS Devices: Blue.
  3. Isolated-Ground Receptacles: Orange.
- B. Wall Plate Color: Match device color.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.
- B. Coordination with Other Trades:
1. Protect installed devices and their boxes. Do not place wall finish materials over device boxes and do not cut holes for boxes with routers that are guided by riding against outside of boxes.
  2. Keep outlet boxes free of plaster, drywall joint compound, mortar, cement, concrete, dust, paint, and other material that may contaminate the raceway system, conductors, and cables.
  3. Install device boxes in brick or block walls so that the cover plate does not cross a joint unless the joint is troweled flush with the face of the wall.
  4. Install wiring devices after all wall preparation, including painting, is complete.
- C. Conductors:
1. Do not strip insulation from conductors until right before they are spliced or terminated on devices.
  2. Strip insulation evenly around the conductor using tools designed for the purpose. Avoid scoring or nicking of solid wire or cutting strands from stranded wire.
  3. The length of free conductors at outlets for devices shall meet provisions of NFPA 70, Article 300, without pigtails.
  4. Existing Conductors:
    - a. Cut back and pigtail, or replace all damaged conductors.
    - b. Straighten conductors that remain and remove corrosion and foreign matter.
    - c. Pigtailing existing conductors is permitted, provided the outlet box is large enough.
- D. Device Installation:
1. Replace devices that have been in temporary use during construction and that were installed before building finishing operations were complete.
  2. Keep each wiring device in its package or otherwise protected until it is time to connect conductors.
  3. Do not remove surface protection, such as plastic film and smudge covers, until the last possible moment.





4. Connect devices to branch circuits using pigtails that are not less than 6 inches (152 mm) in length.
5. When there is a choice, use side wiring with binding-head screw terminals. Wrap solid conductor tightly clockwise, two-thirds to three-fourths of the way around terminal screw.
6. Use a torque screwdriver when a torque is recommended or required by manufacturer.
7. When conductors larger than No. 12 AWG are installed on 15- or 20-A circuits, splice No. 12 AWG pigtails for device connections.
8. Tighten unused terminal screws on the device.
9. When mounting into metal boxes, remove the fiber or plastic washers used to hold device-mounting screws in yokes, allowing metal-to-metal contact.

**E. Receptacle Orientation:**

1. Install ground pin of vertically mounted receptacles up, and on horizontally mounted receptacles to the left.
2. Install receptacles in patient-care areas with the ground pin or neutral blade at the top.

**F. Device Plates:** Do not use oversized or extra-deep plates. Repair wall finishes and remount outlet boxes when standard device plates do not fit flush or do not cover rough wall opening.

**G. Dimmers:**

1. Install dimmers within terms of their listing.
2. Verify that dimmers used for fan speed control are listed for that application.
3. Install unshared neutral conductors on line and load side of dimmers according to manufacturers' device listing conditions in the written instructions.

**H. Arrangement of Devices:** Unless otherwise indicated, mount flush, with long dimension vertical and with grounding terminal of receptacles on top. Group adjacent switches under single, multigang wall plates.

**I. Adjust locations of floor service outlets and service poles to suit arrangement of partitions and furnishings.**

**3.2 GFCI RECEPTACLES**

- A. Install non-feed-through-type GFCI receptacles where protection of downstream receptacles is not required.

**3.3 IDENTIFICATION**

- A. Comply with Section 260553 "Identification for Electrical Systems."



- B. Identify each receptacle with panelboard identification and circuit number. Use hot, stamped, or engraved machine printing with white-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

### 3.4 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
  - 1. Prepare reports that comply with NFPA recommendations.
  - 2. Test Instruments: Use instruments that comply with UL 1436.
  - 3. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated digital-display indicators of measurement.
- B. Tests for Convenience Receptacles:
  - 1. Line Voltage: Acceptable range is 105 to 132 V.
  - 2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is unacceptable.
  - 3. Ground Impedance: Values of up to 2 ohms are acceptable.
  - 4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
  - 5. Using the test plug, verify that the device and its outlet box are securely mounted.
  - 6. Tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.
- C. Wiring device will be considered defective if it does not pass tests and inspections.
- D. Prepare test and inspection reports.

END OF SECTION 262726



## SECTION 262813 - FUSES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

A. Section Includes:

1. Cartridge fuses rated 600-V ac and less for use in switchboards.

#### 1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include construction details, material, dimensions, descriptions of individual components, and finishes for spare-fuse cabinets. Include the following for each fuse type indicated:

1. Ambient Temperature Adjustment Information: If ratings of fuses have been adjusted to accommodate ambient temperatures, provide list of fuses with adjusted ratings.
  - a. For each fuse having adjusted ratings, include location of fuse, original fuse rating, local ambient temperature, and adjusted fuse rating.
  - b. Provide manufacturer's technical data on which ambient temperature adjustment calculations are based.
2. Dimensions and manufacturer's technical data on features, performance, electrical characteristics, and ratings.
3. Current-limitation curves for fuses with current-limiting characteristics.
4. Time-current coordination curves (average melt) and current-limitation curves (instantaneous peak let-through current) for each type and rating of fuse.
5. Coordination charts and tables and related data.
6. Fuse sizes for elevator feeders and elevator disconnect switches.



#### 1.4 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For fuses to include in emergency, operation, and maintenance manuals. Include the following:
  - 1. Ambient temperature adjustment information.
  - 2. Current-limitation curves for fuses with current-limiting characteristics.
  - 3. Time-current coordination curves (average melt) and current-limitation curves (instantaneous peak let-through current) for each type and rating of fuse.
  - 4. Coordination charts and tables and related data.

#### 1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than two of each size and type.

#### 1.6 QUALITY ASSURANCE

- A. Source Limitations: Obtain fuses, for use within a specific product or circuit, from single source from single manufacturer.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- C. Comply with NEMA FU 1 for cartridge fuses.
- D. Comply with NFPA 70.
- E. Comply with UL 248-11 for plug fuses.

#### 1.7 PROJECT CONDITIONS

- A. Where ambient temperature to which fuses are directly exposed is less than 40 deg F (5 deg C) or more than 100 deg F (38 deg C), apply manufacturer's ambient temperature adjustment factors to fuse ratings.

#### 1.8 COORDINATION

- A. Coordinate fuse ratings with utilization equipment nameplate limitations of maximum fuse size and with system short-circuit current levels.



## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide products by one of the following:

1. Cooper Bussmann, Inc.
2. Cutler Hammer
3. Legrand
4. Or approved equal.

### 2.2 CARTRIDGE FUSES

A. Characteristics: NEMA FU 1, nonrenewable cartridge fuses with voltage ratings consistent with circuit voltages.

### 2.3 PLUG FUSES

A. Characteristics: UL 248-11, nonrenewable plug fuses; 125-V ac.

### 2.4 PLUG-FUSE ADAPTERS

A. Characteristics: Adapters for using Type S, rejection-base plug fuses in Edison-base fuseholders or sockets; ampere ratings matching fuse ratings; irremovable once installed.

### 2.5 SPARE-FUSE CABINET

A. Characteristics: Wall-mounted steel unit with full-length, recessed piano-hinged door and key-coded cam lock and pull.

1. Size: Adequate for storage of spare fuses specified with 15 percent spare capacity minimum.
2. Finish: Gray, baked enamel.
3. Identification: "SPARE FUSES" in 1-1/2-inch- (38-mm-) high letters on exterior of door.
4. Fuse Pullers: For each size of fuse, where applicable and available, from fuse manufacturer.



## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine fuses before installation. Reject fuses that are moisture damaged or physically damaged.
- B. Examine holders to receive fuses for compliance with installation tolerances and other conditions affecting performance, such as rejection features.
- C. Examine utilization equipment nameplates and installation instructions. Install fuses of sizes and with characteristics appropriate for each piece of equipment.
- D. Evaluate ambient temperatures to determine if fuse rating adjustment factors must be applied to fuse ratings.
- E. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 FUSE APPLICATIONS

- A. Cartridge Fuses:
  - 1. Feeders: Class RK1, time delay.

### 3.3 INSTALLATION

- A. Install fuses in fusible devices. Arrange fuses so rating information is readable without removing fuse.
- B. Install plug-fuse adapters in Edison-base fuseholders and sockets. Ensure that adapters are irremovable once installed.
- C. Install spare-fuse cabinet(s).

### 3.4 IDENTIFICATION

- A. Install labels complying with requirements for identification specified in Section 260553 "Identification for Electrical Systems" and indicating fuse replacement information on inside door of each fused switch and adjacent to each fuse block, socket, and holder.

END OF SECTION 262813



## SECTION 262816 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

A. The following documents apply to all required work for the Project:

1. Contract Drawings
2. Specifications
3. General Conditions
4. Addendum
5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

A. Section Includes:

1. Fusible switches.
2. Nonfusible switches.
3. Receptacle switches.
4. Shunt trip switches.
5. Molded-case circuit breakers (MCCBs).
6. Molded-case switches.
7. Enclosures.

#### 1.3 DEFINITIONS

- A. NC: Normally closed.
- B. NO: Normally open.
- C. SPDT: Single pole, double throw.

#### 1.4 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Enclosed switches and circuit breakers shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.
1. The term "withstand" means "the unit will remain in place without separation of any parts from the device when subjected to the seismic forces specified and the unit will be fully operational after the seismic event."



## 1.5 SUBMITTALS

- A. Product Data: For each type of enclosed switch, circuit breaker, accessory, and component indicated. Include dimensioned elevations, sections, weights, and manufacturers' technical data on features, performance, electrical characteristics, ratings, accessories, and finishes.
  - 1. Enclosure types and details for types other than NEMA 250, Type 1.
  - 2. Current and voltage ratings.
  - 3. Short-circuit current ratings (interrupting and withstand, as appropriate).
  - 4. Include evidence of NRTL listing for series rating of installed devices.
  - 5. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices, accessories, and auxiliary components.
  - 6. Include time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device.
- B. Shop Drawings: For enclosed switches and circuit breakers. Include plans, elevations, sections, details, and attachments to other work.
  - 1. Wiring Diagrams: For power, signal, and control wiring.

## 1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified testing agency.
- B. Seismic Qualification Certificates: For enclosed switches and circuit breakers, accessories, and components, from manufacturer.
  - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
  - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
  - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- C. Field quality-control reports.
  - 1. Test procedures used.
  - 2. Test results that comply with requirements.
  - 3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.
- D. Manufacturer's field service report.





**1.7 CLOSEOUT SUBMITTALS**

- A. Operation and Maintenance Data: For enclosed switches and circuit breakers to include in emergency, operation, and maintenance manuals. In addition to items specified in DDC General Conditions, include the following:
  - 1. Manufacturer's written instructions for testing and adjusting enclosed switches and circuit breakers.
  - 2. Time-current coordination curves (average melt) for each type and rating of overcurrent protective device; include selectable ranges for each type of overcurrent protective device. Submit on translucent log-log graph paper.

**1.8 MAINTENANCE MATERIAL SUBMITTALS**

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
  - 1. Fuses: Equal to 10 percent of quantity installed for each size and type, but no fewer than three of each size and type.
  - 2. Fuse Pullers: Two for each size and type.

**1.9 QUALITY ASSURANCE**

- A. Testing Agency Qualifications: Member company of NETA or an NRTL.
  - 1. Testing Agency's Field Supervisor: Currently certified by NETA to supervise on-site testing.
- B. Source Limitations: Obtain enclosed switches and circuit breakers, overcurrent protective devices, components, and accessories, within same product category, from single source from single manufacturer.
- C. Product Selection for Restricted Space: Drawings indicate maximum dimensions for enclosed switches and circuit breakers, including clearances between enclosures, and adjacent surfaces and other items. Comply with indicated maximum dimensions.
- D. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- E. Comply with NFPA 70.

**1.10 PROJECT CONDITIONS**

- A. Environmental Limitations: Rate equipment for continuous operation under the following conditions unless otherwise indicated:



1. Ambient Temperature: Not less than minus 22 deg F (minus 30 deg C) and not exceeding 104 deg F (40 deg C).
  2. Altitude: Not exceeding 6600 feet (2010 m).
- B. Interruption of Existing Electric Service: Do not interrupt electric service to facilities occupied by City of New York or others unless permitted under the following conditions and then only after arranging to provide temporary electric service according to requirements indicated:
1. Notify Commissioner and City of New York no fewer than seven days in advance of proposed interruption of electric service.
  2. Indicate method of providing temporary electric service.
  3. Do not proceed with interruption of electric service without Commissioner and City of New York written permission.
  4. Comply with NFPA 70E.

#### 1.11 COORDINATION

- A. Coordinate layout and installation of switches, circuit breakers, and components with equipment served and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

### PART 2 - PRODUCTS

#### 2.1 FUSIBLE SWITCHES

- A. Manufacturers or approved equal: Subject to compliance with requirements, provide products by one of the following:
1. All City Switchboard.
  2. Atlas Switchboard.
  3. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
  4. Electrotech.
  5. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
  6. Lincoln Electric.
  7. Siemens Energy & Automation, Inc.
  8. Square D; a brand of Schneider Electric.
- B. Type GD, General Duty, Single Throw, 240-V ac, 800 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, with cartridge fuse interiors to accommodate indicated fuses, lockable handle with capability to accept two padlocks, and interlocked with cover in closed position.
- C. Accessories:
1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.



2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
3. Isolated Ground Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
4. Class R Fuse Kit: Provides rejection of other fuse types when Class R fuses are specified.
5. Auxiliary Contact Kit: Two NO/NC (Form "C") auxiliary contact(s), arranged to activate before switch blades open.
6. Hookstick Handle: Allows use of a hookstick to operate the handle.
7. Lugs: Mechanical type, suitable for number, size, and conductor material.
8. Service-Rated Switches: Labeled for use as service equipment.
9. Accessory Control Power Voltage: Remote mounted and powered; 120-V ac.

## 2.2 NONFUSIBLE SWITCHES

- A. Manufacturers or approved equal: Subject to compliance with requirements, provide products by one of the following:
  1. All City Switchboard.
  2. Atlas Switchboard.
  3. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
  4. Electrotech.
  5. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
  6. Lincoln Electric.
  7. Siemens Energy & Automation, Inc.
  8. Square D; a brand of Schneider Electric.
- B. Type HD, Heavy Duty, Single Throw, 600-V ac, 800 A and Smaller: UL 98 and NEMA KS 1, horsepower rated, lockable handle with capability to accept three padlocks, and interlocked with cover in closed position.
- C. Accessories:
  1. Equipment Ground Kit: Internally mounted and labeled for copper and aluminum ground conductors.
  2. Neutral Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
  3. Isolated Ground Kit: Internally mounted; insulated, capable of being grounded and bonded; labeled for copper and aluminum neutral conductors.
  4. Auxiliary Contact Kit: Two NO/NC (Form "C") auxiliary contact(s), arranged to activate before switch blades open.
  5. Hookstick Handle: Allows use of a hookstick to operate the handle.
  6. Lugs: Mechanical type, suitable for number, size, and conductor material.
  7. Accessory Control Power Voltage: Remote mounted and powered; 120-V ac.



## 2.3 RECEPTACLE SWITCHES

- A. Manufacturers or approved equal: Subject to compliance with requirements, provide products by one of the following:
  - 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
  - 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
  - 3. Siemens Energy & Automation, Inc.
  - 4. Square D; a brand of Schneider Electric.
- B. Type HD, Heavy-Duty, Single-Throw Fusible Switch: 600-V ac, 30, 60 and 100 A; UL 98 and NEMA KS 1; horsepower rated, with clips or bolt pads to accommodate specified fuses; lockable handle with capability to accept three padlocks; interlocked with cover in closed position.
- C. Type HD, Heavy-Duty, Single-Throw Nonfusible Switch: 600-V ac, 30, 60 and 100 A; UL 98 and NEMA KS 1; horsepower rated, lockable handle with capability to accept three padlocks; interlocked with cover in closed position.
- D. Interlocking Linkage: Provided between the receptacle and switch mechanism to prevent inserting or removing plug while switch is in the on position, inserting any plug other than specified, and turning switch on if an incorrect plug is inserted or correct plug has not been fully inserted into the receptacle.
- E. Receptacle: Polarized, three-phase, four-wire receptacle (fourth wire connected to enclosure ground lug).
  - 1. Receptacle Manufacturer and Catalog Number: See plans.

## 2.4 SHUNT TRIP SWITCHES

- A. Manufacturers or approved equal: Subject to compliance with requirements, provide products by one of the following:
  - 1. Cooper Bussmann, Inc.
  - 2. Ferraz Shawmut, Inc.
  - 3. Littelfuse, Inc.
- B. General Requirements: Comply with ASME A17.1, UL 50, and UL 98, with 200-kA interrupting and short-circuit current rating when fitted with Class J fuses.
- C. Switches: Three-pole, horsepower rated, with integral shunt trip mechanism and Class J fuse block; lockable handle with capability to accept three padlocks; interlocked with cover in closed position.
- D. Control Circuit: 120-V ac; obtained from integral control power transformer, with primary and secondary fuses, with a control power transformer of enough capacity to operate shunt trip, connected pilot, and indicating and control devices.



E. Accessories:

1. Oiltight key switch for key-to-test function.
2. Oiltight green ON pilot light.
3. Isolated neutral lug; 100 percent rating.
4. Mechanically interlocked auxiliary contacts that change state when switch is opened and closed.
5. Form C alarm contacts that change state when switch is tripped.
6. Three-pole, double-throw, fire-safety and alarm relay; 120-V ac coil voltage.
7. Three-pole, double-throw, fire-alarm voltage monitoring relay complying with NFPA 72.

2.5 MOLDED-CASE CIRCUIT BREAKERS

- A. Manufacturers or approved equal: Subject to compliance with requirements, provide products by one of the following:
1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
  2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
  3. Siemens Energy & Automation, Inc.
  4. Square D; a brand of Schneider Electric.
- B. General Requirements: Comply with UL 489, NEMA AB 1, and NEMA AB 3, with interrupting capacity to comply with available fault currents.
- C. Thermal-Magnetic Circuit Breakers: Inverse time-current element for low-level overloads and instantaneous magnetic trip element for short circuits. Adjustable magnetic trip setting for circuit-breaker frame sizes 250 A and larger.
- D. Adjustable, Instantaneous-Trip Circuit Breakers: Magnetic trip element with front-mounted, field-adjustable trip setting.
- E. Electronic Trip Circuit Breakers: Field-replaceable rating plug, rms sensing, with the following field-adjustable settings:
1. Instantaneous trip.
  2. Long- and short-time pickup levels.
  3. Long- and short-time time adjustments.
  4. Ground-fault pickup level, time delay, and  $I^2t$  response.
- F. Current-Limiting Circuit Breakers: Frame sizes 400 A and smaller, and let-through ratings less than NEMA FU 1, RK-5.
- G. Integrally Fused Circuit Breakers: Thermal-magnetic trip element with integral limiter-style fuse listed for use with circuit breaker and trip activation on fuse opening or on opening of fuse compartment door.
- H. Ground-Fault, Circuit-Interrupter (GFCI) Circuit Breakers: Single- and two-pole configurations with Class A ground-fault protection (6-mA trip).



- I. Ground-Fault, Equipment-Protection (GFEP) Circuit Breakers: With Class B ground-fault protection (30-mA trip).
- J. Features and Accessories:
  - 1. Standard frame sizes, trip ratings, and number of poles.
  - 2. Lugs: Mechanical type, suitable for number, size, trip ratings, and conductor material.
  - 3. Application Listing: Appropriate for application; Type SWD for switching fluorescent lighting loads; Type HID for feeding fluorescent and high-intensity discharge lighting circuits.
  - 4. Ground-Fault Protection: Comply with UL 1053; integrally mounted, self-powered type with mechanical ground-fault indicator; relay with adjustable pickup and time-delay settings, push-to-test feature, internal memory, and shunt trip unit; and three-phase, zero-sequence current transformer/sensor.
  - 5. Communication Capability: Integral communication module with functions and features compatible with power monitoring and control system. Shunt Trip: Trip coil energized from separate circuit, with coil-clearing contact.
  - 6. Undervoltage Trip: Set to operate at 35 to 75 percent of rated voltage without intentional time delay.
  - 7. Auxiliary Contacts: One SPDT switch with "a" and "b" contacts; "a" contacts mimic circuit-breaker contacts, "b" contacts operate in reverse of circuit-breaker contacts.
  - 8. Alarm Switch: One NO contact that operates only when circuit breaker has tripped.
  - 9. Key Interlock Kit: Externally mounted to prohibit circuit-breaker operation; key shall be removable only when circuit breaker is in off position.
  - 10. Zone-Selective Interlocking: Integral with [electronic] [ground-fault] trip unit; for interlocking ground-fault protection function.
  - 11. Electrical Operator: Provide remote control for on, off, and reset operations.
  - 12. Accessory Control Power Voltage: Integrally mounted, self-powered.

## 2.6 MOLDED-CASE SWITCHES

- A. Manufacturers or approved equal: Subject to compliance with requirements, provide products by one of the following:
  - 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
  - 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
  - 3. Siemens Energy & Automation, Inc.
  - 4. Square D; a brand of Schneider Electric.
- B. General Requirements: MCCB with fixed, high-set instantaneous trip only, and short-circuit withstand rating equal to equivalent breaker frame size interrupting rating.
- C. Features and Accessories:
  - 1. Standard frame sizes and number of poles.
  - 2. Lugs: Mechanical type, suitable for number, size, trip ratings, and conductor material.
  - 3. Ground-Fault Protection: Comply with UL 1053; remote-mounted and powered type with mechanical ground-fault indicator; relay with adjustable pickup and time-delay



settings, push-to-test feature, internal memory, and shunt trip unit; and three-phase, zero-sequence current transformer/sensor.

4. Shunt Trip: Trip coil energized from separate circuit, with coil-clearing contact.
5. Undervoltage Trip: Set to operate at 35 to 75 percent of rated voltage without intentional time delay.
6. Auxiliary Contacts: Two SPDT switches with "a" and "b" contacts; "a" contacts mimic switch contacts, "b" contacts operate in reverse of switch contacts.
7. Alarm Switch: One NO or NC contact that operates only when switch has tripped.
8. Key Interlock Kit: Externally mounted to prohibit switch operation; key shall be removable only when switch is in off position.
9. Zone-Selective Interlocking: Integral with ground-fault shunt trip unit; for interlocking ground-fault protection function.
10. Electrical Operator: Provide remote control for on, off, and reset operations.
11. Accessory Control Power Voltage: Integrally mounted, self-powered.

## 2.7 ENCLOSURES

- A. Enclosed Switches and Circuit Breakers: NEMA AB 1, NEMA KS 1, NEMA 250, and UL 50, to comply with environmental conditions at installed location.
  1. Indoor, Dry and Clean Locations: NEMA 250, Type 1.
  2. Outdoor Locations: NEMA 250, Type 3R.
  3. Other Wet or Damp, Indoor Locations: NEMA 250, Type 4.
  4. Indoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: NEMA 250, Type 12.
  5. Hazardous Areas Indicated on Drawings: NEMA 250, Type 7.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine elements and surfaces to receive enclosed switches and circuit breakers for compliance with installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Install individual wall-mounted switches and circuit breakers with tops at uniform height unless otherwise indicated.
- B. Temporary Lifting Provisions: Remove temporary lifting eyes, channels, and brackets and temporary blocking of moving parts from enclosures and components.
- C. Install fuses in fusible devices.



- D. Comply with NECA 1.

### 3.3 IDENTIFICATION

- A. Comply with requirements in Section 260553 "Identification for Electrical Systems."
  - 1. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs.
  - 2. Label each enclosure with engraved metal or laminated-plastic nameplate.

### 3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
- C. Acceptance Testing Preparation:
  - 1. Test insulation resistance for each enclosed switch and circuit breaker, component, connecting supply, feeder, and control circuit.
  - 2. Test continuity of each circuit.
- D. Tests and Inspections:
  - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
  - 2. Correct malfunctioning units on-site, where possible, and retest to demonstrate compliance; otherwise, replace with new units and retest.
  - 3. Perform the following infrared scan tests and inspections and prepare reports:
    - a. Initial Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each enclosed switch and circuit breaker. Remove front panels so joints and connections are accessible to portable scanner.
    - b. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each enclosed switch and circuit breaker 11 months after date of Substantial Completion.
    - c. Instruments and Equipment: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
  - 4. Test and adjust controls, remote monitoring, and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Enclosed switches and circuit breakers will be considered defective if they do not pass tests and inspections.





- F. Prepare test and inspection reports, including a certified report that identifies enclosed switches and circuit breakers and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

3.5 ADJUSTING

- A. Adjust moving parts and operable components to function smoothly, and lubricate as recommended by manufacturer.

END OF SECTION 262816



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## SECTION 263213 - ENGINE GENERATORS

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project:
1. Contract Drawings
  2. Specifications
  3. General Conditions
  4. Addendum
  5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

- A. Section includes packaged engine-generator sets for emergency power supply with the following features:
1. Diesel engine.
  2. Unit-mounted cooling system.
  3. Unit-mounted control and monitoring.
  4. Performance requirements for sensitive loads.
  5. Fuel system.
  6. Outdoor enclosure (where applicable).
  7. Engine exhaust muffler.
- B. Related Requirements:
1. Section 263600 "Transfer Switches" for transfer switches including sensors and relays to initiate automatic-starting and -stopping signals for engine-generator sets.
- C. Operational Bandwidth: The total variation from the lowest to highest value of a parameter over the range of conditions indicated, expressed as a percentage of the nominal value of the parameter.
- D. LP: Liquid petroleum.
- E. EPS: Emergency power supply.
- F. EPSS: Emergency power supply system.



### 1.3 ACTION SUBMITTALS

#### A. Product Data: For each type of product.

1. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
2. Include thermal damage curve for generator.
3. Include time-current characteristic curves for generator protective device.
4. Include fuel consumption in gallons per hour at 0.8 power factor at 0.5, 0.75 and 1.0 times generator capacity.
5. Include generator efficiency at 0.8 power factor at 0.5, 0.75 and 1.0 times generator capacity.
6. Include air flow requirements for cooling and combustion air in cfm at 0.8 power factor, with air supply temperature of 95, 80, 70, and 50 deg F. Provide drawings showing requirements and limitations for location of air intake and exhausts.
7. Include generator characteristics, including, but not limited to kw rating, efficiency, reactances, and short-circuit current capability.

#### B. Shop Drawings:

1. Include plans and elevations for engine-generator set and other components specified. Indicate access requirements affected by height of subbase fuel tank.
2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Identify fluid drain ports and clearance requirements for proper fluid drain.
4. Design calculations for selecting vibration isolators and seismic restraints and for designing vibration isolation bases.
5. Vibration Isolation Base Details: Detail fabrication including anchorages and attachments to structure and to supported equipment. Include base weights.
6. Include diagrams for power, signal, and control wiring. Complete schematic, wiring, and interconnection diagrams showing terminal markings for EPS equipment and functional relationship between all electrical components.

### 1.4 INFORMATIONAL SUBMITTALS

#### A. Qualification Data: For manufacturer and testing agency.

#### B. Seismic Qualification Certificates: For engine-generator set, accessories, and components, from manufacturer.

1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
2. Dimensioned Outline Drawings of Equipment Unit: With engine and generator mounted on rails identify center of gravity and total weight including full fuel tank and supplied enclosure, external silencer, and skid-mounted load bank, and each piece of equipment not integral to the engine-generator set, and locate and describe mounting and anchorage provisions.



3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- C. Source quality-control reports, including, but not limited to the following:
1. Certified summary of prototype-unit test report.
  2. Certified Test Reports: For components and accessories that are equivalent, but not identical, to those tested on prototype unit.
  3. Certified Summary of Performance Tests: Certify compliance with specified requirement to meet performance criteria for sensitive loads.
  4. Report of factory test on units to be shipped for this Project, showing evidence of compliance with specified requirements.
  5. Report of sound generation.
  6. Report of exhaust emissions showing compliance with applicable regulations.
  7. Certified Torsional Vibration Compatibility: Comply with NFPA 110.
- D. Field quality-control reports.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For packaged engine generators to include in emergency, operation, and maintenance manuals.
1. Include the following:
    - a. List of tools and replacement items recommended to be stored at Project for ready access. Include part and drawing numbers, current unit prices, and source of supply.
    - b. Operating instructions laminated and mounted adjacent to generator location.
    - c. Training plan.

#### 1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Fuses: One for every 10 of each type and rating but no fewer than one of each.
  2. Indicator Lamps: Two for every six of each type used, but no fewer than two of each.
  3. Filters: One set each of lubricating oil, fuel, and combustion-air filters.
  4. Tools: Each tool listed by part number in operations and maintenance manual.

#### 1.7 QUALITY ASSURANCE

- A. Testing Agency Qualifications: Member company of NETA or an NRTL.
1. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.



1.8 WARRANTY

- A. Manufacturer's Warranty: Manufacturer agrees to repair or replace components of packaged engine generators and associated auxiliary components that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following or approved equal:

1. Cummins
2. Caterpillar
3. Kohler
4. MTU Onsite Energy

- B. Source Limitations: Obtain packaged generator sets and auxiliary components through one source from a single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Engine-generator set housing, day tank, engine-generator set, batteries, battery racks, silencers, load banks, and sound attenuating equipment, accessories, and components shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

1. The term "withstand" means "the unit will remain in place without separation of any parts when subjected to the seismic forces specified."
2. Shake-table testing shall comply with ICC-ES AC156. Testing shall be performed with all fluids at worst case normal levels. Water shall be substituted for diesel fuel in fuel tank during test.
3. Component Importance Factor: 1.0.

- B. ASME Compliance: Comply with ASME B15.1.

- C. NFPA Compliance:

1. Comply with NFPA 37.
2. Comply with NFPA 70.
3. Comply with NFPA 99.
4. Comply with NFPA 110 requirements for Level 1 emergency power supply system.

- D. UL Compliance: Comply with UL 2200.



- E. Engine Exhaust Emissions: Comply with EPA Tier 1 requirements and applicable state and local government requirements.
- F. Noise Emission: Comply with applicable state and local government requirements for maximum noise level at locations due to sound emitted by generator set including engine, engine exhaust, engine cooling-air intake and discharge, and other components of installation.
- G. Environmental Conditions: Engine-generator system shall withstand the following environmental conditions without mechanical or electrical damage or degradation of performance capability:
  - 1. Ambient Temperature: 5 to 40 deg C or Minus 15 to plus 40 deg C.
  - 2. Relative Humidity: Zero to 95 percent.
  - 3. Altitude: Sea level to 1000 feet (300 m).

## 2.3 ASSEMBLY DESCRIPTION

- A. Factory-assembled and -tested, water-cooled engine, with brushless generator and accessories.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a testing agency acceptable to NYC Department of Buildings, and marked for intended location and application.
- C. EPSS Class: Engine-generator set shall be classified as a Class 72 in accordance with NFPA 110.
- D. Induction Method: Turbocharged.
- E. Governor: Adjustable isochronous, with speed sensing.
- F. Emissions: Comply with EPA Tier 4 requirements.
- G. Mounting Frame: Structural steel framework to maintain alignment of mounted components without depending on concrete foundation. Provide lifting attachments sized and spaced to prevent deflection of base during lifting and moving.
  - 1. Rigging Diagram: Inscribed on metal plate permanently attached to mounting frame to indicate location and lifting capacity of each lifting attachment and generator-set center of gravity.
- H. Capacities and Characteristics:
  - 1. Power Output Ratings: Nominal ratings as indicated at 0.8 power factor excluding power required for the continued and repeated operation of the unit and auxiliaries.
  - 2. Output Connections: Three-phase, four wire.
  - 3. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component.



**I. Generator-Set Performance:**

1. Steady-State Voltage Operational Bandwidth: 3 percent of rated output voltage from no load to full load.
2. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within three seconds.
3. Steady-State Frequency Operational Bandwidth: 0.5 percent of rated frequency from no load to full load.
4. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed.
5. Transient Frequency Performance: Less than 5 percent variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within five seconds.
6. Output Waveform: At no load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for single harmonics. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50 percent.
7. Sustained Short-Circuit Current: For a three-phase, bolted short circuit at system output terminals, system shall supply a minimum of 250 percent of rated full-load current for not less than 10 seconds and then clear the fault automatically, without damage to generator system components.
8. Start Time: Comply with NFPA 110, Type 10, system requirements.

**2.4 ENGINE**

- A. Fuel: Fuel oil, Grade DF-2.
- B. Rated Engine Speed: 1800 rpm.
- C. Maximum Piston Speed for Four-Cycle Engines: 2250 fpm (11.4 m/s).
- D. Lubrication System: The following items are mounted on engine or skid:
  1. Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and smaller while passing full flow.
  2. Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe.
  3. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.
- E. Jacket Coolant Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment for heater capacity.
- F. Cooling System: Closed loop, liquid cooled, with radiator factory mounted on engine-generator-set mounting frame and integral engine-driven coolant pump.





1. Coolant: Solution of 50 percent ethylene-glycol-based antifreeze and 50 percent water, with anticorrosion additives as recommended by engine manufacturer.
  2. Size of Radiator: Adequate to contain expansion of total system coolant from cold start to 110 percent load condition.
  3. Expansion Tank: Constructed of welded steel plate and rated to withstand maximum closed-loop coolant system pressure for engine used. Equip with gage glass and petcock.
  4. Temperature Control: Self-contained, thermostatic-control valve modulates coolant flow automatically to maintain optimum constant coolant temperature as recommended by engine manufacturer.
  5. Coolant Hose: Flexible assembly with inside surface of nonporous rubber and outer covering of aging-, ultraviolet-, and abrasion-resistant fabric.
    - a. Rating: 50-psig (345-kPa) maximum working pressure with coolant at 180 deg F (82 deg C), and noncollapsible under vacuum.
    - b. End Fittings: Flanges or steel pipe nipples with clamps to suit piping and equipment connections.
- G. Muffler/Silencer: Critical type, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements.
1. Sound levels shall comply with NYC Local Law 113-2005 Noise Control Code.
- H. Muffler/Silencer: Semicritical type, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements. Muffler with inline (same level) inlet and outlet.
1. Sound levels shall comply with NYC Local Law 113-2005 Noise Control Code.
- I. Air-Intake Filter: Heavy-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.
- J. Starting System: 24-V electric, with negative ground.
1. Components: Sized so they are not damaged during a full engine-cranking cycle with ambient temperature at maximum specified in "Performance Requirements" Article.
  2. Cranking Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.
  3. Cranking Cycle: As required by NFPA 110 for system level specified.
  4. Battery: Lead acid, with capacity within ambient temperature range specified in "Performance Requirements" Article to provide specified cranking cycle at least three times without recharging.
  5. Battery Cable: Size as recommended by engine manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.
  6. Battery Compartment: Factory fabricated of metal with acid-resistant finish and thermal insulation. Thermostatically controlled heater shall be arranged to maintain battery above 10 deg C regardless of external ambient temperature within range specified in "Performance Requirements" Article. Include accessories required to support and fasten batteries in place. Provide ventilation to exhaust battery gases.



7. Battery Stand: Factory-fabricated, two-tier metal with acid-resistant finish designed to hold the quantity of battery cells required and to maintain the arrangement to minimize lengths of battery interconnections.
8. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35 A minimum continuous rating.
9. Battery Charger: Current-limiting, automatic-equalizing and float-charging type designed for Nicad batteries. Unit shall comply with UL 1236 and include the following features:
  - a. Operation: Equalizing-charging rate of 10 A shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit shall then be automatically switched to a lower float-charging mode and shall continue to operate in that mode until battery is discharged again.
  - b. Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 40 deg F (minus 40 deg C) to 140 deg F (plus 60 deg C) to prevent overcharging at high temperatures and undercharging at low temperatures.
  - c. Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus 10 percent.
  - d. Ammeter and Voltmeter: Flush mounted in door. Meters shall indicate charging rates.
  - e. Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.
  - f. Enclosure and Mounting: NEMA 250, Type 1, wall-mounted cabinet.

## 2.5 DIESEL FUEL-OIL SYSTEM

- A. Comply with NFPA 30.
- B. Piping: Fuel-oil piping shall be Schedule 40 black steel. Cast iron, aluminum, copper, and galvanizing shall not be used in the fuel-oil system.
- C. Main Fuel Pump: Mounted on engine to provide primary fuel flow under starting and load conditions.
- D. Fuel Filtering: Remove water and contaminants larger than 1 micron.
- E. Relief-Bypass Valve: Automatically regulates pressure in fuel line and returns excess fuel to source.
- F. Coordinate with mechanical drawings for remote fuel day tanks.

## 2.6 CONTROL AND MONITORING

- A. Automatic Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more



separate automatic transfer switches initiate starting and stopping of generator set. When mode-selector switch is switched to the on position, generator set starts. The off position of same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms.

- B. Manual Starting System Sequence of Operation: Switching on-off switch on the generator control panel to the on position starts generator set. The off position of same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms.
- C. Provide minimum run time control set for 30 minutes with override only by operation of a remote emergency-stop switch.
- D. Comply with UL 508A.
- E. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common control and monitoring panel mounted on the generator set. Mounting method shall isolate the control panel from generator-set vibration. Panel shall be powered from the engine-generator set battery.
- F. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common wall-mounted control and monitoring panel. Panel shall be powered from the engine-generator set battery.
- G. Configuration: Operating and safety indications, protective devices, basic system controls, engine gages, instrument transformers, generator disconnect switch or circuit breaker, and other indicated components shall be grouped in a combination control and power panel. Control and monitoring section of panel shall be isolated from power sections by steel barriers. Panel shall be powered from the engine-generator set battery. Panel features shall include the following:
  - 1. Wall-Mounting Cabinet Construction: Rigid, self-supporting steel unit complying with NEMA ICS 6. Power bus shall be copper. Bus, bus supports, control wiring, and temperature rise shall comply with UL 891.
  - 2. Switchboard Construction: Freestanding unit.
  - 3. Switchgear Construction: Freestanding unit.
- H. Indicating Devices : As required by NFPA 110 for Level 1 system, including the following:
  - 1. AC voltmeter.
  - 2. AC ammeter.
  - 3. AC frequency meter.
  - 4. EPS supplying load indicator.
  - 5. Ammeter and voltmeter phase-selector switches.
  - 6. DC voltmeter (alternator battery charging).
  - 7. Engine-coolant temperature gage.
  - 8. Engine lubricating-oil pressure gage.
  - 9. Running-time meter.
  - 10. Current and Potential Transformers: Instrument accuracy class.



- I. Protective Devices and Controls in Local Control Panel: Shutdown devices and common visual alarm indication as required by NFPA 110 for Level 1 system, including the following:
  1. Start-stop switch.
  2. Overcrank shutdown device.
  3. Overspeed shutdown device.
  4. Coolant high-temperature shutdown device.
  5. Coolant low-level shutdown device.
  6. Low lube oil pressure shutdown device.
  7. Air shutdown damper shutdown device when used.
  8. Overcrank alarm.
  9. Overspeed alarm.
  10. Coolant high-temperature alarm.
  11. Coolant low-temperature alarm.
  12. Coolant low-level alarm.
  13. Low lube oil pressure alarm.
  14. Air shutdown damper alarm when used.
  15. Lamp test.
  16. Contacts for local and remote common alarm.
  17. Coolant high-temperature prealarm.
  18. Generator-voltage adjusting rheostat.
  19. Main fuel tank low-level alarm.
    - a. Low fuel level alarm shall be initiated when the level falls below that required for operation for the duration required in "Fuel Tank Capacity" Paragraph in "Diesel Fuel-Oil System" Article.
  20. Run-Off-Auto switch.
  21. Control switch not in automatic position alarm.
  22. Low-starting air pressure alarm.
  23. Low-starting hydraulic pressure alarm.
  24. Low cranking voltage alarm.
  25. Battery-charger malfunction alarm.
  26. Battery low-voltage alarm.
  27. Battery high-voltage alarm.
  28. Generator overcurrent protective device not closed alarm.
- J. Supporting Items: Include sensors, transducers, terminals, relays, and other devices and include wiring required to support specified items. Locate sensors and other supporting items on engine or generator, unless otherwise indicated.
- K. Connection to Datalink: A separate terminal block, factory wired to Form C dry contacts, for each alarm and status indication. Provide connections for datalink transmission of indications to remote data terminals via ModBus or LonWorks.
- L. Common Remote Panel with Common Audible Alarm: Comply with NFPA 110 requirements for Level 1 systems. Include necessary contacts and terminals in control and monitoring panel. Remote panel shall be powered from the engine-generator set battery.



M. Remote Alarm Annunciator: Comply with NFPA 99. An LED labeled with proper alarm conditions shall identify each alarm event, and a common audible signal shall sound for each alarm condition. Silencing switch in face of panel shall silence signal without altering visual indication. Connect so that after an alarm is silenced, clearing of initiating condition will reactivate alarm until silencing switch is reset. Cabinet and faceplate are surface- or flush-mounting type to suit mounting conditions indicated.

1. Overcrank alarm.
2. Coolant low-temperature alarm.
3. High engine temperature prealarm.
4. High engine temperature alarm.
5. Low lube oil pressure alarm.
6. Overspeed alarm.
7. Low fuel main tank alarm.
8. Low coolant level alarm.
9. Low cranking voltage alarm.
10. Contacts for local and remote common alarm.
11. Audible-alarm silencing switch.
12. Air shutdown damper when used.
13. Run-Off-Auto switch.
14. Control switch not in automatic position alarm.
15. Fuel tank derangement alarm.
16. Fuel tank high-level shutdown of fuel supply alarm.
17. Lamp test.
18. Low cranking voltage alarm.
19. Generator overcurrent protective device not closed.
20. Area Smoke Condition
21. Area Heat Condition
22. Fuel Fume Alarm
23. (2) spare connections.

N. Supporting Items: Include sensors, transducers, terminals, relays, and other devices and include wiring required to support specified items. Locate sensors and other supporting items on engine or generator, unless otherwise indicated.

O. Remote Emergency-Stop Switch: Flush; wall mounted, unless otherwise indicated; and labeled. Push button shall be protected from accidental operation.

## 2.7 GENERATOR OVERCURRENT AND FAULT PROTECTION

A. Overcurrent protective devices for the entire EPSS shall be coordinated to optimize selective tripping when a short circuit occurs. Coordination of protective devices shall consider both utility and EPSS as the voltage source.

1. Overcurrent protective devices for the EPSS shall be accessible only to authorized personnel.

B. Generator Circuit Breaker: Molded-case, thermal-magnetic type; 100 percent rated; complying with UL 489.



1. Tripping Characteristic: Designed specifically for generator protection.
  2. Trip Rating: Matched to generator output rating.
  3. Shunt Trip: Connected to trip breaker when generator set is shut down by other protective devices.
  4. Mounting: Adjacent to or integrated with control and monitoring panel.
- C. Generator Circuit Breaker: Molded-case, electronic-trip type; 100 percent rated; complying with UL 489.
1. Tripping Characteristics: Adjustable long-time and short-time delay and instantaneous.
  2. Trip Settings: Selected to coordinate with generator thermal damage curve.
  3. Shunt Trip: Connected to trip breaker when generator set is shut down by other protective devices.
  4. Mounting: Adjacent to or integrated with control and monitoring panel.
- D. Generator Circuit Breaker: Insulated-case, electronic-trip type; 100 percent rated; complying with UL 489.
1. Tripping Characteristics: Adjustable long-time and short-time delay and instantaneous.
  2. Trip Settings: Selected to coordinate with generator thermal damage curve.
  3. Shunt Trip: Connected to trip breaker when generator set is shut down by other protective devices.
  4. Mounting: Adjacent to or integrated with control and monitoring panel.
- E. Generator Disconnect Switch: Molded-case type, 100 percent rated.
1. Trip Rating: Matched to generator output rating.
  2. Shunt Trip: Connected to trip switch when signaled by generator protector or by other protective devices.
- F. Generator Protector: Microprocessor-based unit shall continuously monitor current level in each phase of generator output, integrate generator heating effect over time, and predict when thermal damage of alternator will occur. When signaled by generator protector or other generator-set protective devices, a shunt-trip device in the generator disconnect switch shall open the switch to disconnect the generator from load circuits. Protector performs the following functions:
1. Initiates a generator overload alarm when generator has operated at an overload equivalent to 110 percent of full-rated load for 60 seconds. Indication for this alarm is integrated with other generator-set malfunction alarms. Contacts shall be available for load shed functions.
  2. Under single or three-phase fault conditions, regulates generator to 300 percent of rated full-load current for up to 10 seconds.
  3. As overcurrent heating effect on the generator approaches the thermal damage point of the unit, protector switches the excitation system off, opens the generator disconnect device, and shuts down the generator set.
  4. Senses clearing of a fault by other overcurrent devices and controls recovery of rated voltage to avoid overshoot.



- G. Ground-Fault Indication: Comply with NFPA 70, "Emergency System" signals for ground fault.
  - 1. Indicate ground fault with other generator-set alarm indications.
  - 2. Trip generator protective device on ground fault.

## 2.8 GENERATOR, EXCITER, AND VOLTAGE REGULATOR

- A. Comply with NEMA MG 1.
- B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor.
- C. Electrical Insulation: Class H or Class F.
- D. Stator-Winding Leads: Brought out to terminal box to permit future reconnection for other voltages if required. Provide 12 lead alternator.
- E. Range: Provide limited range of output voltage by adjusting the excitation level.
- F. Construction shall prevent mechanical, electrical, and thermal damage due to vibration, overspeed up to 125 percent of rating, and heat during operation at 110 percent of rated capacity.
- G. Enclosure: Dripproof.
- H. Instrument Transformers: Mounted within generator enclosure.
- I. Voltage Regulator: Solid-state type, separate from exciter, providing performance as specified and as required by NFPA 110.
  - 1. Adjusting Rheostat on Control and Monitoring Panel: Provide plus or minus 5 percent adjustment of output-voltage operating band.
  - 2. Maintain voltage within 15 percent on one step, full load.
  - 3. Provide anti-hunt provision to stabilize voltage.
  - 4. Maintain frequency within 5 percent and stabilize at rated frequency within 2 seconds.
- J. Strip Heater: Thermostatically controlled unit arranged to maintain stator windings above dew point.
- K. Windings: Two-thirds pitch stator winding and fully linked amortisseur winding.
- L. Subtransient Reactance: 12 percent, maximum.

## 2.9 MOTORS

- A. Description: NEMA MG 1, Design B, medium induction random-wound, squirrel cage motor.
- B. Efficiency: Energy efficient, as defined in NEMA MG 1.



- C. Service Factor: 1.15.
- D. Bearings: Regreasable, shielded, antifriction ball bearings suitable for radial and thrust loading.
- E. Motor Sizes: Minimum size as indicated. If not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0.
- F. Temperature Rise: Match insulation rating.
- G. Code Letter Designation:
  - 1. Motors 15 HP and Larger: NEMA starting Code F or Code G.
  - 2. Motors Smaller than 15 HP: Manufacturer's standard starting characteristic.
- H. Enclosure Material: Cast iron for motor frame sizes 324T and larger; rolled steel for motor frame sizes smaller than 324T.
- I. Controllers, Electrical Devices, and Wiring: Electrical devices and connections are specified in electrical Sections.

## 2.10 VIBRATION ISOLATION DEVICES

- A. Elastomeric Isolator Pads: Oil- and water-resistant elastomer or natural rubber, arranged in single or multiple layers, molded with a nonslip pattern and galvanized-steel baseplates of sufficient stiffness for uniform loading over pad area, and factory cut to sizes that match requirements of supported equipment.
  - 1. Material: Natural rubber separated by steel shims.
  - 2. Shore "A" Scale Durometer Rating: 30.
  - 3. Number of Layers: Two.
  - 4. Minimum Deflection: 1 inch (25 mm).
- B. Restrained Spring Isolators: Freestanding, steel, open-spring isolators with seismic restraint.
  - 1. Housing: Steel with resilient vertical-limit stops to prevent spring extension due to wind loads or if weight is removed; factory-drilled baseplate bonded to 1/4-inch- (6-mm-) thick, elastomeric isolator pad attached to baseplate underside; and adjustable equipment mounting and leveling bolt that acts as blocking during installation.
  - 2. Outside Spring Diameter: Not less than 80 percent of compressed height of the spring at rated load.
  - 3. Minimum Additional Travel: 50 percent of required deflection at rated load.
  - 4. Lateral Stiffness: More than 80 percent of rated vertical stiffness.
  - 5. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.
  - 6. Minimum Deflection: 1 inch (25 mm).
- C. Furnish stainless steel braided and corrugated metal flexible piping connectors for fuel piping and engine exhaust pipe suitable to delivered material temperature and pressure.





- D. Comply with requirements in Section 233113 "Metal Ducts" for vibration isolation and flexible connector materials for exhaust shroud and ductwork.
- E. Vibration isolation devices shall not be used to accommodate misalignments or to make bends.

## 2.11 FINISHES

- A. Indoor and Outdoor Enclosures and Components: Manufacturer's standard finish over corrosion-resistant pretreatment and compatible primer.

## 2.12 SOURCE QUALITY CONTROL

- A. Prototype Testing: Factory test engine-generator set using same engine model, constructed of identical or equivalent components and equipped with identical or equivalent accessories.
  - 1. Tests: Comply with NFPA 110, Level 1 Energy Converters and with IEEE 115.
- B. Project-Specific Equipment Tests: Before shipment, factory test engine-generator set and other system components and accessories manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:
  - 1. Test components and accessories furnished with installed unit that are not identical to those on tested prototype to demonstrate compatibility and reliability.
  - 2. Test generator, exciter, and voltage regulator as a unit.
  - 3. Full load run.
  - 4. Maximum power.
  - 5. Voltage regulation.
  - 6. Transient and steady-state governing.
  - 7. Single-step load pickup.
  - 8. Safety shutdown.
  - 9. Provide 14 days' advance notice of tests and opportunity for observation of tests by City of New York's representative.
  - 10. Report factory test results within 10 days of completion of test.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine areas, equipment bases, and conditions, with Installer present, for compliance with requirements for installation and other conditions affecting packaged engine-generator performance.
- B. Examine roughing-in for piping systems and electrical connections. Verify actual locations of connections before packaged engine-generator installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.



### 3.2 PREPARATION

- A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by City of New York or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service according to requirements indicated:
  - 1. Notify Commissioner, and City of New York no fewer than 10 working days in advance of proposed interruption of electrical service.
  - 2. Do not proceed with interruption of electrical service without Commissioner's, and City of New York's written permission.

### 3.3 INSTALLATION

- A. Comply with packaged engine-generator manufacturers' written installation and alignment instructions and with NFPA 110.
- B. Equipment Mounting:
  - 1. Install packaged engine generators on cast-in-place concrete equipment bases. Comply with requirements for equipment bases and foundations.
  - 2. Coordinate size and location of concrete bases for packaged engine generators. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork requirements are specified with concrete.
  - 3. Coordinate size and location of roof curbs, equipment supports, and roof penetrations for remote radiators.
- C. Install packaged engine-generator to provide access, without removing connections or accessories, for periodic maintenance.
- D. Install packaged engine-generator or engine-generator in a walk-in enclosure with restrained spring isolators having a minimum deflection of 1 inch (25 mm) on 4-inch- (100-mm-) high concrete base. Secure enclosure to anchor bolts installed in concrete bases.
- E. Install remote radiator with restrained spring isolators on concrete base on grade.
- F. Install Schedule 40, black steel piping with welded joints and connect to engine muffler. Install thimble at wall. Piping shall be same diameter as muffler outlet.
  - 1. Install flexible connectors and steel piping materials.
  - 2. Insulate muffler/silencer and exhaust system components according to requirements in Section 230711 "Duct and Piping Insulation."
  - 3. Install isolating thimbles where exhaust piping penetrates combustible surfaces with a minimum of 9 inches (225 mm) clearance from combustibles.
- G. Install condensate drain piping to muffler drain outlet full size of drain connection with a shutoff valve, stainless-steel flexible connector, and Schedule 40, black steel pipe with welded joints.



- H. Copper and galvanized steel shall not be used in the fuel-oil piping system.
- I. Electrical Wiring: Install electrical devices furnished by equipment manufacturers but not specified to be factory mounted.

### 3.4 CONNECTIONS

- A. Piping installation requirements are specified in other Sections. Drawings indicate general arrangement of piping and specialties.
- B. Connect fuel, cooling-system, and exhaust-system piping adjacent to packaged engine-generator to allow service and maintenance.
- C. Connect cooling-system water piping to engine-generator set and remote radiator with flexible connectors.
- D. Connect engine exhaust pipe to engine with flexible connector.
- E. Connect fuel piping to engines with a gate valve and union and flexible connector.
  - 1. Diesel storage tanks, tank accessories, piping, valves, and specialties for fuel systems are specified in Section 235300 "Fuel Handling Systems."
- F. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."
- G. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables." Provide a minimum of one 90 degree bend in flexible conduit routed to the generator set from a stationary element.
- H. Balance single-phase loads to obtain a maximum of 10 percent unbalance between any two phases.

### 3.5 IDENTIFICATION

- A. Identify system components according to Section 230553 "Identification for HVAC Piping and Equipment" and Section 260553 "Identification for Electrical Systems."
- B. Install a sign indicating the generator neutral is bonded to the main service neutral at the main service location.

### 3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.



**C. Tests and Inspections:**

1. Perform tests recommended by manufacturer and each visual and mechanical inspection and electrical and mechanical test listed in the first two subparagraphs as specified in NETA Acceptance Testing Specification. Certify compliance with test parameters.
  - a. Visual and Mechanical Inspection
    - 1) Compare equipment nameplate data with drawings and specifications.
    - 2) Inspect physical and mechanical condition.
    - 3) Inspect anchorage, alignment, and grounding.
    - 4) Verify the unit is clean.
  - b. Electrical and Mechanical Tests
    - 1) Perform insulation-resistance tests in accordance with IEEE 43.
      - a) Machines larger than 200 horsepower (150 kilowatts). Test duration shall be 10 minutes. Calculate polarization index.
      - b) Machines 200 horsepower (150 kilowatts) or less. Test duration shall be one minute. Calculate the dielectric-absorption ratio.
    - 2) Test protective relay devices.
    - 3) Verify phase rotation, phasing, and synchronized operation as required by the application.
    - 4) Functionally test engine shutdown for low oil pressure, overtemperature, overspeed, and other protection features as applicable.
    - 5) Conduct performance test in accordance with NFPA 110.
    - 6) Verify correct functioning of the governor and regulator.
2. NFPA 110 Acceptance Tests: Perform tests required by NFPA 110 that are additional to those specified here including, but not limited to, single-step full-load pickup test.
3. Battery Tests: Equalize charging of battery cells according to manufacturer's written instructions. Record individual cell voltages.
  - a. Measure charging voltage and voltages between available battery terminals for full-charging and float-charging conditions. Check electrolyte level and specific gravity under both conditions.
  - b. Test for contact integrity of all connectors. Perform an integrity load test and a capacity load test for the battery.
  - c. Verify acceptance of charge for each element of the battery after discharge.
  - d. Verify that measurements are within manufacturer's specifications.
4. Battery-Charger Tests: Verify specified rates of charge for both equalizing and float-charging conditions.
5. System Integrity Tests: Methodically verify proper installation, connection, and integrity of each element of engine-generator system before and during system operation. Check for air, exhaust, and fluid leaks.
6. Exhaust-System Back-Pressure Test: Use a manometer with a scale exceeding 40-inch wg (120 kPa). Connect to exhaust line close to engine exhaust manifold. Verify that back



- pressure at full-rated load is within manufacturer's written allowable limits for the engine.
7. Exhaust Emissions Test: Comply with applicable government test criteria.
  8. Voltage and Frequency Transient Stability Tests: Use recording oscilloscope to measure voltage and frequency transients for 50 and 100 percent step-load increases and decreases, and verify that performance is as specified.
  9. Harmonic-Content Tests: Measure harmonic content of output voltage at 25 percent and 100 percent of rated linear load. Verify that harmonic content is within specified limits.
  10. Noise Level Tests: Measure A-weighted level of noise emanating from generator-set installation, including engine exhaust and cooling-air intake and discharge, at four locations on the property line, and compare measured levels with required values.
- D. Coordinate tests with tests for transfer switches and run them concurrently.
- E. Test instruments shall have been calibrated within the last 12 months, traceable to NIST Calibration Services, and adequate for making positive observation of test results. Make calibration records available for examination on request.
- F. Leak Test: After installation, charge exhaust, coolant, and fuel systems and test for leaks. Repair leaks and retest until no leaks exist.
- G. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation for generator and associated equipment.
- H. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- I. Remove and replace malfunctioning units and retest and reinspect as specified above.
- J. Retest: Correct deficiencies identified by tests and observations and retest until specified requirements are met.
- K. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation resistances, time delays, and other values and observations. Attach a label or tag to each tested component indicating satisfactory completion of tests.
- L. Infrared Scanning: After Substantial Completion, but not more than 60 days after final acceptance, perform an infrared scan of each power wiring termination and each bus connection while running with maximum load. Remove all access panels so terminations and connections are accessible to portable scanner.
1. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan 11 months after date of Substantial Completion.
  2. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
  3. Record of Infrared Scanning: Prepare a certified report that identifies terminations and connections checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.



3.7 GUARANTEE SERVICE

- A. Initial Guarantee Service: Beginning at Substantial Completion, provide 12 months' full service by skilled employees of manufacturer's designated service organization. Include quarterly exercising to check for proper starting, load transfer, and running under load. Include routine preventive maintenance as recommended by manufacturer and adjusting as required for proper operation. Provide parts and supplies same as those used in the manufacture and installation of original equipment.

3.8 DEMONSTRATION

- A. Engage a factory-authorized service representative to instruct City of New York's maintenance personnel to adjust, operate, and maintain packaged engine generators.

END OF SECTION 263213



## SECTION 263600 - TRANSFER SWITCHES

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. The following documents apply to all required work for the Project:
  - 1. Contract Drawings
  - 2. Specifications
  - 3. General Conditions
  - 4. Addendum
  - 5. Contract (City of New York Standard Construction Contract).

#### 1.2 SUMMARY

- A. Section includes automatic and nonautomatic transfer switches rated 600 V and less, including the following:
  - 1. Bypass/isolation switches.
  - 2. Remote annunciator system.
  - 3. Remote annunciator and control system.

#### 1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
  - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for transfer switches.
  - 2. Include rated capacities, operating characteristics, electrical characteristics, and accessories.
- B. Shop Drawings:
  - 1. Include plans, elevations, sections, details showing minimum clearances, conductor entry provisions, gutter space, and installed features and devices.
  - 2. Include material lists for each switch specified.
  - 3. Single-Line Diagram: Show connections between transfer switch, bypass/isolation switch, power sources, and load; and show interlocking provisions for each combined transfer switch and bypass/isolation switch.
  - 4. Riser Diagram: Show interconnection wiring between transfer switches, bypass/isolation switches, annunciators, and control panels.



#### 1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer-authorized service representative.
- B. Seismic Qualification Certificates: For transfer switches, accessories, and components, from manufacturer.
  - 1. Basis for Certification: Indicate whether withstand certification is based on actual test of assembled components or on calculation.
  - 2. Dimensioned Outline Drawings of Equipment Unit: Identify center of gravity and locate and describe mounting and anchorage provisions.
  - 3. Detailed description of equipment anchorage devices on which the certification is based and their installation requirements.
- C. Field quality-control reports.

#### 1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For each type of product to include in emergency, operation, and maintenance manuals.
  - 1. Include the following:
    - a. Features and operating sequences, both automatic and manual.
    - b. List of all factory settings of relays; provide relay-setting and calibration instructions, including software, where applicable.

#### 1.6 QUALITY ASSURANCE

- A. Testing Agency Qualifications:
  - 1. Member company of NETA.
    - a. Testing Agency's Field Supervisor: Certified by NETA to supervise on-site testing.

#### 1.7 FIELD CONDITIONS

- A. Interruption of Existing Electrical Service: Do not interrupt electrical service to facilities occupied by City of NY or others unless permitted under the following conditions and then only after arranging to provide temporary electrical service:
  - 1. Notify Commissioner no fewer than two weeks in advance of proposed interruption of electrical service.
  - 2. Do not proceed with interruption of electrical service without written permission.





## 1.8 WARRANTY

- A. **Manufacturer's Warranty:** Manufacturer agrees to repair or replace components of transfer switch or transfer switch components that fail in materials or workmanship within specified warranty period.

1. Warranty Period: 18 months from date of Substantial Completion.

## PART 2 - PRODUCTS

### 2.1 PERFORMANCE REQUIREMENTS

- A. **Electrical Components, Devices, and Accessories:** Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NEMA ICS 1.
- C. Comply with NFPA 99.
- D. Comply with NFPA 110.
- E. Comply with UL 1008 unless requirements of these Specifications are stricter.
- F. **Indicated Current Ratings:** Apply as defined in UL 1008 for continuous loading and total system transfer, including tungsten filament lamp loads not exceeding 30 percent of switch ampere rating, unless otherwise indicated.
- G. **Tested Fault-Current Closing and Short-Circuit Ratings:** Adequate for duty imposed by protective devices at installation locations in Project under the fault conditions indicated, based on testing according to UL 1008.
1. Where transfer switch includes internal fault-current protection, rating of switch and trip unit combination shall exceed indicated fault-current value at installation location.
2. Short-time withstand capability for 30 cycles.
- H. **Repetitive Accuracy of Solid-State Controls:** All settings shall be plus or minus 2 percent or better over an operating temperature range of minus 20 to plus 70 deg C.
- I. **Resistance to Damage by Voltage Transients:** Components shall meet or exceed voltage-surge withstand capability requirements when tested according to IEEE C62.62. Components shall meet or exceed voltage-impulse withstand test of NEMA ICS 1.
- J. **Electrical Operation:** Accomplish by a nonfused, momentarily energized solenoid or electric-motor-operated mechanism. Switches for emergency or standby purposes shall be mechanically and electrically interlocked in both directions to prevent simultaneous connection to both power sources unless closed transition.



- K. Neutral Switching: Where four-pole switches are indicated, provide 4-pole transfer switch.
- L. Neutral Terminal: Solid and fully rated unless otherwise indicated.
- M. Battery Charger: For generator starting batteries.
  - 1. Float type, rated 10 A.
  - 2. Ammeter to display charging current.
  - 3. Fused ac inputs and dc outputs.
- N. Annunciation, Control, and Programming Interface Components: Devices at transfer switches for communicating with remote programming devices, annunciators, or annunciator and control panels shall have communication capability matched with remote device.
- O. Factory Wiring: Train and bundle factory wiring and label, consistent with Shop Drawings, by color-code or by numbered or lettered wire and cable with printed markers at terminations. Color-coding and wire and cable markers are specified in Section 260553 "Identification for Electrical Systems."
  - 1. Designated Terminals: Pressure type, suitable for types and sizes of field wiring indicated.
  - 2. Power-Terminal Arrangement and Field-Wiring Space: Suitable for top, side, or bottom entrance of feeder conductors as indicated.
  - 3. Control Wiring: Equipped with lugs suitable for connection to terminal strips.
  - 4. Accessible via front access.
- P. Enclosures: General-purpose NEMA 250, Type 1, complying with NEMA ICS 6 and UL 508, unless otherwise indicated.

## 2.2 CONTACTOR-TYPE AUTOMATIC TRANSFER SWITCHES

- A. Comply with Level 1 equipment according to NFPA 110.
- B. Switch Characteristics: Designed for continuous-duty repetitive transfer of full-rated current between active power sources.
  - 1. Limitation: Switches using molded-case switches or circuit breakers or insulated-case circuit-breaker components are unacceptable.
  - 2. Switch Action: Double throw; mechanically held in both directions.
  - 3. Contacts: Silver composition or silver alloy for load-current switching. Contactor-style automatic transfer-switch units, rated 600 A and higher, shall have separate arcing contacts.
  - 4. Conductor Connectors: Suitable for use with conductor material and sizes.
  - 5. Material: Hard-drawn copper, 98 percent conductivity.
  - 6. Main and Neutral Lugs: Compression type.
  - 7. Ground Lugs and Bus-Configured Terminators: Compression type.
  - 8. Ground bar.
  - 9. Connectors shall be marked for conductor size and type according to UL 1008.



- C. Automatic Open-Transition Transfer Switches: Interlocked to prevent the load from being closed on both sources at the same time.
  - 1. Sources shall be mechanically and electrically interlocked to prevent closing both sources on the load at the same time.
- D. Automatic Delayed-Transition Transfer Switches: Pauses or stops in intermediate position to momentarily disconnect both sources, with transition controlled by programming in the automatic transfer-switch controller. Interlocked to prevent the load from being closed on both sources at the same time.
  - 1. Adjustable Time Delay: For override of normal-source voltage sensing to delay transfer and engine start signals for alternative source. Adjustable from zero to six seconds, and factory set for one second.
  - 2. Sources shall be mechanically and electrically interlocked to prevent closing both sources on the load at the same time.
  - 3. Fully automatic break-before-make operation with center off position.
  - 4. Fully automatic break-before-make operation with transfer when two sources have near zero phase difference.
- E. Automatic Closed-Transition Transfer Switches: Connect both sources to load momentarily. Transition is controlled by programming in the automatic transfer-switch controller.
  - 1. Fully automatic make-before-break operation when transferring between two available power sources.
  - 2. Load transfer without interruption, through momentary interconnection of both power sources not exceeding 100 ms.
  - 3. Initiation of No-Interruption Transfer: Controlled by in-phase monitor and sensors confirming both sources are present and acceptable.
    - a. Initiation occurs without active control of generator.
    - b. Automatic transfer-switch controller takes active control of generator to match frequency, phase angle, and voltage.
    - c. Controls ensure that closed-transition load transfer closure occurs only when the two sources are within plus or minus 5 electrical degrees maximum, and plus or minus 5 percent maximum voltage difference.
  - 4. Failure of power source serving load initiates automatic break-before-make transfer.
- F. Manual Switch Operation: Under load, with door closed and with either or both sources energized. Transfer time is same as for electrical operation. Control circuit automatically disconnects from electrical operator during manual operation.
- G. Manual Switch Operation: Unloaded. Control circuit automatically disconnects from electrical operator during manual operation.



- H. Electric Nonautomatic Switch Operation: Electrically actuated by push buttons designated "Normal Source" and "Alternative Source." Switch shall be capable of transferring load in either direction with either or both sources energized.
- I. Signal-Before-Transfer Contacts: A set of normally open/normally closed dry contacts operates in advance of retransfer to normal source. Interval shall be adjustable from 1 to 30 seconds.
- J. Digital Communication Interface: Matched to capability of remote annunciator or annunciator and control panel.
- K. Automatic Transfer-Switch Controller Features:
  - 1. Controller operates through a period of loss of control power.
  - 2. Undervoltage Sensing for Each Phase of Normal and Alternate Source: Sense low phase-to-ground voltage on each phase. Pickup voltage shall be adjustable from 85 to 100 percent of nominal, and dropout voltage shall be adjustable from 75 to 98 percent of pickup value. Factory set for pickup at 90 percent and dropout at 85 percent.
  - 3. Voltage/Frequency Lockout Relay: Prevent premature transfer to generator. Pickup voltage shall be adjustable from 85 to 100 percent of nominal. Factory set for pickup at 90 percent. Pickup frequency shall be adjustable from 90 to 100 percent of nominal. Factory set for pickup at 95 percent.
  - 4. Time Delay for Retransfer to Normal Source: Adjustable from zero to 30 minutes, and factory set for 10 minutes. Override shall automatically defeat delay on loss of voltage or sustained undervoltage of emergency source, provided normal supply has been restored.
  - 5. Test Switch: Simulate normal-source failure.
  - 6. Switch-Position Pilot Lights: Indicate source to which load is connected.
  - 7. Source-Available Indicating Lights: Supervise sources via transfer-switch normal- and emergency-source sensing circuits.
    - a. Normal Power Supervision: Green light with nameplate engraved "Normal Source Available."
    - b. Emergency Power Supervision: Red light with nameplate engraved "Emergency Source Available."
  - 8. Unassigned Auxiliary Contacts: Two normally open, single-pole, double-throw contacts for each switch position, rated 10 A at 240-V ac.
  - 9. Transfer Override Switch: Overrides automatic retransfer control so transfer switch will remain connected to emergency power source regardless of condition of normal source. Pilot light indicates override status.
  - 10. Engine Starting Contacts: One isolated and normally closed, and one isolated and normally open; rated 10 A at 32-V dc minimum.
  - 11. Engine Shutdown Contacts: Instantaneous; shall initiate shutdown sequence at remote engine-generator controls after retransfer of load to normal source.
  - 12. Engine Shutdown Contacts: Time delay adjustable from zero to five minutes, and factory set for five minutes. Contacts shall initiate shutdown at remote engine-generator controls after retransfer of load to normal source.
  - 13. Engine-Generator Exerciser: Solid-state, programmable-time switch starts engine generator and transfers load to it from normal source for a preset time, then retransfers and shuts down engine after a preset cool-down period. Initiates exercise cycle at preset



intervals adjustable from 7 to 30 days. Running periods shall be adjustable from 10 to 30 minutes. Factory settings shall be for 7-day exercise cycle, 20-minute running period, and 5-minute cool-down period. Exerciser features include the following:

- a. Exerciser Transfer Selector Switch: Permits selection of exercise with and without load transfer.
- b. Push-button programming control with digital display of settings.
- c. Integral battery operation of time switch when normal control power is unavailable.

**L. Large-Motor-Load Power Transfer:**

1. In-Phase Monitor: Factory-wired, internal relay controls transfer so contacts close only when the two sources are synchronized in phase and frequency. Relay shall compare phase relationship and frequency difference between normal and emergency sources and initiate transfer when both sources are within 15 electrical degrees, and only if transfer can be completed within 60 electrical degrees. Transfer shall be initiated only if both sources are within 2 Hz of nominal frequency and 70 percent or more of nominal voltage.
2. Motor Disconnect and Timing Relay Controls: Designated starters in loss of power scenario shall disconnect motors before transfer and reconnect them selectively at an adjustable time interval after transfer. Control connection to motor starters shall be through wiring external to automatic transfer switch. Provide adjustable time delay between 1 and 60 seconds for reconnecting individual motor loads. Provide relay contacts rated for motor-control circuit inrush and for actual seal currents to be encountered.
3. Programmed Neutral Switch Position: Switch operator with programmed neutral position arranged to provide a midpoint between the two working switch positions, with an intentional, time-controlled pause at midpoint during transfer. Adjustable pause from 0.5 to 30 seconds minimum, and factory set for 0.5 second unless otherwise indicated. Time delay occurs for both transfer directions. Disable pause unless both sources are live.

**2.3 MOLDED-CASE-TYPE AUTOMATIC TRANSFER SWITCHES**

- A. Comply with Level 1 equipment according to NFPA 110.
- B. Switch Characteristics: Designed for continuous-duty repetitive transfer of full-rated current between active power sources.
  1. Limitation: Switches using contactor-based components are unacceptable.
  2. Switch Action: Double throw; mechanically held in both directions.
  3. Contacts: Silver composition or silver alloy for load-current switching.
  4. Conductor Connectors: Suitable for use with conductor material and sizes.
  5. Material: Hard-drawn copper, 98 percent conductivity.
  6. Main and Neutral Lugs: Compression type.



7. Ground Lugs and Bus-Configured Terminators: Compression type.
  8. Ground bar.
  9. Connectors shall be marked for conductor size and type according to UL 1008.
- C. Automatic Open-Transition Transfer Switches: Interlocked to prevent the load from being closed on both sources at the same time.
1. Sources shall be mechanically and electrically interlocked to prevent closing both sources on the load at the same time.
- D. Automatic Delayed-Transition Transfer Switches: Pauses or stops in intermediate position to momentarily disconnect both sources, with transition controlled by programming in the automatic transfer-switch controller. Interlocked to prevent the load from being closed on both sources at the same time.
1. Adjustable Time Delay: For override of normal-source voltage sensing to delay transfer and engine start signals for alternative source. Adjustable from zero to six seconds, and factory set for one second.
  2. Sources shall be mechanically and electrically interlocked to prevent closing both sources on the load at the same time.
  3. Fully automatic break-before-make operation with center off position.
  4. Fully automatic break-before-make operation with transfer when two sources have near zero phase difference.
- E. Automatic Closed-Transition Transfer Switches: Connect both sources to load momentarily. Transition is controlled by programming in the automatic transfer-switch controller.
1. Fully automatic make-before-break operation when transferring between two available power sources.
  2. Load transfer without interruption, through momentary interconnection of both power sources not exceeding 100 ms.
  3. Initiation of No-Interruption Transfer: Controlled by in-phase monitor and sensors confirming both sources are present and acceptable.
    - a. Initiation occurs without active control of generator.
    - b. Automatic transfer-switch controller takes active control of generator to match frequency, phase angle, and voltage.
    - c. Controls ensure that closed-transition load transfer closure occurs only when the two sources are within plus or minus 5 electrical degrees maximum, and plus or minus 5 percent maximum voltage difference.
  4. Failure of power source serving load initiates automatic break-before-make transfer.
- F. Manual Switch Operation: Under load, with door closed and with either or both sources energized. Transfer time is same as for electrical operation. Control circuit automatically disconnects from electrical operator during manual operation.
- G. Manual Switch Operation: Unloaded. Control circuit automatically disconnects from electrical operator during manual operation.



- H. Electric Nonautomatic Switch Operation: Electrically actuated by push buttons designated "Normal Source" and "Alternative Source." Switch shall be capable of transferring load in either direction with either or both sources energized.
- I. Signal-Before-Transfer Contacts: A set of normally open/normally closed dry contacts operates in advance of retransfer to normal source. Interval shall be adjustable from 1 to 30 seconds.
- J. Digital Communication Interface: Matched to capability of remote annunciator or annunciator and control panel.
- K. Transfer Switches Based on Molded-Case-Switch Components: Comply with UL 489 and UL 869A.
- L. Automatic Transfer-Switch Controller Features:
  - 1. Controller operates through a period of loss of control power.
  - 2. Undervoltage Sensing for Each Phase of Normal and Alternative Source: Sense low phase-to-ground voltage on each phase. Pickup voltage shall be adjustable from 85 to 100 percent of nominal, and dropout voltage shall be adjustable from 75 to 98 percent of pickup value. Factory set for pickup at 90 percent and dropout at 85 percent.
  - 3. Voltage/Frequency Lockout Relay: Prevent premature transfer to generator. Pickup voltage shall be adjustable from 85 to 100 percent of nominal. Factory set for pickup at 90 percent. Pickup frequency shall be adjustable from 90 to 100 percent of nominal. Factory set for pickup at 95 percent.
  - 4. Time Delay for Retransfer to Normal Source: Adjustable from zero to 30 minutes, and factory set for 10 minutes. Override shall automatically defeat delay on loss of voltage or sustained undervoltage of emergency source, provided normal supply has been restored.
  - 5. Test Switch: Simulate normal-source failure.
  - 6. Switch-Position Pilot Lights: Indicate source to which load is connected.
  - 7. Source-Available Indicating Lights: Supervise sources via transfer-switch normal- and emergency-source sensing circuits.
    - a. Normal Power Supervision: Green light with nameplate engraved "Normal Source Available."
    - b. Emergency Power Supervision: Red light with nameplate engraved "Emergency Source Available."
  - 8. Unassigned Auxiliary Contacts: Two normally open, single-pole, double-throw contacts for each switch position, rated 10 A at 240-V ac.
  - 9. Transfer Override Switch: Overrides automatic retransfer control so automatic transfer switch will remain connected to emergency power source regardless of condition of normal source. Pilot light indicates override status.
  - 10. Engine Starting Contacts: One isolated and normally closed, and one isolated and normally open; rated 10 A at 32-V dc minimum.
  - 11. Engine Shutdown Contacts: Instantaneous; shall initiate shutdown sequence at remote engine-generator controls after retransfer of load to normal source.



12. Engine Shutdown Contacts: Time delay adjustable from zero to five minutes, and factory set for five minutes. Contacts shall initiate shutdown at remote engine-generator controls after retransfer of load to normal source.
13. Engine-Generator Exerciser: Solid-state, programmable-time switch starts engine generator and transfers load to it from normal source for a preset time, then retransfers and shuts down engine after a preset cool-down period. Initiates exercise cycle at preset intervals adjustable from 7 to 30 days. Running periods shall be adjustable from 10 to 30 minutes. Factory settings shall be for 7-day exercise cycle, 20-minute running period, and 5-minute cool-down period. Exerciser features include the following:
  - a. Exerciser Transfer Selector Switch: Permits selection of exercise with and without load transfer.
  - b. Push-button programming control with digital display of settings.
  - c. Integral battery operation of time switch when normal control power is unavailable.

**M. Large-Motor-Load Power Transfer:**

1. In-Phase Monitor: Factory-wired, internal relay controls transfer so contacts close only when the two sources are synchronized in phase and frequency. Relay shall compare phase relationship and frequency difference between normal and emergency sources and initiate transfer when both sources are within 15 electrical degrees, and only if transfer can be completed within 60 electrical degrees. Transfer shall be initiated only if both sources are within 2 Hz of nominal frequency and 70 percent or more of nominal voltage.
2. Motor Disconnect and Timing Relay Controls: Designated starters in loss of power scenario shall disconnect motors before transfer and reconnect them selectively at an adjustable time interval after transfer. Control connection to motor starters shall be through wiring external to automatic transfer switch. Provide adjustable time delay between 1 and 60 seconds for reconnecting individual motor loads. Provide relay contacts rated for motor-control circuit inrush and for actual seal currents to be encountered.
3. Programmed Neutral Switch Position: Switch operator with programmed neutral position arranged to provide a midpoint between the two working switch positions, with an intentional, time-controlled pause at midpoint during transfer. Adjustable pause from 0.5 to 30 seconds minimum, and factory set for 0.5 second unless otherwise indicated. Time delay occurs for both transfer directions. Disable pause unless both sources are live.

**2.4 NONAUTOMATIC TRANSFER SWITCHES**

- A. Electrically Operated: Electrically actuated by push buttons designated "Normal Source" and "Alternative Source." Switch shall be capable of transferring load in either direction with either or both sources energized.
- B. Manual and Electrically Operated: Electrically actuated by push buttons designated "Normal Source" and "Alternative Source." Manual handle provides quick-make, quick-break manual-switching action. Switch shall be capable of electrically or manually transferring load in either direction with either or both sources energized. Control circuit disconnects from electrical operator during manual operation.





- C. Double-Throw Switching Arrangement: Incapable of pauses or intermediate position stops during switching sequence.
- D. Pilot Lights: Indicate source to which load is connected.
- E. Source-Available Indicating Lights: Supervise sources via transfer-switch normal- and alternative-source sensing circuits.
  - 1. Normal Power Supervision: Green light with nameplate engraved "Normal Source Available."
  - 2. Emergency Power Supervision: Red light with nameplate engraved "Alternative Source Available."
- F. Unassigned Auxiliary Contacts: Switch shall have one set of normally closed contacts for each switch position, rated 10 A at 240-V ac.
- G. Switch Characteristics: Designed for continuous-duty repetitive transfer of full-rated current between active power sources.
  - 1. Switch Action: Double throw; mechanically held in both directions.
  - 2. Contacts: Silver composition or silver alloy for load-current switching.
  - 3. Conductor Connectors: Suitable for use with conductor material and sizes.
  - 4. Material: Hard-drawn copper, 98 percent conductivity.
  - 5. Main and Neutral Lugs: Compression type.
  - 6. Ground Lugs and Bus-Configured Terminators: Compression type.
  - 7. Ground bar.
  - 8. Connectors shall be marked for conductor size and type according to UL 1008.

## 2.5 TRANSFER SWITCH ACCESSORIES

### A. Bypass/Isolation Switches:

- 1. Source Limitations: Same manufacturer as transfer switch in which installed.
- 2. Comply with requirements for Level 1 equipment according to NFPA 110.
- 3. Description: Manual type, arranged to select and connect either source of power directly to load, isolating transfer switch from load and from both power sources. Include the following features for each combined automatic transfer switch and bypass/isolation switch:
  - a. Means to lock bypass/isolation switch in the position that isolates transfer switch with an arrangement that permits complete electrical testing of transfer switch while isolated. Interlocks shall prevent transfer-switch operation, except for testing or maintenance, while automatic transfer switch is isolated.
  - b. Provide means to make power available to transfer-switch control circuit for testing and maintenance purposes.
  - c. Drawout Arrangement for Transfer Switch: Provide physical separation from live parts and accessibility for testing and maintenance operations. Transfer switch and bypass/isolation switch shall be in isolated compartments.



- d. Transition: Provide closed-transition operation when transferring from main transfer switch to bypass/isolation switch on the same power source.
  - e. Transition: Provide closed-transition operation when transferring between power sources.
  - f. Bypass/Isolation Switch Current, Voltage, Closing, and Short-Circuit Withstand Ratings: Equal to or greater than those of associated automatic transfer switch, and with same phase arrangement and number of poles.
  - g. Contact temperatures of bypass/isolation switches shall not exceed those of automatic transfer-switch contacts when they are carrying rated load.
  - h. Manual Control: Constructed so load bypass and transfer-switch isolation can be performed by one person in no more than two operations in 15 seconds or less. Operating handles shall be externally operated.
  - i. Automatic and Nonautomatic Control: Automatic transfer-switch controller shall also control the bypass/isolation switch.
  - j. Legend: Manufacturer's standard legend for control labels and instruction signs shall describe operating instructions.
  - k. Maintainability: Fabricate to allow convenient removal of major components from front without removing other parts or main power conductors.
4. Interconnection of Bypass/Isolation Switches with Automatic Transfer Switches: Factory-installed copper bus bars; plated at connection points and braced for the indicated available short-circuit current.

**B. Remote Annunciator System:**

1. Source Limitations: Same manufacturer as transfer switch in which installed.
2. Functional Description: Remote annunciator panel shall annunciate conditions for indicated transfer switches.
3. Annunciation panel display shall include the following indicators:
  - a. Sources available, as defined by actual pickup and dropout settings of transfer-switch controls.
  - b. Switch position.
  - c. Switch in test mode.
  - d. Failure of communication link.
4. Annunciator Panel: LED-lamp type with audible signal and silencing switch.
  - a. Indicating Lights: Grouped for each transfer switch monitored.
  - b. Label each group, indicating transfer switch it monitors, location of switch, and identity of load it serves.
  - c. Mounting: Flush, modular, steel cabinet unless otherwise indicated.
  - d. Lamp Test: Push-to-test or lamp-test switch on front panel.



**C. Remote Annunciator and Control System:**

1. Source Limitations: Same manufacturer as transfer switch in which installed.
2. Include the following functions for indicated transfer switches:
  - a. Indication of sources available, as defined by actual pickup and dropout settings of transfer-switch controls.
  - b. Indication of switch position.
  - c. Indication of switch in test mode.
  - d. Indication of failure of digital communication link.
  - e. Key-switch or user-code access to control functions of panel.
  - f. Control of switch-test initiation.
  - g. Control of switch operation in either direction.
  - h. Control of time-delay bypass for transfer to normal source.
3. Malfunction of annunciator, annunciation and control panel, or communication link shall not affect functions of automatic transfer switch. In the event of failure of communication link, automatic transfer switch automatically shall revert to standalone, self-contained operation. Automatic transfer-switch sensing, controlling, or operating function shall not depend on remote panel for proper operation.
4. Remote Annunciation and Control Panel: Solid-state components. Include the following features:
  - a. Controls and indicating lights grouped together for each transfer switch.
  - b. Label each indicating light control group. Indicate transfer switch it controls, location of switch, and load it serves.
  - c. Digital Communication Capability: Matched to that of transfer switches supervised.
  - d. Mounting: Flush, modular, steel cabinet unless otherwise indicated.

**2.6 SOURCE QUALITY CONTROL**

- A. Factory Tests: Test and inspect components, assembled switches, and associated equipment according to UL 1008. Ensure proper operation. Check transfer time and voltage, frequency, and time-delay settings for compliance with specified requirements. Perform dielectric strength test complying with NEMA ICS 1.
- B. Prepare test and inspection reports.
  1. For each of the tests required by UL 1008, performed on representative devices, for emergency systems. Include results of test for the following conditions:
    - a. Overvoltage.
    - b. Undervoltage.
    - c. Loss of supply voltage.
    - d. Reduction of supply voltage.
    - e. Alternative supply voltage or frequency is at minimum acceptable values.
    - f. Temperature rise.



- g. Dielectric voltage-withstand; before and after short-circuit test.
- h. Overload.
- i. Contact opening.
- j. Endurance.
- k. Short circuit.
- l. Short-time current capability.
- m. Receptacle withstand capability.
- n. Insulating base and supports damage.

### PART 3 - EXECUTION

#### 3.1 INSTALLATION

- A. Floor-Mounting Switch: Anchor to floor by bolting.
  - 1. Install transfer switches on cast-in-place concrete equipment base(s). Comply with requirements for equipment bases and foundations.
  - 2. Comply with requirements for seismic control devices.
  - 3. Coordinate size and location of concrete bases. Cast anchor-bolt inserts into bases.
  - 4. Provide workspace and clearances required by NFPA 70.
- B. Annunciator and Control Panel Mounting: Flush in wall unless otherwise indicated.
- C. Identify components according to Section 260553 "Identification for Electrical Systems."
- D. Set field-adjustable intervals and delays, relays, and engine exerciser clock.
- E. Comply with NECA 1.

#### 3.2 CONNECTIONS

- A. Wiring to Remote Components: Match type and number of cables and conductors to generator sets, control, and communication requirements of transfer switches as recommended by manufacturer. Increase raceway sizes at no additional cost to the City of New York if necessary to accommodate required wiring.
- B. Wiring Method: Install cables in raceways and cable trays except within electrical enclosures. Conceal raceway and cables except in unfinished spaces.
  - 1. Comply with requirements for raceways and boxes specified in Section 260533 "Raceways and Boxes for Electrical Systems."
- C. Wiring within Enclosures: Bundle, lace, and train conductors to terminal points with no excess and without exceeding manufacturer's limitations on bending radii.



- D. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."
- E. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."
- F. Route and brace conductors according to manufacturer's written instructions and Section 260529 "Hangers and Supports for Electrical Systems." Do not obscure manufacturer's markings and labels.
- G. Final connections to equipment shall be made with liquidtight, flexible metallic conduit no more than 18 inches (457 mm) in length.

### 3.3 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to test and inspect components, assemblies, and equipment installations, including connections.
- C. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
  - 1. After installing equipment, test for compliance with requirements according to NETA ATS.
  - 2. Visual and Mechanical Inspection:
    - a. Compare equipment nameplate data with Drawings and Specifications.
    - b. Inspect physical and mechanical condition.
    - c. Inspect anchorage, alignment, grounding, and required clearances.
    - d. Verify that the unit is clean.
    - e. Verify appropriate lubrication on moving current-carrying parts and on moving and sliding surfaces.
    - f. Verify that manual transfer warnings are attached and visible.
    - g. Verify tightness of all control connections.
    - h. Inspect bolted electrical connections for high resistance using one of the following methods, or both:
      - 1) Use of low-resistance ohmmeter.
      - 2) Verify tightness of accessible bolted electrical connections by calibrated torque-wrench method according to manufacturer's published data.
    - i. Perform manual transfer operation.
    - j. Verify positive mechanical interlocking between normal and alternate sources.
    - k. Perform visual and mechanical inspection of surge arresters.



1. Inspect control power transformers.
  - 1) Inspect for physical damage, cracked insulation, broken leads, tightness of connections, defective wiring, and overall general condition.
  - 2) Verify that primary and secondary fuse or circuit-breaker ratings match Drawings.
  - 3) Verify correct functioning of drawout disconnecting contacts, grounding contacts, and interlocks.
3. Electrical Tests:
  - a. Perform insulation-resistance tests on all control wiring with respect to ground.
  - b. Perform a contact/pole-resistance test. Compare measured values with manufacturer's acceptable values.
  - c. Verify settings and operation of control devices.
  - d. Calibrate and set all relays and timers.
  - e. Verify phase rotation, phasing, and synchronized operation.
  - f. Perform automatic transfer tests.
  - g. Verify correct operation and timing of the following functions:
    - 1) Normal source voltage-sensing and frequency-sensing relays.
    - 2) Engine start sequence.
    - 3) Time delay on transfer.
    - 4) Alternative source voltage-sensing and frequency-sensing relays.
    - 5) Automatic transfer operation.
    - 6) Interlocks and limit switch function.
    - 7) Time delay and retransfer on normal power restoration.
    - 8) Engine cool-down and shutdown feature.
4. Measure insulation resistance phase-to-phase and phase-to-ground with insulation-resistance tester. Include external annunciation and control circuits. Use test voltages and procedure recommended by manufacturer. Comply with manufacturer's specified minimum resistance.
  - a. Check for electrical continuity of circuits and for short circuits.
  - b. Inspect for physical damage, proper installation and connection, and integrity of barriers, covers, and safety features.
  - c. Verify that manual transfer warnings are properly placed.
  - d. Perform manual transfer operation.
5. After energizing circuits, perform each electrical test for transfer switches stated in NETA ATS and demonstrate interlocking sequence and operational function for each switch at least three times.
  - a. Simulate power failures of normal source to automatic transfer switches and retransfer from emergency source with normal source available.
  - b. Simulate loss of phase-to-ground voltage for each phase of normal source.
  - c. Verify time-delay settings.



- d. Verify pickup and dropout voltages by data readout or inspection of control settings.
    - e. Test bypass/isolation unit functional modes and related automatic transfer-switch operations.
    - f. Perform contact-resistance test across main contacts and correct values exceeding 500 microhms and values for one pole deviating by more than 50 percent from other poles.
    - g. Verify proper sequence and correct timing of automatic engine starting, transfer time delay, retransfer time delay on restoration of normal power, and engine cool-down and shutdown.
  6. Ground-Fault Tests: Coordinate with testing of ground-fault protective devices for power delivery from both sources.
    - a. Verify grounding connections and locations and ratings of sensors.
- D. Coordinate tests with tests of generator and run them concurrently.
- E. Report results of tests and inspections in writing. Record adjustable relay settings and measured insulation and contact resistances and time delays. Attach a label or tag to each tested component indicating satisfactory completion of tests.
- F. Transfer switches will be considered defective if they do not pass tests and inspections.
- G. Remove and replace malfunctioning units and retest as specified above.
- H. Prepare test and inspection reports.
- I. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each switch. Remove all access panels so joints and connections are accessible to portable scanner.
  1. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
  2. Record of Infrared Scanning: Prepare a certified report that identifies switches checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.
  3. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each switch 11 months after date of Substantial Completion.

### 3.4 DEMONSTRATION

- A. Engage a factory-authorized service representative to instruct Commissioner's maintenance personnel to adjust, operate, and maintain transfer switches and related equipment.



- B. Instruction shall include testing ground-fault protective devices and instructions to determine when the ground-fault system shall be retested. Include instructions on where ground-fault sensors are located and how to avoid negating the ground-fault protection scheme during testing and circuit modifications.
- C. Coordinate this instruction with that for generator equipment.

END OF SECTION 263600





**SECTION 31 00 00  
EARTHWORK**

**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 DESCRIPTION**

A. Scope:

1. Under this Section, the Contractor shall make all necessary excavations for geomembrane work, piping and structures and for all required or ordered purposes incidental to the work; shall backfill such excavations to the extent necessary; shall dispose of all excess materials and shall do miscellaneous grading.
2. Earthwork required under all trades, if any, shall be included under that Contract and shall conform to all applicable requirements of this Section.
3. All such work shall be done as indicated on the Drawings and as herein specified at no additional cost to the City of New York; except as/if specifically covered in other sections.
4. Excavation shall include the removal, storage, segregation, handling, rehandling, refill and disposal of any and all materials of whatever nature encountered in the work and shall include all dewatering and sheeting and bracing.
  - a. Organic materials shall be disposed off-site at Department of Environmental Conservation approved disposal sites.
  - b. Unsuitable inorganic materials and excess suitable materials, to be disposed off-site.
5. Only the use of light excavating machinery will be permitted, except in places where operation of same will cause damage to adjacent property, utilities, structures or completed work, in which case hand methods shall be employed.
6. The program of excavation, sheeting and bracing shall be carried out in such a manner as to prevent undermining or disturbing the foundations of existing structures or of work previously completed under this contract.

B. Related work specified elsewhere:

1. Section 02 41 10, Selective Site Demolition
2. Section 03 30 00, Cast-in-Place Concrete



### **1.3 SUBMITTALS**

- A. In accordance with the procedures and requirements set forth in the General Conditions and Division I, the Contractor shall submit the following to the Commissioner for approval:
  - 1. At least two weeks prior to the date of anticipated use, the Contractor shall submit, to the Commissioner, for approval, testing results for all on-site and off-site materials proposed for use. The Contractor shall notify the Commissioner in writing of the source of each proposed material.
- B. Disposal Sites:
  - 1. List of disposal sites for unsuitable materials and all required permits for use of the sites. Waste transportation and disposal shall be performed.
- C. Manufacturer's Data:
  - 1. Submit for approval manufacturer's specifications, performance characteristics and operating instructions for the compaction equipment.

### **1.4 QUALITY ASSURANCE**

- A. Samples and Tests
  - 1. All on-site and off-site materials used shall be subject to examination and tests before acceptance and during the duration of this Contract.
  - 2. Any material may be tested and no materials for which laboratory tests are required shall be used by the Contractor until the Contractor has received notification of acceptance, and then only as long as its quality remains equal to that of the accepted sample.
  - 3. Material rejected as the result of laboratory tests will not be resampled or retested unless otherwise directed by the Commissioner.
  - 4. Testing of materials for approval shall include, but shall not be limited to, the following (all tests to be performed after screening or processing of the material).
    - a. Grain size distribution in accordance with ASTM D422, including hydrometer analysis.
    - b. Characterization in accordance with ASTM D2487.
    - c. Moisture/Density relationship in accordance with ASTM D698 (Standard Proctor).



5. The Contractor shall assist the Commissioner, as requested, in providing access to the Work, the taking and recovery of samples, the repair of the sampled areas, etc. No aspect of the Contractor's involvement in providing assistance to the Commissioner shall be construed by the Contractor as suitable grounds for claim of hardship, delay or additional compensation.
6. The Contractor shall prequalify soils to be used for the project. The prequalification process will require that the Contractor identify suitable material for use for the project. The Contractor shall obtain prequalification samples from each source and each soil stockpile of no less than one for every 1,000 cubic yards. The stockpile pre-qualification samples shall be obtained at two opposite locations to expose the core of the stockpile and allow the taking of representative samples or as approved by the Commissioner. The Contractor shall have at least two samples (one for Commissioner, remainder for Contractor) of material taken at each sampling location by an approved soils testing laboratory. The sampling shall be conducted in the presence of the Commissioner. Each sample furnished to the Commissioner shall be at least 50 pounds in weight and shall be tested by the Commissioner, at his/her discretion, for conformance testing of the prequalification process. The Contractor shall have each "Contractor Sample" tested by the approved soils testing laboratory as prescribed above. The Contractor shall submit certified copies of the test results and test methods to the Commissioner for review and approval. If the test results are acceptable, the Contractor may proceed with the use of the prequalified source and the prequalification stockpile material may be incorporated into the work. If the test results are not acceptable, the Contractor shall modify the proposed source as required to provide soil which satisfies the requirements of these Specifications and the Contractor shall repeat the prequalification process (using alternative material) as described above until acceptable test results are achieved. The Contractor shall not utilize unacceptable prequalification stockpiles in the execution of the work.

#### **1.5 ACCESSIBILITY**

- A. The Contractor shall maintain the site in such condition that all the employees of the City of New York may conduct their work without interference.

#### **1.6 LINES OF EXCAVATION**

- A. All excavations shall be made in such manner and to such widths as will give ample room for properly building and inspecting the structures and piping they are to contain, for such sheeting and bracing, as may be necessary, and for application of damp-proofing if required.
- B. When excavating for structural work, special care shall be taken not to disturb the bottom of the excavation and the final removal of material to subgrade shall not be made until just before reinforcing and concrete is placed.



## **PART 2 - PRODUCTS**

### **2.1 SEGREGATION OF EXCAVATED MATERIALS**

#### **A. General:**

1. All materials removed by excavation shall be stockpiled and tested for gradation, compaction (relative density) and chemical analysis, by the Contractor for the presence of any unsuitable materials (e.g., organics, silts or clays) and conformance with specified values prior to reuse on-site.
2. Locations of these stockpiles shall be subject to the approval of the Commissioner. The stockpiles shall be segregated by approved use (i.e., Topsoil, Select Fill, General Fill), and shaped to drain.
3. Unsuitable material shall be immediately removed from the City of New York's property and disposed of by the Contractor at an acceptable disposal site. Contractor shall furnish appropriate manifests for disposal, to the Commissioner.
4. Selection of material for each classification shall be at the direction of the Commissioner.
5. Surplus excavated material, either unsatisfactory for or over and above that required for backfilling or regrading shall be disposed of by the Contractor, at his own expense, off the site of the work.
6. All materials removed by excavation shall be reused only as General or Select Fill, unless found to be unsuitable or unusable.
7. Local, deeper excavations should be made, as required for construction.
8. Local dewatering should be made, as required for construction.
9. Field density tests for all backfill material shall be performed at the rate of 1 test per 150 cu yds placed, one test per lift, or 1 test per structure, whichever results in the greater number of tests. Compaction criteria shall be as defined below.
10. Compaction criteria for stockpiled material reused in construction shall be based upon tests made on materials taken from stockpile.
11. Compaction criteria shall be the highest dry unit weight and corresponding moisture content, as determined by the following tests:

<u>Location</u>	<u>ASTM-D1557 or ASTM-D4253/4</u>	
Below structures and pipe	98%	85%
All other areas	95%	80%



**B. Select Fill:**

1. Where quantity of on-site fill material is not sufficient, additional select fill shall be provided by the Contractor at no additional cost to the City of New York and shall meet the following requirements:

<u>Sieve Size</u>	<u>Percent Passing</u>
1"	100
#4	60-95
#20	35-85
#60	10-30
#100	5-15
#200	less than 4

2. Materials for select fill shall consist of well drained on-site or off-site material, free of clay, mud, frost, organic matter or construction debris.
3. Select Fill shall be used to backfill around pipe (except as otherwise specified in Division 23) and under structures, and as shown on the Contract Documents or directed by the Commissioner.
4. Unless otherwise specified, directed by the Commissioner or shown on the Contract Documents, Select Fill shall be placed in compacted lifts of 6" maximum thickness and compacted by means of a mechanical tamper to at least 98% dry density (ASTM-D1557) or 85% (ASTM-D4253/4).
5. All controlled backfilling shall be performed with Select Fill obtained either from excavated material or from outside sources.

**C. General Fill:**

1. Material for General Fill shall be acceptable for backfill in areas other than under structures and piping as shown or directed.
2. General Fill: Soil materials for general backfill and fill shall be free of organics, clay debris, water, frozen materials and other deleterious matter and shall conform to the following gradation.

<u>Sieve Size</u>	<u>Percent Passing by Weight</u>
6inch	100
No. 40	0-70
No. 200	0-15

3. The selection of material for General Fill and the location for its use shall be as shown on the Contract Documents and as directed by the Commissioner.



4. It shall consist of clean, compactable sound granular material free from rubbish or other unsuitable material.
5. Unless otherwise specified, directed by the Commissioner or shown on the Contract Documents, general fill shall be placed in compacted lifts of 12" maximum thickness and compacted by means of a mechanical tamper to at least 95% dry density ASTM-D1557) or 80% (ASTM-D4253/4).

**D. Unsuitable Material:**

1. Material unsuitable for use in backfilling are clay, boulders, peat, construction debris, organics and any other material so designated by the Commissioner.
2. Stockpiling of Unsuitable Material shall not be permitted.
3. Unsuitable Material must be promptly removed from the site and disposed of by the Contractor, at his own expense, off the site of the work.

**E. Excess Material:**

1. Any excavated material not required for use in the project shall become the property of the Contractor and shall be removed by him from the site.

**F. RCA:**

1. RCA shall be in accordance with NYSDOT Specifications.

**2.2 SHEETING AND BRACING**

- A. The Contractor shall be required to use sheeting and bracing (temporary support system) on this project, where conditions or laws require it. The temporary support system shall be designed by a licensed professional Engineer (NYS) engaged by the Contractor.
- B. The Contractor shall furnish, put in place, and maintain such sheeting, bracing, etc., as may be necessary to prevent groundwater from penetrating into the excavation and to support the sides of the excavation to prevent any movement of earth which could in any way diminish the width of the excavation to less than that necessary for proper construction, or could otherwise injure or delay the work, or endanger adjacent structures, or embankments. All sheeting shall be adequate and conform to the provisions of the current New York State Industrial Code Rule 23 as established by the New York State Department of Labor, Board of Standards and Appeals, as well as all appropriate State and Federal regulations including OSHA.
- C. The Contractor shall leave in place any sheeting, bracing, etc., which the Commissioner may direct him in writing to leave in place, at any time during the progress of the work, for the purpose of preventing injury to structures or property.



- D. The Commissioner may direct that timber or steel used for sheeting and bracing be cut off at any specified elevation.
- E. All sheeting and bracing not to be left in place shall be carefully removed in such manner as not to endanger the construction or other structures. All voids left or caused by the withdrawal of sheeting shall be backfilled immediately with select fill and compacted by ramming with tools especially adapted to the purpose, by watering, or by other means as may be directed.
- F. Vibrating type hammers shall not be permitted. Any material which stops the installation of sheeting shall be removed by the Contractor.
- G. Safe and satisfactory installation of the sheeting shall be the entire responsibility of the contractor.

### **2.3 FLOWABLE FILL**

- A. Flowable fill shall be utilized as a backfill material when ordered by the Commissioner and where shown on the drawings. Flowable fill shall be a cementitious control density fill, DaraFill as manufactured by Grace Construction Products, or equal.
- B. The mix design shall be developed to ensure that the flowable fill is excavatable through the entire service life of the installation. Mixture ingredients and proportions shall be submitted for approval. The flowable fill mixture shall be designed as a low strength, flowable material requiring no subsequent vibration or tamping to achieve consolidation.
- C. The flowable fill shall be provided by an approved ready-mix concrete supplier and shall be produced, transported and delivered through conventional ready-mix equipment. A pre-job test shall be performed in the presence of the Commissioner and the flowable fill manufacturer utilizing the proposed design mix, a minimum of 28 days prior to utilizing the flowable fill material in the work. Compressive strength/compaction characteristics, slump and the excavatable characteristics shall be demonstrated to the satisfaction of the Commissioner.
- D. The utilization of the flowable fill material shall be in strict accordance with the manufacturer's recommendations and as approved by the Commissioner. The DaraFill or approved equal additive shall be added to the mixer at the job site following slump test.

### **2.4 UNAUTHORIZED EXCAVATION**

- A. Whenever the excavation is carried beyond or below the lines and grades shown on the Contract Documents, or given by the Commissioner, the Contractor shall at his own expense, refill such excavated space with select fill as directed by the Commissioner.

## **PART 3 - EXECUTION**

### **3.1 PROTECTION OF EXISTING FACILITIES**



- A. The Contractor shall protect all existing facilities, utilities, etc. which are to remain in service from damage due to his operations throughout the duration of the work. Facilities which are to be replaced during the course of the Contract shall be protected until the Commissioner gives notice that they are no longer required to be in service.
- B. Facilities which must be protected include but are not limited to utilities, treatment units, buildings, tanks, piping, chambers, manholes, valves, etc.
- C. The Contractor shall not use machinery which threatens the integrity of existing facilities or facilities under construction. When the machinery in use threatens the integrity of such facilities, the Contractor shall use other machinery or do the work by hand. Any damage resulting from improper equipment use shall be repaired at the expense of the Contractor.
- D. The Contractor shall immediately repair or replace any facilities which are damaged by his operations. Repairs or replacement, etc. shall be made to current standards of the City of New York.
- E. All existing electric conduits, lighting poles, telephone lines, chains, fences or other structures especially including underground process piping and the direct burial of high voltage primary electrical cable which are encountered or uncovered by the excavation and which do not, in the opinion of the Commissioner, require to be changed in location, shall be carefully supported and protected from injury by the Contractor and if damaged or removed, they shall be restored by the Contractor, without compensation, to at least as good condition as that in which they were found immediately before work was begun.

### **3.2 EXCAVATION**

- A. General:
  - 1. Contractor shall perform all excavation required to complete the Work as shown and specified. All material excavated shall be nonclassified. It shall include all materials such as earth, sand, clay, gravel, hardpan, boulders, organic materials, rock, rubbish and all other materials within the excavation limits.
  - 2. Excavations shall be open type, shored and braced where necessary to prevent injury to workmen and to new and existing structures or pipelines.
  - 3. All excavations shall be made in the dry.
  - 4. Dispose of excavated material and waste materials as specified herein.
- B. Pipeline Excavation:
  - 1. Pipe trenches shall be excavated below the pipe bottom to allow for pipe bedding material.
  - 2. Trench width shall be minimized to greatest extent practical but shall conform to the following:





- a. Sufficient to provide room for installing, jointing and inspecting piping, but in no case wider at top of pipe than pipe barrel outside diameter plus 2 feet.
- b. Enlargements at pipe joints may be made if required and approved by Commissioner.
- c. Sufficient for sheeting, bracing and sloping.
- d. Sufficient to allow thorough compacting of material adjacent to bottom half of pipe.
- e. Do not use excavating equipment which requires the trench to be excavated to excessive width.

**C. Structure Excavation:**

1. Excavation shall be made to the grades shown on the Contract Drawings and to such widths as will give suitable room for construction of the structures, for bracing and supporting, pumping and draining. The bottom of the excavations shall be rendered firm and dry and in all respects acceptable to the Commissioner.
2. Excavation shall be accomplished by methods which preserve the undisturbed state of subgrade soils. For structures having multiple bearing levels or adjacent structures at different levels, excavation and foundation construction shall first be accomplished at the lowest levels to prevent undermining foundations and disturbing adjacent bearing soils at higher levels.
3. Excavation equipment shall be satisfactory for carrying out the work in accordance with the Specifications. Earth shall not be plowed, scraped, or dug with machines so near to the finished subgrade as to result in excavation of, or disturbance of material below grade.
4. When excavation for foundations has reached final depths, the Commissioner shall be notified and will inspect conditions. If materials and conditions are not satisfactory to the Commissioner, the Commissioner will issue instructions as to the procedures for correction of the unsatisfactory condition.
5. During final excavation to subgrade level, take precautions required to prevent disturbance of material. Hand excavate the final 6 inches as necessary to obtain a satisfactory undisturbed bottom.

**D. Unsuitable Excavation:**

1. If any over excavation occurs through error of the Contractor or for the Contractor's convenience, it shall be refilled at the Contractor's expense with concrete, select fill or other material satisfactory to the Commissioner.



2. If Contractor fails to properly dewater the excavation or trench, or disturbs the subgrade or otherwise fails or neglects to conduct the excavation work in a manner that provides surface of subgrade in proper condition for construction, the Contractor shall remove all disturbed material and replace it with concrete, select fill, or other approved material at his own expense. The condition of the subgrade shall meet with the approval of the Commissioner before any work is placed thereon.
3. If, in the opinion of the Commissioner, the material, in its undisturbed natural condition, at or below the grade of the excavation indicated on the Drawings is unsuitable for foundations, or if organic or silty soil extends below excavation depth, it shall be removed and be replaced with select fill or other suitable material. Suitable material excavated from the site shall be used before select fill from an outside source is permitted.

### **3.3 EXCAVATED MATERIALS STORAGE**

- A. Excavated material shall be placed in temporary storage located on-site as approved by the Commissioner, immediately after excavation.
- B. Storage of excavated material outside the designated soil staging areas is prohibited without prior written approval by the Commissioner.
- C. The following methods of storage are acceptable:
  1. Stockpiles
    - a. Excavated materials shall be stockpiled on-site in the areas as approved by the Commissioner.
    - b. Stockpiles shall be constructed to isolate stored material from the environment. The maximum stockpile height shall be 10 feet. Each stockpile shall be labeled with an identification number identifying the material stored within the stockpile.
    - c. Diversion measures shall be employed, to prevent storm water run-on and run-off.
    - d. A geomembrane liner and cover shall be used to prevent cross-contamination of clean areas of the site and to prevent precipitation from entering the stockpile and emissions and dust from escaping. The minimum thickness of the membrane cover shall be 0.25 mm (10 mils) and the minimum thickness for the liner shall be 1.0 mm (40 mils). Control measures such as wetting the stockpile surfaces shall be employed to suppress dust. Only potable water shall be used for this purpose. Seams in the liner shall be overlapped by a minimum of 2 feet.



2. Roll-off Units

- a. Roll-off units may be used for temporary storage in lieu of stockpiling the material.
- b. Storage units shall be in good condition and constructed of materials that are compatible with the material or liquid to be stored.
- c. Each storage unit shall be clearly labeled with an identification number and a written log shall be kept to track the source of contaminated material in each unit.
- d. Roll-off units used to temporarily store contaminated material shall be watertight. A cover shall be placed over the units to prevent precipitation from contacting the stored material. Liquid which collects inside the units shall be removed and disposed of in accordance with all applicable federal, state and local laws and regulations.

**3.4 CONTROLLED BACKFILLING**

- A. Backfill under structures, pipes, sidewalks and roads shall be performed with Select Fill either from stockpiled material or from outside sources.
- B. Should the excavated material not be suitable or if more select fill is required than excavated, select fill shall be brought in from outside sources.
- C. Filling against the walls of structures shall be done as ordered and particular care shall be taken to prevent damage to green masonry by falling, rolling or sliding material.
- D. Fill shall not be placed against walls until they have attained sufficient strength to safely resist the thrust of the material.
- E. Backfill shall be placed in horizontal layers and compacted as indicated elsewhere in this specification.
- F. Backfilling shall not be made during freezing weather. It shall not be made with frozen material or when materials already placed are frozen.
- G. If any of the backfilling shall settle so as to be below the required levels for the proposed finished surface at any place before the final acceptance of the work to be done under this Contract, the Contractor shall, bearing expense and cost, supply additional materials and build up the low places as directed.
- H. A testing laboratory approved by the Commissioner, shall be employed by the Contractor to perform all density tests and sieve analysis to certify the specified compaction and quality of material. Costs of tests shall be borne by the Contractor.



**3.5 GRADING**

- A. Areas to be graded shall be constructed true to grade, shall be shaped to drain, and shall be maintained free from extraneous accumulations until final inspection has been completed and the work has been accepted.
- B. Finished grade elevations shall be as shown on the Contract Drawings and as directed by the Commissioner.

++ END OF SECTION ++



FMS ID: PO79GENER



Department of  
Design and  
Construction

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

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**Contract for Furnishing all Labor and Material Necessary and Required for:**

**CONTRACT NO. 1 ELECTRICAL WORK**

**Replacement of Generators at 2 NYPD  
Precincts**

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

Contractor

Dated \_\_\_\_\_, 20\_\_\_\_

Entered in the Comptroller's Office

First Assistant Bookkeeper

Dated \_\_\_\_\_, 20\_\_\_\_

