



PROJECT ID: HWKF029B

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

LAW

VOLUME 1 OF 3

BID BOOKLET

FOR FURNISHING ALL LABOR AND MATERIALS
NECESSARY AND REQUIRED FOR:

121 Plymouth Paint Warehouse Relocation to 424 Wythe Building Construction

LOCATION:
BOROUGH:
CITY OF NEW YORK

424 Wythe Avenue
Brooklyn 11211

CONTRACT NO. 1

GENERAL CONSTRUCTION WORK

DOT

Goldman + Copeland Associates, PC



Date: April 10, 2014

14-112



NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

DR. FENIOSKY A. PEÑA-MORA
Commissioner

JOHN GODDARD
Agency Chief
Contracting Officer

October 03, 2014

CERTIFIED MAIL - RETURN RECEIPT REQUEST

TJM CONSTRUCTION CORP. / LONG ISLAND CONCRETE, INC. - A JOINT VENTURE
301 Mill Road, Suite U-5
Hewlett, NY 11557

RE: FMS ID: HWKF029B
E-PIN: 85014B0134001
DDC PIN: 8502013TR0006C
121 PLYMOUTH PAINT WAREHOUSE
RELOCATION TO 424 WYTHE BUILDING
CONSTRUCTION - BOROUGH OF
BROOKLYN
NOTICE OF AWARD

Dear Contractor:

You are hereby awarded the above referenced contract based upon your bid in the amount of \$2,908,000.00 submitted at the bid opening on July 01, 2014. 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 four copies of the Agreement in the Contracts Unit, 30-30 Thomson Avenue, 1st 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 four 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,

Suzanne Holley for J. Goddard

John Goddard

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: HWKF029B

**121 Plymouth Paint Warehouse Relocation to 424 Wythe Building
Construction
424 Wythe Avenue
Brooklyn 11211**

Name of Bidder: TJM Construction Corp./Long Island Concrete, Inc. a Joint Venture

Date of Bid Opening: July 1, 2014

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

Place of Business of Bidder: 301 Mill Rd. - Suite U-5, Hewlett, New York 11557

Bidder's Telephone Number: 516.773.9800 Bidder's Fax Number: 516.773.9898

Bidder's Email Address: rsbuilds@aol.com

Residence of Bidder (If Individual): Not Applicable

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

Names of Partners

Residence of Partners

TJM Construction Corp - Robert Stochan 301 Mill Rd - Suite U-5, Hewlett, NY 11557
Long Island Concrete, Inc. Thomas Perno 31-31 48th Avenue, Long Island City, NY

If Bidder is a Corporation, fill in the following blanks: Not Applicable
Organized under the laws of the State of _____

Name and Home Address of President: _____

Name and Home Address of Secretary: _____

Name and Home Address of Treasurer: _____

BID FORM

PROJECT ID: HWKF029B

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

LUMP SUM PRICE - Total price for all labor and material for all required work. 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
Material Sold and
Delivered

Total Price For
Labor

\$1,458,000 - +

\$1,450,000 -

7/1/14

Total Price for Work = \$2,908,000 -

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: TJM Construction Corp./Long Island Concrete, Inc. a Joint Venture

By: [Signature]
(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 Nassau ss:

Robert Slochover being duly sworn says:

I am a member of Long Island Concrete Tack Joint Vent 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
27 day of June 2014

Cindy Henggeler
Notary Public

CINDY HENGGELER
Notary Public, State of New York
No. 01HE6143717
Qualified in Nassau County
Commission Expires: April 17, 2018

AFFIDAVIT WHERE BIDDERS IS A CORPORATION

STATE OF NEW YORK, COUNTY OF _____ ss:

_____ being duly sworn says:

I am the _____ of the above named corporation whose name is subscribed to and which executed the foregoing bid. I reside at _____

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
_____ day of _____,

Notary Public

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: TJM Construction Corp / Long Island Concrete, Inc a Joint Venture
Address: 201 Mill Rd. - Suite U-5
City: Newlett State: New York Zip Code: 11557

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
46 - 1385761
- C - Corporation
EMPLOYER IDENTIFICATION NUMBER

By: [Signature]
Signature:

Title: Managing Partner

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.



NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
LOCATION: 424 Wythe Avenue, Brooklyn
BIDDER: TJM Construction Corp/Long Island Concrete, Inc a Joint Venture

CONTRACTOR BID BREAKDOWN FC

FMS ID NUMBER: HWK029B

CLIENT AGENCY: Dept. of Transportation

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
CONTRACT 1 - GENERAL CONSTRUCTION WORK								
01 1000	General Conditions	-	ls					159,000
	Mobilization							146,500
	subtotal							
Bond & Insurance								
02 2100	Selective Removals & Demolition							
	Site Demolition							
	Sawcut existing asphalt pavement	360	lf	2.3	805	3.45	1207	2012
	Remove Existing Paving On Site	19950	sf	1.4	27980	2.00	39900	47880
	Remove Existing Sidewalk	7970	sf	1.4	11158	2.10	16737	27895
	Remove Existing stone curb at South 6th. Street and Wythe Avenue	400	lf	4.6	1840	6.9	2760	4600
	Remove Existing concrete curb/wall for chain link fence	425	lf	5.5	2338	8.20	3528	5866
	Remove Existing Catch Basin	2	ea	40	80	60	120	200
	Protection @ Existing Fuel Tank	425	lf	5	2125	8	3400	5525
	Remove existing 10'h. Chain Link Fence	-	ls	-	-	575	575	575
	Remove & Relocate existing Fuel Oil Tank	-	ls	-	-	345	345	345
	Relocate existing Containers	-	ls	-	-	-	-	-
	Remove Abandoned Piles & Foundations if Interference w/ New Foundations	-	ls	-	5500	-	1700	23200
	Remove chain link fence w/galvanized roof	-	ls	NA	-	-	-	-
	Mill existing asphalt	19950	sf	1.4	7980	1.6	11970	19950
	Remove buried electrical conduits	35	lf	10	350	20	700	1050
	Misc. Site Demo	-	ls	-	-	-	-	5902
	subtotal							145,000
03 3000	Cast-in Place Concrete							
	Concrete grade beam	33	cy	150	4950	400	13200	18150
	Concrete							
	Formwork	2490	sf	-	-	-	-	-
	Reinforcing	18,000	lb	-	-	-	-	-
	Column footing							

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
 LOCATION: 424 Wythe Avenue, Brooklyn
 BIDDER: TJM Construction Corp / Long Island Concrete, Inc. a Joint Venture

CSI Number	Description	Quantity	Unit	Unit Cost of		Total Cost of		Total Cost of		Total Cost: Materials and Labor
				Material	Labor	Material	Labor	Material	Labor	
	Concrete	21	cy	240	—	5040	—	7560	—	12600
	Formwork	119	sf	—	—	—	—	—	—	—
	Reinforcing	950	lb	—	—	—	—	28520	—	49910
	Concrete SOG - 6"th. +6"Drainage Fill	3565	sf	—	—	21390	8	20500	—	34500
	16" concrete curb/wall on site	405	lf	35.55	50.6	14000	—	8280	—	13800
	Concrete	23	cy	240	—	5520	360	—	—	—
	Formwork	80	sf	—	—	—	—	—	—	—
	Reinforcing	122	lb	—	—	—	—	600	—	1050
	16" high roof curb for mechanical equipment	3	ea	150	200	450	—	—	—	10000
	Miscellaneous concrete	—	ls	—	—	—	—	—	—	140,000
	subtotal									
04 2000	Unit Masonry	5000	sf	1.20	25.58	6720	143280	—	—	150000
	8"x16"Ground Faced CMU - Façade-24'h.									160,000
	subtotal									
05 1200	Structural Steel	7.40	tns	1800	2060	13320	15244	—	—	28564
	Structural steel	5.90	tns	1800	2060	10620	12154	—	—	22774
	Steel beams	—	ls	—	—	—	—	—	—	—
	Columns and posts	1.5	tns	40	60	360	540	—	—	900
	Cross bridging	—	ea	—	—	—	—	—	—	—
	Reinforcing at skylights L4 x 4 x 3/8	18	ea	400	600	7200	10800	—	—	18000
	Column base	—	ea	—	—	—	—	—	—	5762
	Moment connections	—	ls	—	—	—	—	—	—	76100
	Misc structure steel									
	subtotal									
05 2100	Steel Joists	2.85	tns	1550	2000	—	—	—	—	10000
	Steel Joists	1.74	tns	1550	1900	—	—	—	—	6000
	28LH08									
	16K4									16,000
	subtotal									



NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

CONTRACTOR BID BREAKDOWN

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue

LOCATION: 424 Wythe Avenue, Brooklyn

BIDDER: TJM Construction Corp / Long Island Concrete Inc. a Joint Venture

FMS ID NUMBER: HWK029B
CLIENT AGENCY: Dept. of Transportation

CSI Number	Description	Quantity	Unit	Unit Cost of		Total Cost of		Total Cost of		Total Cost: Materials and Labor
				Material	Labor	Material	Labor	Material	Labor	
05 3100	<u>Steel Deck</u> Metal roof Deck	3075	sf	2.02	4.50	6212	13838	20000	20000	
	subtotal								20000	
05 5000	<u>Miscellaneous Metals</u> Aluminum "C" Channel 15"h. @ façade perimeter 42"h. Steel Roof Railing Access gate Tube steel at swing doors 6x4x3/8 Angle above roll up doors Galvanized hung lintels for windows Misc metals	305 305 2 3 82 230 -	lf lf ea tns lf lf ls	90 60 - 1700 40 40 -	110 80 - 1800 70 60 -	27450 18300 6000 5100 3280 9200 -	33550 24400 10000 5400 5740 13800 -	61000 42700 16000 10500 9020 23000 19760	182000	
06 2000	<u>Carpentry</u> Carpentry - Installation of Doors & Hardware Plywood Applied To Interior Side Of Façade Wall on Z channels Blocking at skylights Blocking at roof perimeter	4 6000 112 315	ea sf lf lf	400 1.5 5.5 7.0	600 2.00 8.5 10.25	1000 9000 616 2205	2400 12000 952 3227	4000 21000 1568 5432	32000	
	subtotal									
07 1326	<u>Sheet Membrane Waterproofing</u> Liquid applied none permeable waterproof membrane	1575	sf	4.52	5.01	7119	7890	15000	15000	
	subtotal								15000	
07 2100	<u>Thermal Insulation</u> 3' rigid insulation at slab on grade 4" rigid insulation at perimeter footing Drainage mat w/filter fabric 3" spray applied wall insulation	3565 1575 864 6016	sf sf sf sf	1.0 1.5 6 1.5	2.00 2.50 7.01 2.62	3565 2363 5184 9024	7130 5908 6057 15762	10695 8271 11248 24786	35000	
	subtotal									

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue

LOCATION: 424 Wythe Avenue, Brooklyn

BIDDER: TSM Construction Corp. / Long Island Concrete Inc. a Joint Venture

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
07 5300	<u>Membrane Roofing and Roof Insulation</u> EPDM roofing membrane w/4" rigid insulation Flashing at skylights	3365 112	sf lf	8 45	28520 5040	18 64.21	64170 7270	92690 12310
	subtotal							105000
07 6200	<u>Sheet Metal Work</u> Aluminum flashing at roof perimeter Aluminum flashing at windows Aluminum flashing at interior part of skylight SS flashing at building base	313 332 112 313	lf lf lf lf	10 10 10 10	3150 5520 1120 3150	13.20 14.00 12.46 12.00	4157 4728 395 3780	7307 13248 2515 6930
	subtotal							30,000
07 7100	<u>Roof Specialties and Accessories</u> Scupper Leader	4 100	ea lf	600 40	2400 4000	800 54	3200 5400	5600 9400
	subtotal							15,000
07 8100	<u>Sprayed Fire Resistive Materials</u> 1-1/2" cementitious spray applied fireproofing on columns Intumescent ignition barrier at interior walls	900 960	sf sf	2 1.5	1800 1140	1.5 1.78	1350 1710	3150 2850
	subtotal							6,000
07 8413	<u>Firestops and Smoke seals</u> Firestops and Smoke seals	—	ls	1.00	1.00	1.00	1.00	9000
	subtotal							9,000
07 9200	<u>Joint Sealers</u> Joint sealers	—	ls	1.00	1.00	1.00	1.00	11000
	subtotal							11,000
08 1113	<u>Steel Doors and Frames</u> F & I H.M. Insulated Doors, Frames Hardware	2	ea	300	2600	800	1600	4200

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue

LOCATION: 424 Wythe Avenue, Brooklyn

BIDDER: TSM Construction Corp / Long Island Concrete Inc a Joint Venture

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
	H. M. door saddle	2	ea	300	600	200	400	1000
	48"x18" louver	3	ea	300	900	300	900	1800
	subtotal							7000
08 3600	Sectional Overhead Doors	2	ea	17000	34000	9500	19000	53000
	F & I Roll Up Doors, insulated - 13'w.X 14'h.+ Misc. Mtl. Supports							43000
	subtotal							
08 4550	Translucent Linear Channel Glazing System	1259	sf	250	314750	75.65	95250	410000
	Channel Glass Windows							410,000
	subtotal							
08 6200	Plastic Unit Skylights	7	ea	2460	17220	1000	7000	24220
	Skylights- 4'0x4'0- thermoformed acrylic							7730
	Galvanized wiremesh 1"x1" protection screen	7	ea	704	4930	400	2800	8050
	Pre-fabricated aluminum curb w/insulation 1' high	7	ea	400	2800	750	5250	40000
	subtotal							
09 9000	Painting and Finishing	305	lf	4	1220	5.03	1535	2755
	Paint of aluminum C-channel 1'5"H							19245
	Clear Sealed Concrete	3565	sf	3	10695	2.40	8555	22000
	subtotal							
23 0513	23000 HVAC							
	Common Motors Requirements for HVAC Equipment							
	Motor starters		ea					
	Exhaust Fans-- Start / Stop (shut-off)		ea					
	Thermostat		ea					
	CO sensor		ea					
	Motorized damper control		ea					
	Certification / Calibration / Instruction - Approvals		ls					
	Misc. control requirements		ls					
	subtotal							22442

SEE ATTACHED
FLOOR PLAN



NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

ACS SYSTEM ASSOCIATES, INC.

160 West Lincoln Avenue
Mt. Vernon, NY 10550

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
LOCATION: 424 Wythe Avenue, Brooklyn
BIDDER:

CONTRACTOR BID BREAKDOWN FORM

FMS ID NUMBER: **HWK029B**

CLIENT AGENCY: Dept. of Transportation

CSI Number	Description	Quantity	Unit	Unit Cost of		Total Cost of		Total Cost:	
				Material	Labor	Material	Labor	Materials and Labor	
	H. M. door saddle		ea						
	48"x18" louver		ea						
	subtotal								
08 3600	<u>Sectional Overhead Doors</u>								
	F & I Roll Up Doors, insulated - 13'w.X 14'h.+ Misc. Mtl. Supports		ea						
	subtotal								
08 4550	<u>Translucent Linear Channel Glazing System</u>								
	Channel Glass Windows		sf						
	subtotal								
08 6200	<u>Plastic Unit Skylights</u>								
	Skylights- 4'0"x4'0"- thermoformed acrylic		ea						
	Galvanized wiremesh 1"x1" protection screen		ea						
	Pre-fabricated aluminum curb w/insulation 1' high		ea						
	subtotal								
09 9000	<u>Painting and Finishing</u>								
	Paint of aluminum C-channel 1'5"H		lf						
	Clear Sealed Concrete		sf						
	subtotal								
23000	<u>HVAC</u>								
23 0513	<u>Common Motors Requirements for HVAC Equipment</u>								
	Motor starters	3	ea	660	760	1,980	2,280	4,260	
	Exhaust Fans-- Start / Stop (shut-off)	3	ea	150	200	450	600	1,050	
	Thermostat	6	ea	450	650	2,700	3,900	6,600	
	CO sensor	6	ea	150	450	900	2,400	3,300	
	Motorized damper control	6	ea	250	480	1,500	2,880	4,380	
	Certification / Calibration / Instruction - Approvals	1	ls	-	450	-	450	450	
	Misc. control requirements	1	ls	600	1,200	600	1,200	1,800	
	subtotal							22,140	

FMS ID NUMBER: HWK029B

CLIENT AGENCY: Dept. of Transportation

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue

LOCATION: 424 Wythe Avenue, Brooklyn

BIDDER: JIM Construction Corp / Long Island Concrete, Inc a Joint Venture

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost of Materials and Labor
23 0593	<u>Testing, Adjusting, and Balancing for HVAC</u> Air balance adjustments and reports		ls					7500
	subtotal							
23 3300	<u>Air Duct Accessories</u> Galvanized steel ductwork, including plenum Tie-in to existing system Motorized damper 48"x18" Motorized damper Louver 48"x18" Wire mesh screen 16" high roof curb Misc. HVAC requirements		lbs ea ea ea ea sf ea ls					45000
	subtotal							
23 3423	<u>HVAC Power Ventilators, Fans</u> Exhaust Fans 2000 cfm, 1/2 hp Equipment handling rigging		ea ls					14000
	subtotal							
23 8239	<u>Unit Heaters</u> Unit Heater 5 kw, 17100 btuh, 530 cfm		ea					13500
	subtotal							
26 0519	<u>26000 Electrical</u> <u>Low Voltage Electrical Power Conductors and Cables</u> 500 MCM (Feeders) # 3/0 Wire (Feeders) # 1/0 Wire (Feeders) # 1/0 Wire (Grounding) # 4 Wire (Feeders) # 12 Wire (Branch Circuitry) # 12 Wire (Mechanical)		lf lf lf lf lf lf lf					

SEE ATTACHED SHEET

ACS SYSTEM ASSOCIATES, INC.

160 West Lincoln Avenue
Mt. Vernon, NY 10550

NEW YORK CITY DEPARTMENT OF
DESIGN - CONSTRUCTION

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
LOCATION: 424 Wythe Avenue, Brooklyn
BIDDER:

CONTRACTOR BID BREAKDOWN FORM

FMS ID NUMBER: HWK029B

CLIENT AGENCY: Dept. of Transportation

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
23 0593	<u>Testing, Adjusting, and Balancing for HVAC</u> Air balance adjustments and reports	1	ls	1,500	1,500	6,000	6,000	7,500
	subtotal							7,500
23 3300	<u>Air Duct Accessories</u> Galvanized steel ductwork, including plenum Tie-in to existing system Motorized damper 48"x18" Motorized damper Louver 48"x18" Wire mesh screen 16" high roof curb Misc. HVAC requirements	600 8 3 3 3 18 3 1	lbs ea ea ea ea sf ea ls	6 250 600 600 600 15 200 2,500	3,600 2,000 1,800 1,800 1,800 270 600 2,500	11 750 1,200 1,200 1,200 15 340 6,000	6,600 6,000 3,600 3,600 3,600 270 1,020 6,000	10,200 8,000 5,400 5,400 5,400 540 1,620 8,500 45,060
	subtotal							
23 3423	<u>HVAC Power Ventilators, Fans</u> Exhaust Fans 2000 cfm, 1/2 hp Equipment handling, rigging	3 1	ea ls	1,500 1,000	3,900 1,000	2,600 2,100	7,800 2,100	11,700 3,100 14,800
	subtotal							
23 8239	<u>Unit Heaters</u> Unit Heater 5 kw, 17100 btuh, 530 cfm	10	ea	750	7,500	1,000	10,000	17,500
	subtotal							17,500
26 0519	<u>26000 Electrical</u> <u>Low Voltage Electrical Power Conductors and Cables</u> 500 MCM (Feeders) # 3/0 Wire (Feeders) # 1/0 Wire (Feeders) # 1/0 Wire (Grounding) # 4 Wire (Feeders) # 12 Wire (Branch Circuitry) # 12 Wire (Mechanical)		If If If If If If					
	TOTAL HVAC							107,000

Handwritten notes:
ATTN: CONTRACTOR
500 401 6000

Core Electric

Kay Bowen

NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
 LOCATION: 424 Wythe Avenue, Brooklyn
 BIDDER:

CONTRACTOR BID BREAKDOWN FORM

FMS ID NUMBER: HWK0295

CLIENT AGENCY: Dept. of Transportation

CSI Number	Description	Quantity	Unit	Unit Cost of		Total Cost of		Total Cost:	
				Material	Labor	Material	Labor	Materials and Labor	
23 0593	Tasting, Adjusting, and Balancing for HVAC Air balance adjustments and reports		ls						
	subtotal								
23 3300	Air Duct Accessories Galvanized steel ductwork, including plenum Tie-in to existing system Motorized damper 48"x18" Motorized damper Lower 48"x18" Wire mesh screen 16" high roof curb Misc. HVAC requirements		lbs ea ea ea ea sf ea ls						
	subtotal								
23 3423	HVAC Power Ventilators, Fans Exhaust Fans 2000 cfm, 1/2 hp Equipment handling rigging		ea ls						
	subtotal								
23 8239	Unit Heaters Unit Heater 5 kw, 17100 btuh, 530 cfm		ea						
	subtotal								
26 0519	26000 Electrical Low Voltage Electrical Power Conductors and Cables 500 MCM (Feeders) # 3/0 Wire (Feeders) # 1/0 Wire (Feeders) # 1/0 Wire (Grounding) # 4 Wire (Feeders) # 12 Wire (Branch Circuitry) # 12 Wire (Mechanical)		lf lf lf lf lf lf lf						
	subtotal								
						2700	6.25	1875	4575
						600	3.50	2100	1200
						240	2.50	600	540
						240	2.50	600	540
						1500	2.00	3000	3000
						3200	1.192	3814	2764
						1140	1.192	1359	8292

CONTRACTOR BID BREAKDOWN FORM

FMS ID NUMBER: HWK029B

CLIENT AGENCY: Dept. of Transportation



PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
 LOCATION: 424 Wythe Avenue, Brooklyn
 ADDRESS:

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
	# 12 Wire (Fire Alarm)	500	lf	1.19	95	1.192	596	691
	# 12 Wire (Lighting)	2000	lf	1.19	380	1.192	2384	2764
	1-pair # 16 (Fire Alarm)	2000	lf	1.30	2600	1.40	2800	5400
	1-pair # 18 (Fire Alarm)	1000	lf	1.20	1200	1.30	1300	2500
	subtotal							* 29185
26 0526	Grounding and Bonding for Electrical Systems Included in 260519	1	EA	600	600	1160	1160	1760
26 0529	Hangers and Support for Electrical Systems Panel Mounting Assembly	1	ea	380	380	1160	1160	1540
	subtotal							* 3300
26 0533	Raceways and Boxes for Electrical Systems							
	Wire Trough	1	ea	300	300	447	447	747
	4" RGS (Feeders)	50	lf	13.50	675	56.62	2831	3506
	2" EMT (Feeders)	40	lf	2.40	96	27.-	1080	1176
	3/4" RGS (Lighting)	500	lf	1.65	825	13.41	6705	7530
	3/4" RGS (Fire Alarm)	1000	lf	1.65	1650	13.41	13410	15060
	3/4" EMT Conduit (Branch Circuitry)	1400	lf	1.60	2240	12.00	16800	19040
	3/4" EMT Conduit (Grounding)	100	lf	1.60	160	12.00	1200	1360
	3/4" EMT Conduit (Mechanical)	1000	lf	1.60	1600	12.00	12000	13600
	3/4" EMT Conduit (Lighting)	500	lf	1.60	800	12.00	6000	6800
	subtotal							* 55250
26 2416	Panelboards							
	400 Amp Service Switch	1	ea	1400	1400	2080	2080	3480
	225 Amp Panelboard	2	ea	1600	3200	2900	5800	9000
	Tap to Existing Service	1	ls	1000	1000	4172	4172	5172
	subtotal							* 18018

CONTRACTOR BID BREAKDOWN FORM

FMS ID NUMBER: HWK029B

CLIENT AGENCY: Dept. of Transportation

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue

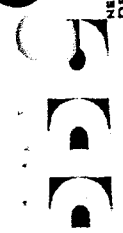
LOCATION: 424 Wythe Avenue, Brooklyn

BIDDER:



Core Electric
Ray Brown
NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

CSI Number	Description	Quantity	Unit	Unit Cost of		Total Cost of		Total Cost of	
				Material	Labor	Material	Labor	Materials and Labor	
26 2726	Wiring Devices								
	Remote Control Station	1	ea	300	1192	300	1192		1492
	Meter	1	ea	2000	1192	2000	1192		3192
	200 Amp NEMA 1 Disconnect Switch	2	ea	600	894	1200	1788		2988
	30 Amp NEMA 1 Disconnect Switch (FA System)	1	ea	125	300	125	300		425
	Photocell	1	ea	120	200	120	200		320
	3-way Light Switch	2	ea	300	200	600	400		1000
	Single Receptacle	3	ea	280	290	840	870		1710
	Duplex Receptacle	3	ea	320	290	960	870		1830
	Special Purpose Receptacle	3	ea	335	447	999	1341		2340
	Roll-up Door (F.B.O.)	2	ea	250	447	500	894		1394
	<u>Mechanical Requirements</u>								
	Unit Heater	10	ea	350	1490	3500	14900		18400
	Motorized Damper	2	ea	125	447	315	1341		1716
	Exhaust Fans	3	ea	125	447	375	1341		1716
	Gas Alarm Controller (F.B.O.)	1	ea	200	596	200	596		796
	Special Pump	1	ea	150	596	150	596		746
	subtotal								40065
26 5100	Interior Lighting								
	Lighting Fixture Type "A" - LED	8	ea	300	290	2400	2320		4720
	Exit Sign	2	ea	270	290	540	580		1120
	subtotal								5840
26 5600	Exterior Lighting								
	Lighting Fixture Type "B" - LED	6	ea	300	365	1800	2190		3990
	subtotal								3990
28 3111	Digital, Addressable Fire Alarm System								
	Fire Alarm Control Panel	1	ea	5838	3129	5838	3129		8967
	Manual Pull Station	2	ea	600	447	1200	894		2094



PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue

LOCATION: 424 Wythe Avenue, Brooklyn

BIDDER: TJM Construction Corp / Long Island Concrete Inc. a Joint Venture

SOX TO PROTECT ATTACHED SHEET AT A WALL

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost of Materials and Labor
	Strobe Light		ea					
	Smoke Detector		ea					
	Programming/Testing/Fees		ls					
	Vibration Isolation/Seismic Restraints		ls					
	Miscellaneous Electrical Work		ls					
	subtotal							\$ 189,500
31 1000	Site Preparation							
	10'h. Debris Netting Fence	450	lf	10	4500	20	9000	13500
	Erosion and sediment control	1000	sf	5	5000	0	6000	11000
	Stabilized 20'x50' construction entrance	250	lf	4	1000	0	1500	2500
	Straw bale dike	1	loc	100	100	100	100	200
	Inlet protection							
	subtotal							
	Site Improvements							
	Iron picket fence on concrete curb/ foundation	524	lf	120	62880	140	73360	136240
	Footing	13	cy	150	1950	300	3900	5850
	Concrete	4210	sf					
	Formwork	1616	lb					
	Reinforcing	2	ea	4000	8000	2000	4000	12000
	20' double swing gate	2	ea	600	1200	800	1600	2800
	3' pedestrian gate	2	ea	600	1200	800	1600	2250
	Bollard	124	sf	10	1250	8	1000	2760
	Concrete ramp	23	lf	80	1840	40	920	2160
	Railing at ramp		ls	1100	1100	1100	1000	
	Miscellaneous Sitework							
	subtotal							
	Landscaping							
	Protect trees on South 5th street	5	ea	200	1000	400	2000	3000
	Trees Paid Into Parks Tree Fund@ Sidewalk	5	ea	600	3000	1000	5000	8000
	subtotal							205000

CONTRACTOR BID BREAKDOWN FORM

FMS ID NUMBER: HWK029B
 CLIENT AGENCY: Dept. of Transportation

Core Electric
LAY POWER
 NEW YORK CITY DEPARTMENT OF DESIGN + CONSTRUCTION

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
 LOCATION: 424 Wythe Avenue, Brooklyn
 BIDDER:

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
	Sirebe Light	2	ea	500	1000	596	1192	2192
	Smoke Detector	6	ea	300	1800	447	2682	4482
	Programming/Testing/Fees	1	ls	8000	8000	5075	5075	13075
	Vibration Isolation/Seismic Restraints	1	ls	300	300	145	145	445
	Miscellaneous Electrical Work	1	ls	2000	2000	596	596	2596
	subtotal							3385
31 1000	Site Preparation							
	10'h. Debris Netting Fence		lf					
	Erosion and sediment control		sf					
	Stabilized 20'x50' construction entrance		lf					
	Straw bale dike		loc					
	Inlet protection							
	Site Improvements							
	Iron picket fence on concrete curb/ foundation		lf					
	Footing		cy					
	Concrete		sf					
	Formwork		lb					
	Reinforcing		ea					
	20' double swing gate		ea					
	3' pedestrian gate		ea					
	Bollard		sf					
	Concrete ramp		lf					
	Railing at ramp		ls					
	Miscellaneous Sitework							
	Landscaping		ea					
	Protect trees on South 5th street		ea					
	Trees Paid Into Parks Tree Fund @ Sidewalk							
	subtotal							

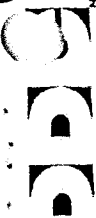
Electrical Total 189,500

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue

LOCATION: 424 Wythe Avenue, Brooklyn

BIDDER: TSM Construction Corp / Long Island Concrete, Inc. a Joint Venture

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost of Materials and Labor
31 2100	Earthwork							
	Mass Site Cut & Fill + Rough & Fine Grading	4000	sf	1.85	7400	1.50	6000	13400
	Open Conc. Trench @ Fence + Gravel	125	lf	30	3750	40.00	5000	8750
	Pit & Trench Excavation for building footing	265	cy	20	5300	25.00	6650	11950
	Excavation/Backfill (Trenching) for electrical conduit	13	lf	20	260	40	520	780
	Pit & Trench Excavation for trench drain	20	cy	40	800	40	800	1600
	Pit & Trench Excavation for storm pipe	128	cy	40	5120	50	6400	11520
	subtotal							48000
32 1216	Asphaltic Concrete Paving							
	Asphalt Paving For Truck Parking	19950	sf	5.08	101346	6.5	129675	231021
	Patch Asphalt Paving 2' After Install. New Conc. Curb	1215	sf	6	7290	8	9720	17010
	subtotal							248031
32 1313	321313 Sidewalk and Street Paving							
	Concrete Sidewalk	9597	sf	6	57582	7.68	73705	131300
	Pedestrian ramps	4	loc	600	2400	400	1600	2200
	25' drop curb w/2.5' splays for trucks	1	loc	700	700	800	800	1500
	subtotal							135000
32 1416	321416 Concrete Curbs and Pavements							
	Concrete Curb - Steel Faced	405	lf	40	16200	39	15800	32000
	subtotal							32000
33 0513	330513 Precast Concrete Drainage Structures							
	Remove drainage trough	1	ea	100	100	300	400	700
	New drainage trough 47' long	1	ea	750	750	850	950	1600
	Site Storm Manholes	3	ea	2000	6000	1700	5100	11100
	Pre cast grade catch basin	3	ea	1500	4500	1700	5100	9600
	subtotal							23000



NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue

LOCATION: 424 Wythe Avenue, Brooklyn

BIDDER: TSM Construction Corp / Long Island Concrete, Inc. a Joint Venture

CONTRACTOR BID BREAKDOWN FOR

FMS ID NUMBER: HWK029B

CLIENT AGENCY: Dept. of Transportation

CSI Number	Description	Quantity	Unit	Unit Cost of		Total Cost of		Unit Cost of		Total Cost of		Total Cost:	
				Material	Labor	Material	Labor	Material	Labor	Material	Labor	Materials and Labor	Labor
33 4100	334100 Storm Drainage Systems	1	ea	100	400	100	400	400	400	400	400	500	500
	Cleanout	123	lf	140	1514	17500	18925	18925	18925	18925	18925	30425	30425
	Trench drain	1	ea	1500	2200	1500	2200	2200	2200	2200	2200	3700	3700
	Replace open grade catch basin	56	lf	70	90	3920	5040	5040	5040	5040	5040	9960	9960
	Site Storm Piping	119	lf	60	80	7140	9520	9520	9520	9520	9520	10960	10960
	DIP 10"	113	lf	35	30	3955	7910	7910	7910	7910	7910	11865	11865
	DIP 8"	7	ea	200	1500	1400	10500	10500	10500	10500	10500	11900	11900
	DIP 6"												
	Site Storm Connect To existing												90,000
	subtotal												2,908,000
	TOTAL CONTRACT 1 - GENERAL CONSTRUCTION WORK												

**A. PROJECT REFERENCES - SIMILAR CONTRACTS COMPLETED BY THE BIDDER
TJM Construction Corp.**

List all contracts substantially completed within the last 4 years similar to the contract being awarded, 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 & Telephone Number	Architect / Engineer Reference & Telephone Number if different from owner
Westchester Community College WCC-11-904 Technology Bldg. Window Replace. Valhalla, NY 10595	Prime	\$ 833	6/2012	Westchester Community College Kevin Garvey Director Physical Plant (914) 606-6940	KG&D Architects Daniel J Jaconetti Jr. (914) 666-5900
SUNY New Paltz Contract #1990833 Replacement Curtainwalls, storefronts & Exterior Doors Bouton Hall SUNY New Paltz, New Paltz, NY	Prime	\$ 322	6/2012	SUNY New Paltz Michael Weatherly Architectural Designer Design & Construction (845) 257-3949	SUNY New Paltz Michael Weatherly Architectural Designer Design & Construction (845) 257-3949
State University of New York Stony Brook Staller Center for the Arts Curtain Wall Replacement	Prime	\$ 774.9	12/2011	State University of New York Stony Brook Tom Hansen (631) 632-3068	Superstructures Neville Kermani (212) 505-1133 Ext 1340
Herricks UFSD Capital Projects 2009 Window Replacement	Prime	\$ 1,929.7	8/2010	Herricks UFSD James Brown Director of Facilities (516) 305-7805	McDonald & Monterose Peter Monterose (315) 738-7063
SUNY Downstate Medical Center SUNYDMC Project #04-240 Replacement of windows @ west side only of Bldgs 811 & 825 New York Avenue	Prime	\$ 575.00	8/2010	SUNY Downstate Medical Center Charles Reed (718) 270-2394	Superstructures Neville Kermani (212) 505-1133 Ext 1340

**A. PROJECT REFERENCES - SIMILAR CONTRACTS COMPLETED BY THE BIDDER
TJM Construction Corp.**

List all contracts substantially completed within the last 4 years similar to the contract being awarded, 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 & Telephone Number	Architect / Engineer Reference & Telephone Number if different from owner
Brooklyn Navy Yard Development Corp. Building #275 Window Replacement	Prime	\$ 667.0	12/2009	Brooklyn Navy Yard Developmkt Corp. Kirby Mendardy (718) 907-5959	Erik Sun Architect (718) 422-4996
New York Police Dept. Removal & Replacement of Metal Windows & Screens at Highway Unit #2, 6th, 25th, 50th 66th & 113th Precincts	Prime	\$ 1,504.0	10/2008	NYPD Ron Kunicki (718) 270-3715	NYPD Ron Kunicki (718) 270-3715
Hempstead UFSD Window, Curtainwall, Exterior Door Replacement Contract 6-HHS-6 Hempstead High School	Prime	\$ 2,946	8/2008	Hempstead UFSD John Reinhardt Jr. (516) 318-9449	Cannon Design William Zografos (716) 774-3272
Jamaica Performing Arts Center PV502-L 153-10 Jamaica Avenue Queens, NY	Prime	\$ 10,000	4/2008	NYC Dept. of Design & Construction Michael Nastasi (718) 391-1174	WASA Len Franco (212) 420-1160
Lexington School for the Deaf Aircraft Noise Abatement Project Facility Window Replacement 30th Avenue & 79th Street Jackson Heights, Queens 11370	Prime	\$ 2,785	11/2006	Port Authority of NY & NJ Anthony Vero (718) 533-4278	LAN Associates Peter Manouvelos (845) 615-0350

**A. PROJECT REFERENCES - SIMILAR CONTRACTS COMPLETED BY THE BIDDER
TJM Construction Corp.**

List all contracts substantially completed within the last 4 years similar to the contract being awarded, 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 & Telephone Number	Architect / Engineer Reference & Telephone Number if different from owner
Port Washington UFSD Salem Elementary School - Additions / Alterations Newbury Road Port Washington, NY	Prime	\$ 7,700.0	9/2004	Eric Vonderhorst Director of Facilities (516) 767-4313	Spector Group John Machovec (516) 365-4240
Newark International Airport Terminal A Relifing	Prime	\$ 3,100.0	12/2003	Port Authority of NY & NJ Tishman Construction Corp. Owner's Representative Jim Durkin (212) 708-6743	STSC Consulting David Miller (203) 857-0765
Hunts Point Youth Facility Manida Street Bronx, NY	Prime	\$ 3,800	9/2001	NYC Dept. of Design & Construction Owner's Representative STV Construction Services Joe Falqueee (212) 614-7648	Castro Blanco / Piscineri Assoc Thomas Hanrahan (212) 989-6026

**C. PROJECT REFERENCES - PENDING CONTRACTS NOT YET STARTED BY THE BIDDER
TJM Construction Corp.**

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

NONE

Project & Location	Contract Type	Contract Amount (\$000)	Date Scheduled to Start	Owner Reference & Telephone Number	Architect / Engineer Reference & Telephone Number if different from owner

A. PROJECT REFERENCES - SIMILAR CONTRACTS COMPLETED BY THE BIDDER

Long Island Concrete, Inc.

List all contracts substantially completed within the last 4 years similar to the contract being awarded, 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 & Telephone Number	Architect / Engineer Reference & Telephone Number if different from owner
330 Hudson Street 330 Hudson Street New York, NY	Sub	4,968,000	Nov-13	Beacon Capital Partners LLC 646-810-6400	Brennan Beer Gorman Architects, LLP 212-888-7663
Theater for A New Audience 262 Ashland Place Brooklyn, NY 11217	Sub	\$ 4,243,000	Jun-12	New Yor Economic Development Corp 212-619-5000	Lagan Engineering 212-497-5400
Museum of Moving Image 36-01 35th Avenue Astoria, NY 11106	Sub	\$ 8,150,000.0	Mar-11	Museum of Moving Image 718-777-6888	Lesser Architectural 718-643-6656
Rolex Corporate Facility 12-16 43rd Avenue Long Island City, NY 11101	Sub	\$ 7,379,000.0	17-Dec	RLIC Realty 718-752-9180	Lagan Engineering 212-888-7663
FAA Tower LaGuardia Airport Queens, NY	Sub	\$ 4,847,000.00	28-Aug	Port Authority of NY/NJ 212-502-2200	Federal Aviation Commission 718-553-3002

**B. PROJECT REFERENCES - CONTRACTS CURRENTLY UNDER CONSTRUCTION BY THE BIDDER
Long Island Concrete, Inc.**

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/Eng Reference & Tel. No. if different from owner
Convent of the Sacred Heart 401 East 91st Street New York, NY	Sub	\$1,935,000			Dec-14	Convent of the Sacred Heart	Severud Associates 212-986-3700
404 Park Avenue 404 Park Avenue New York, NY	Sub	\$ 1,259,000.00			Dec-14	404 Park Avenue Partners LLC	Zaskorski & Notaro Architects 212-239-7212
BJ's Wholesale Club 1752 Shore Parkway Brooklyn, NY	Sub	\$ 580,000.00			Nov-14		SBLM Architects 151 West 26th Street New York, NY 10001 212-995-5600
EOP - MTA Relocation & Jewel Box 1095 6th Avenue New York, NY	Sub	500,000			1-Sep	Blackstone Realty Group 212-583-5000	Moed de Armas & Shannon Architects 212-809-0100

**C. PROJECT REFERENCES - PENDING CONTRACTS NOT YET STARTED BY THE BIDDER
Long Island Concrete, Inc.**

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 & Telephone Number	Architect / Engineer Reference & Telephone Number if different from owner
COS 129 Spring Street 129 Spring Street New York, NY	Sub	\$ 540,000	Aug-14		Office AO Architecture PLLC 30 West 24th Street New York, NY 10010
NYPH Emergency Generator 515 East 70th Street New York, NY 10021	Sub	\$ 1,348,550	Aug-14		WSP Flack + Kurtz 512 7th Avenue New York, NY 10018 212-532-9600

**A. PROJECT REFERENCES - SIMILAR CONTRACTS COMPLETED BY THE BIDDER
TJM Construction Corp. / Long Island Concrete, Inc. a Joint Venture**

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

NONE

Project & Location	Contract Type	Contract Amount (\$000)	Date Completed	Owner Reference & Telephone Number	Architect / Engineer Reference & Telephone Number if different from owner

**C. PROJECT REFERENCES - PENDING CONTRACTS NOT YET STARTED BY THE BIDDER
 TJM Construction Corp. / Long Island Concrete, Inc. a Joint Venture**

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

NONE

Project & Location	Contract Type	Contract Amount (\$000)	Date Scheduled to Start	Owner Reference & Telephone Number	Architect / Engineer Reference & Telephone Number if different from owner

Qualification Form

Project ID: HWKF029B

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: TJM Construction Corp.
Name of Project: SUNY Stony Brook Staller Center for the Arts Curtainwall Replacement
Location of Project: SUNY Stony Brook Staller Center for the Arts

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

Name: Tom Hansen (SUNY Stony Brook)
Title: _____ Phone Number: (631) 632-3068

Brief description of work completed: Removal and replacement of existing curtainwall, entrances, acoustic tile ceilings, lighting and sprinklers

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

Amount of Contract: \$ 774,900 -

Date of Completion: August 2011

Name of Contractor: TJM Construction Corp.
Name of Project: Herricks UFSD, Capital Projects 2008
Location of Project: Various locations within the Herricks UFSD

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

Name: James Brown (Herricks UFSD)
Title: Director of Facilities Phone Number: (516) 305-7805

Brief description of work completed: Removal and replacement of windows.

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

Amount of Contract: \$ 1,557,000

Date of Completion: August 2010

Qualification Form

Project ID: HWKF029B

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: TJM Construction Corp

Name of Project: Westchester Community College Technology Building Windows Replacement

Location of Project: Grasslands Rd., Valhalla, New York 10595

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

Name: Daniel J. Jacconetti Jr.

Title: Architect Phone Number: (914) 666-5900

Brief description of work completed: Removal and replacement of all the windows and doors at the Technology Building of Westchester Community College

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

Amount of Contract: \$ 758,000 -

Date of Completion: June 2012

Name of Contractor: TJM Construction Corp

Name of Project: Governors Island Roof Systems & Restoration - Group A

Location of Project: Governors Island, New York

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

Name: (WASA) Douglas Emilio

Title: _____ Phone Number: (212) 420-1160

Brief description of work completed: Re-roofing, wood restoration and painting of six (6) landmark status structures on Governors Island.

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

Amount of Contract: \$ 1,764,000 -

Date of Completion: December 2009

Qualification Form

Project ID: HWKF029B

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: TJM Construction Corp

Name of Project: Jamaica Performing Arts Center - PV502-L

Location of Project: 155-10 Jamaica Avenue, Queens, NY

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

Name: Michael Nastasi

Title: Program Manager (DDC) Phone Number: (718) 391-1174

Brief description of work completed: Rehabilitation of a landmark status, one-hundred-fifty-year-old church into a state-of-the-art performing arts center for the City of New York

Was the work performed as a prime or a subcontractor: (pm) ~~Subcontractor~~ Prime

Amount of Contract: In excess of \$10,000,000

Date of Completion: April 2008

Name of Contractor: TJM Construction Corp

Name of Project: Lexington School For the Deaf Aircraft Noise Abatement Project

Location of Project: Lexington School for the Deaf 30th Avenue & 75th Street, Jackson Heights, New York

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

Name: Peter Manouvelos (LAN Associates)

Title: Architect Phone Number: (845) 615-0350

Brief description of work completed: Removal of asbestos and replacement of over 260 existing windows and doors, and HVAC modifications.

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

Amount of Contract: \$2,785,000

Date of Completion: November 2006

Qualification Form

Project ID: HWKF029B

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: TJM Construction Corp

Name of Project: Hunts Point Youth Facility - HUNTS POINT

Location of Project: Manida Street, Bronx, New York

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

Name: Joe Palqueee (STV)

Title: _____ Phone Number: (631) 901-2559

Brief description of work completed: Construction of a gymnasium project including sidewalk for the New York City Department of Design & Construction.

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

Amount of Contract: \$ 3,800,000 -

Date of Completion: September 2001

Name of Contractor: TJM Construction Corp

Name of Project: Port Washington UFSD - Salem Elementary School - Additions/Alterations

Location of Project: Salem Elementary School Newbury Rd, Port Washington, New York

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

Name: John Machovec (Spector Group)

Title: Asst. Project Manager Phone Number: (516) 365-4240

Brief description of work completed: Rehabilitation of existing elementary school, including demolition, asbestos abatement, excavation, concrete, masonry, steel, roofing, interior finishes, specialty equipment, a new elevator and extensive site reconstruction.

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

Amount of Contract: \$ 7,700,000 -

Date of Completion: September 2004

Thomas J. Perno
25 Birch Lane
New Hyde Park, New York 11040
516.327.4815

WORK EXPERIENCE

Long Island Concrete, Inc., Long Island City, New York 2002 – Present
President

Execution of all aspects of management to generate new clientele, facilitate architectural planning and document negotiation, and ensure overall successful completion of project objectives. Commercial Concrete and Masonry up to \$15 million USD.

L.I.C. Construction Company, Long Island City, New York 1995 – 2002
Project Executive

Synchronization of general management activities to produce project achievement according to contracted specifications as indicated by client. Commercial Concrete and Masonry up to \$1 million USD.

Activator Construction Company, Flushing, New York 1992 – 1995
Superintendent

Coordination of all activity at job site location including general labor, supply and delivery, health and safety assurance, and maintenance of scheduling deadlines.

Aries Construction, Manhattan, New York 1990 – 1992
Labor Foreman

Responsible for ensuring quality daily labor according to state standards on job site location. Liaise with union representatives and employees of all trades.

EDUCATION

New York University, Manhattan, New York 1989 – 1992
Bachelor of Science in Construction Management

Alfred University, Alfred, New York 1985 – 1987
Associate of Science in Construction Management and Technology

ACTIVITIES

United States Air Force, Present rank of Senior Master Sergeant 1992 – Present
United States Air Force Non-Commissioned Officer Academy 1991 – 1992
United States Marine Corps, Final rank of Lance Corporal 1990 – 1998

Qualification Form

Project ID: PVN463ABC-R

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: Long Island Concrete

Name of Project: Zerega Erms Station

Location of Project: 501 Zerega Avenue Bronx, NY

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

Name: City of New York

Title: _____ Phone Number: (718) 391 1000

Brief description of work completed: Excavation, masonry & Concrete

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

Amount of Contract: \$1,250,000.00

Date of Completion: August 2013

Name of Contractor: Long Island Concrete

Name of Project: Theater for a New Audience

Location of Project: 262 Ashland Place Brooklyn, NY 11217

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

Name: New York Economic Development Corp.

Title: _____ Phone Number: (212) 619 5000

Brief description of work completed: Superstructure & Foundation

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

Amount of Contract: \$4,243,000

Date of Completion: June 2012

Qualification Form

Project ID: PVN463ABC-R

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: Long Island Concrete

Name of Project: Museum of Moving Image

Location of Project: 36-01 35th Avenue Astoria, NY 11106

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

Name: Museum of Moving Image

Title: _____ Phone Number: (718) 777 6888

Brief description of work completed: Excavation & Concrete, Superstructure

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

Amount of Contract: \$ 8,150,000.00

Date of Completion: March 2011

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: _____

1

Tax ID #: 46-1385761

APT E-
PIN#: 85014B0134

Contract # 1 - General Construction Work

SCHEDULE B - MWBE Utilization Plan

Part I: MWBE Participation Goals

Part I to be completed by contracting agency

Contract Overview

APT E-Pin # 85014B0134 FMS Project ID#: HWKF029B

Project Title/Agency 121 Plymouth Relocation of Paint Warehouse to 424 Wythe Avenue

PIN # 8502013TR0006C

Bid/Proposal
Response Date: TUESDAY, JULY 1, 2014

Contracting Agency Department of Design and Construction

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

Contact Person Norma Negrón Title MWBE Liaison & Compliance Analyst

Telephone # (718) 391-1502 Email negronn@ddc.nyc.gov

Project Description (attach additional pages if necessary)

This project consists of construction of a one story (CMU) paint storage building on grade.

MWBE Participation Goals for Services

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

Prime Contract Industry: Construction

Group	Percentage
<u>Unspecified *</u>	<u>10 %</u>
OR	
<u>Black American</u>	<u>UNSPECIFIED %</u>
<u>Hispanic American</u>	<u>UNSPECIFIED %</u>
<u>Asian American</u>	<u>UNSPECIFIED %</u>
<u>Women</u>	<u>UNSPECIFIED %</u>
Total Participation Goals	10 %

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 #: 46-1385761

APT E-

PIN#: 85014B0134

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 #	<u>46-1385761</u>	FMS Vendor ID #	
Business Name	<u>TJM Construction Corp / Long Island Concrete, Inc a Joint Venture</u>	Contact Person	<u>Robert Slockover</u>
Address	<u>301 Mill Rd - Suite U-5, Newletts, NY 11557</u>		
Telephone #	<u>(516) 773-9800</u>	Email	<u>rsbuilds@aol.com</u>

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
<p>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.</p> <p>Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation.</p>	\$ 2,908,000 — X	10%	= \$ 290,800 — 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
<p>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.</p> <p>Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation.</p>	\$ X		= \$ Line 3

Section III: MWBE Utilization Plan: How Proposer/Bidder Will Fulfill MWBE Participation Goals. Please review the Notice to Prospective Contractors for more information on how to obtain credit for MWBE participation. Check applicable box. The Proposer or Bidder will fulfill the MWBE Participation Goals:

As an MWBE Prime Contractor that will self-perform and/or subcontract to other MWBE 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-MWBE firms will not be credited towards fulfillment of MWBE Participation Goals. Please check all that apply to Prime Contractor:
 MBE WBE

As a Qualified Joint Venture with an MWBE partner, in which the value of the MWBE partner's participation and/or the value of any work subcontracted to other MWBE firms is at least the amount located on Lines 2 or 3 above, as applicable. The value of any work subcontracted to non MWBE firms will not be credited towards fulfillment of MWBE Participation Goals.

As a non MWBE Prime Contractor that will enter into subcontracts with MWBE 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 MWBE status? % ~~15~~ 18% *Prnt 325%* *Prnt 7/16/14*

Enter brief description of the type(s) and dollar value of subcontracts for all any services you plan on subcontracting if awarded this contract. For each item, indicate whether the work is designed 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	100,000	12-18-14	4
2. Structural Steel	90,000	12-18-14	1
3. Electrical	169,000	12-18-14	2
4. Carpentry	150,000	10-21-14	11
5. Roofing	100,000	12-18-14	1
6. Architectural	7,000	12-18-14	1
7. Chemical Cleaning	400,000	12-18-14	4
8. Plumbing	169,000	12-18-14	2
9.			
10. Structural	30,000	10-1-14	14
11.			
12.			
13.			
14. SOBRIDGE	995,000	12-18-14	
15.			
16.			
17.			

✓ Scopes of Subcontract Work

Section V: Vendor Certification and Required Affirmations

I hereby:

- acknowledge my understanding of the MWBE 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;
- affirm that the information supplied in support of this MWBE Utilization Plan is true and correct;
- agree, if awarded this Contract, to comply with the MWBE 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
- agree and affirm that it is a material term of this Contract that the Vendor will award the total dollar value of the MWBE Participation Goals to certified MBEs and/or WBEs, unless a full waiver is obtained or such goals are modified by the Agency; and

and affirm, if awarded this Contract, to make all reasonable, good faith efforts to meet the MWBE 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: [Signature] Date: July 1, 2014
 Print Name: Robert Stecher Title: Managing Partner

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: TJM Construction Corp

DDC Project Number: HWKF029B

Company Size: Ten (10) employees or less
 Greater than ten (10) employees

Company has previously worked for DDC YES NO

2. Type(s) of Construction Work

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

3. Experience Modification Rate:

The Experience Modification Rate (EMR) is a rating generated by the National Council of Compensation Insurance (NCCI). This rating is used to determine the contractor's premium for worker's compensation insurance. The 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
2013-2014	1	
2012-2013	.98	
2011-2012	.95	

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 (i.e., fatality, or hospitalization of three or more employees).

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.

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

YEAR	TOTAL NUMBERS OF HOURS WORKED BY EMPLOYEES	INCIDENT RATE
2013	4472	0
2012	4589	0
2011	5776	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

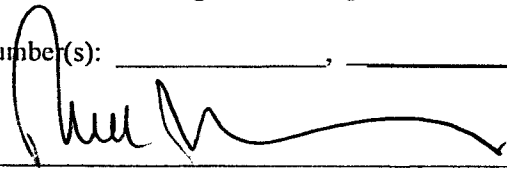
5. Safety Performance on Previous DDC Project(s)

YES NO Contractor previously audited by the DDC Office of Site Safety.
 DDC Project Number(s): PV502-L, _____, _____

YES NO Accident on previous DDC Project(s). *See next page for explanation*
 DDC Project Number(s): PV502-L, _____, _____

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: 7/11/14

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

Title: President

5. Safety Performance on Previous DDC Project(s)

Accident on Previous DDC Project(s).

Gilbert Gonzalez was a mason tender employed by our masonry subcontractor on the Jamaica Performing Arts Center Project (PV502-L). On November 4, 2004, Mr. Gonzalez was struck on his hard hat by a piece of brick that fell from above, possibly from an existing masonry arch being renovated by his firm. Mr. Gonzalez did not appear hurt; however, as a safety precaution, his supervisor took him to the hospital for a check up. As a result of this accident, Mr. Gonzalez is suing TJM Construction Corp. as well as the construction manager PMS Construction Management Corp. on that project.

Although Mr. Gonzalez claims to be permanently disabled, the law firm representing our insurance carrier has been able to discover that he has worked in a similar capacity for other masonry contractors since being "injured" on the Jamaica Performing Arts Center project. The law firm has also discovered that he has other similar law suits resulting from on-the-job accidents and an automobile accident, all claiming to be permanently disabled. Although the accident occurred over eight (8) years ago, the suit has not been settled and is being handled by the law firm retained by our insurance carrier.

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: TJM Construction Corp./Long Island Concrete, Inc. a Joint Venture
Bidder's Address: 801 Mill Rd - Suite U-5, Hewlett, NY 11557
Bidder's Telephone Number: (516) 773-9800
Bidder's Fax Number: (516) 773-9898
Date of Bid Opening: July 1, 2014
Project ID: HWFR029B

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, 9th Floor, New York, New York 10007.

Date of Submission: May 1, 2014
By: _____
(Signature of Partner or corporate officer)
Print Name: Robert Slochover

} See below

(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: Robert Slochover

DIRECTIONS: Please execute two originals (both with original signature).
Please forward directly to the agency (not M.O.C.S.).



Certificate of No Change Form

- Please submit two completed forms. Copies will not be accepted.
- Please send both copies to the agency that requested it, unless you are advised to send it directly to the Mayor's Office of Contract Services (MOCS).
- A materially false statement willfully or fraudulently made in connection with this certification, and/or the failure to conduct appropriate due diligence in verifying the information that is the subject of this certification, may result in rendering the submitting entity non-responsible for the purpose of contract award.
- A materially false statement willfully or fraudulently made in connection with this certification may subject the person making the false statement to criminal charges

I, Robert Slochover, being duly sworn, state that I have read
Enter Your Name

and understand all the items contained in the vendor questionnaire and any submission of change as identified on page one of this form and certify that as of this date, these items have not changed. I further certify that, to the best of my knowledge, information and belief, those answers are full, complete, and accurate; and that, to the best of my knowledge, information, and belief, those answers continue to be full, complete, and accurate.

In addition, I further certify on behalf of the submitting vendor that the information contained in the principal questionnaire(s) and any submission of change identified on page two of this form have not changed and have been verified and continue, to the best of my knowledge, to be full, complete and accurate.

I understand that the City of New York will rely on the information supplied in this certification as additional inducement to enter into a contract with the submitting entity.

Vendor Questionnaire *This section is required.*

This refers to the vendor questionnaire(s) submitted for the vendor doing business with the City.

Name of Submitting Entity: TJM Construction Corp/Long Island Concrete, Inc a Joint Venture

Vendor's Address: 301 Mill Rd - Suite U-5, Newletts, New York 11557

Vendor's EIN or TIN: 46-1385761 Requesting Agency: New York City Department of Design & Construction

Are you submitting this Certification as a parent? (Please circle one) Yes No

Signature date on the last full vendor questionnaire signed for the submitting vendor: 8/1/14

Signature date on change submission for the submitting vendor: N/A

Principal Questionnaire

This section refers to the most recent principal questionnaire submissions.



	Principal Name	Date of signature on last full Principal Questionnaire	Date(s) of signature on submission of change
1	Robert Slochover	5/1/14	N/A
2	Thomas Perno	5/1/14	N/A
3			
4			
5			
6			

Check if additional changes were submitted and attach a document with the date of additional submissions.

Certification This section is required.

This form must be signed and notarized. Please complete this twice. Copies will not be accepted.

Certified By:

Robert Slochover
Name (Print)

Managing Partner
Title

TJM Construction Corp./Long Island Concrete, Inc a Joint Venture
Name of Submitting Entity

[Signature]
Signature

6/27/14
Date

Notarized By:

Cindy Henggeler
Notary Public

Nassau
County License Issued

01HE6143717
License Number

Sworn to before me on: June 27, 2014
Date

CINDY HENGGELER
Notary Public, State of New York
No. 01HE6143717
Qualified in Nassau County
Commission Expires: April 17, 2018

**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:

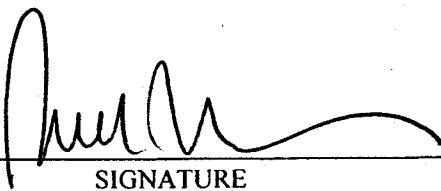
[Please Check One]

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: Hewlett, New York
6/27, 2014



SIGNATURE

Robert Slochover

PRINTED NAME

Managing Partner

TITLE

Sworn to before me this
27th day of June, 2014

Cindy Henggeler

Notary Public

CINDY HENGGELER
Notary Public, State of New York
No. 01HE6143717
Qualified in Nassau County
Commission Expires: April 17, 2018

Dated: June 27, 2014

NYC AGENCY RENOVATION & REHAB CITY OWNED BUILDINGS/STRUCTURES

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.

Sl. The undersigned, as a Contractor or Subcontractor (hereinafter Contractor) on the Project known as 121 Plymouth Relocation and located at 424 Wythe Avenue, Brooklyn, NY (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 and local trust agreements as set forth in the Project Labor Agreement and this Agreement 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.

Dated: August 26, 2014
NYC DDC
(Name of CM; GC; Contractor or Higher Level Subcontractor)

JJM Construction Corp / Long Island Concrete, Inc. a Joint Venture
(Name of Contractor or subcontractor)
MANAGING PARTNER
(Authorized Officer & Title)

301 Mill Rd Suite U-5, Hewlett, NY 11557
(Address)
Ph: (516) 773-9800
Fax: (516) 773-9898
(Phone) (Fax)

Contractor's State License # _____

SUSAN LOVE BRANCH
Notary Public, State of New York
Qualified in Queens County
No. 01BR6251701
My Comm. Expires 11-21-2015

Sworn to before me this 26 day of August, 2009 2014
Susan Love Branch
Notary Public

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

June 20, 2014

ADDENDUM No. # 1

FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

HWKF029B

**121 PLYMOUTH STREET PAINT WAREHOUSE RELOCATION TO
424 WYTHE AVENUE CONSTRUCTION**


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

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

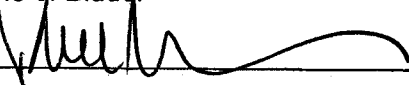
1. **Bidders' Questions and Responses to Questions:**
See Attachment A.
2. **Revisions to the Bid Booklet:**
See Attachment B.
3. **Revisions to Volume 2:**
See Attachment C.
4. **Revisions to Drawings:**
See Attachment D.

THIS ADDENDUM MUST BE SIGNED BY ALL BIDDERS AND ATTACHED TO THEIR BIDS.

If additional information is required, please contact the Department of Design and Construction, Contract Section at (718) 391-2200, (718) 391-1283, or by fax at (718) 391-2615.


David Resnick, R.A. **FOR DR**
Deputy Commissioner

Tom Construction Corp / Long Island Concrete, Inc. a Joint Venture
Name of Bidder

By: 

**BID BOND 1
FORM OF BID BOND**

KNOW ALL MEN BY THESE PRESENTS. That we, TJM Construction Corp. / Long Island Concrete, Inc. A Joint Venture
301 Mill Road, Hewlett, NY 11557

hereinafter referred to as the "Principal", and Vigilant Insurance Company
15 Mountain View Road, Warren, NJ 07059

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 Proposal Price

(\$ 10% of P.P.), 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 Project ID: HWKF029B
121 Plymouth Paint Warehouse Relocation to 424 Wythe Building Construction. Construction of One Story CMU Storage Building on Grade. 424 Wythe Avenue, Brooklyn, NY 11211. E-PIN: 85014B0134/DDC PIN: 8502013TR0006C.

Contract No. 1 - General Construction Work

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 24th day of June, 2014.

(Seal)

TJM Construction Corp. / Long Island Concrete, Inc. A Joint Venture (L.S.)

Principal

By: 

(Seal)

Vigilant Insurance Company

Surety

By: 

Susan Lupski, Attorney-In-Fact

BID BOND 3

ACKNOWLEDGEMENT OF PRINCIPAL, IF A CORPORATION

State of _____ County of _____ ss:
On this _____ day of _____, _____, before me personally came
_____ to me known, who, being by me duly sworn, did depose and say that he
resides at _____
that he is the _____ of _____
the corporation described in and which executed the foregoing instrument; that he knows the seal of said
corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the
directors of said corporation, and that he signed his name thereto by like order.

Notary Public

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

Acknowledgment by Principal

State of New York }
 }
County of Nassau }

On this 27 day of June 2014, personally appeared
before me Robert Stochover member of the firm/Joint Venture
of TJM Construction Corp. / Long Island Concrete, Inc. A Joint Venture to me known and known to me to be
the individual described in and who executed the foregoing instrument and he
acknowledged to me that he executed the same for an on behalf of said firm/Joint
Venture.

Sworn before me this 27 day of June 2014

Cindy Henggeler

Notary Public

CINDY HENGGELER
Notary Public, State of New York
No. 01NE0143717
Qualified in Nassau County
Commission Expires: April 17, 2018

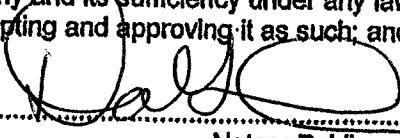
ACKNOWLEDGMENT OF SURETY COMPANY

STATE OF NEW YORK }
COUNTY OF NASSAU } SS

On this June 24, 2014, before me personally came Susan Lupski

to me known, who, being by me duly sworn, did depose and say; that he/she resides in Nassau County, State of New York, that he/she is the Attorney-in-Fact of the Vigilant Insurance Company

the corporation described in which executed the above instrument; that he/she knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order; and the affiant did further depose and say that the Superintendent of Insurance of the State of New York, has, pursuant to Section 1111 of the Insurance Law of the State of New York, issued to Vigilant Insurance Company (Surety) his/her certificate of qualification evidencing the qualification of said Company and its sufficiency under any law of the State of New York as surety and guarantor, and the propriety of accepting and approving it as such; and that such certificate has not been revoked.


.....
Notary Public

NY acknowledgement

DANA GRANCE
Notary Public, State of New York
No. 01GR609912B
Qualified in Nassau County
Commission Expires September 22, 2015



**Chubb
Surety**

**POWER
OF
ATTORNEY**

**Federal Insurance Company
Vigilant Insurance Company
Pacific Indemnity Company**

**Attn: Surety Department
15 Mountain View Road
Warren, NJ 07059**

Know All by These Presents, That FEDERAL INSURANCE COMPANY, an Indiana corporation, VIGILANT INSURANCE COMPANY, a New York corporation, and PACIFIC INDEMNITY COMPANY, a Wisconsin corporation, do each hereby constitute and appoint Thomas Bean, George O. Brewster, Colette R. Chisholm, Susan Lupski, Gerard S. Macholz, Camille Maitland, Robert T. Pearson and Rita Sagistano of Uniondale, New York

each as their true and lawful Attorney-in-Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.
In Witness Whereof, said FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY have each executed and attested these presents and affixed their corporate seals on this **27th** day of **March, 2013**.

Dawn M. Chloros, Assistant Secretary

David B. Norris, Jr., Vice President



STATE OF NEW JERSEY

ss.

County of Somerset

On this **27th** day of **March, 2013** before me, a Notary Public of New Jersey, personally came Dawn M. Chloros, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Dawn M. Chloros, being by me duly sworn, did depose and say that she is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed with authority of the By-Laws of said Companies; and that she signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that she is acquainted with David B. Norris, Jr., and knows him to be Vice President of said Companies; and that the signature of David B. Norris, Jr., subscribed to said Power of Attorney is in the genuine handwriting of David B. Norris, Jr., and was thereto subscribed by authority of said By-Laws and in deponent's presence.

Notarial Seal



**KATHERINE J. ADELAAR
NOTARY PUBLIC OF NEW JERSEY
No 231685
Commission Expires July 16, 2014**

Notary Public

CERTIFICATION

Extract from the By-Laws of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

I, Dawn M. Chloros, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

- (i) the foregoing extract of the By-Laws of the Companies is true and correct,
- (ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U.S. Treasury Department; further, Federal and Vigilant are licensed in the U.S. Virgin Islands, and Federal is licensed in American Samoa, Guam, Puerto Rico, and each of the Provinces of Canada except Prince Edward Island; and
- (iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this **June 24, 2014**



Dawn M. Chloros, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT ADDRESS LISTED ABOVE, OR BY Telephone (908) 903- 3493 Fax (908) 903- 3656 e-mail: surety@chubb.com

VIGILANT INSURANCE COMPANY

STATEMENT OF ASSETS, LIABILITIES AND SURPLUS TO POLICYHOLDERS

Statutory Basis

DECEMBER 31, 2013

(in thousands of dollars)

<u>ASSETS</u>		<u>LIABILITIES AND SURPLUS TO POLICYHOLDERS</u>	
Cash and Short Term Investments	\$ 3,964	Outstanding Losses and Loss Expenses	\$ 80,847
United States Government, State and Municipal Bonds	78,124	Unearned Premiums	23,521
Other Bonds	246,433	Ceded Reinsurance Premiums Payable	65,766
Stocks	26,285	Provision for Reinsurance	299
Other Invested Assets	411	Other Liabilities	32,630
TOTAL INVESTMENTS	355,217	TOTAL LIABILITIES	203,063
Premiums Receivable	98,372	Capital Stock	4,500
Other Assets	14,357	Paid-In Surplus	25,169
		Unassigned Funds	235,214
		SURPLUS TO POLICYHOLDERS	264,883
TOTAL ADMITTED ASSETS	\$ 467,946	TOTAL LIABILITIES AND SURPLUS TO POLICYHOLDERS	\$ 467,946

Investments are valued in accordance with requirements of the National Association of Insurance Commissioners.
At December 31, 2013, investments with a carrying value of \$10,300,338 were deposited with government authorities
as required by law.

State, County & City of New York, - ss:

Yvonne Baker, Assistant Secretary of the Vigilant Insurance Company
being duly sworn, deposes and says that the foregoing Statement of Assets, Liabilities and Surplus to Policyholders of said
Vigilant Insurance Company on December 31, 2013 is true and correct and is a true abstract of the Annual Statement of said
Company as filed with the Secretary of the Treasury of the United States for the 12 months ending December 31, 2013.

Subscribed and sworn to before me
this March 11, 2014.

Jeanette Shipsey
Notary Public

JEANETTE SHIPSEY
Notary Public, State of New York
No. 02SH5074142
Qualified in Nassau County
Commission Expires March 10, 2015

Yvonne Baker
Assistant Secretary

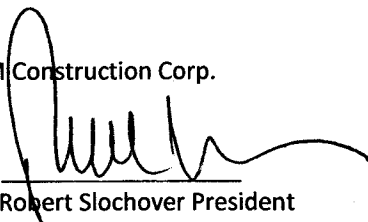
To: The City of New York Department of Design and Construction
Designation of Signatory & Attorney-in-Fact

Re: Project ID: HWKF029B
121 Plymouth Paint Warehouse Relocation to 424 Wythe Building Construction

Sir:

This will designate Robert Slochover to act as Attorney-in-Fact and Signatory to the above captioned proposal on behalf of the Joint Venture of TJM Construction Corp. and Long Island Concrete, Inc.

TJM Construction Corp.

By: 
Robert Slochover President

Long Island Concrete, Inc.

By: 
Thomas J. Perno President

STATE OF NEW YORK)
COUNTY OF Queens) ss:

On this 30th day of June 2014, before me personally came Robert Slochover to me known, who, being by me duly sworn, did depose and say for himself, that he is the President of TJM Construction Corp., the Corporation described in, and which executed the foregoing instrument; that he knows the seal of said Corporation; that the seal affixed to said instrument is such Corporate seal; that it was so affixed by order of the Board of Directors of said Corporation, and that he signed his name thereto by like order.


Notary Public

JENNIFER REYES
NOTARY PUBLIC-STATE OF NEW YORK
No. 01RE6233486
Qualified in Queens County
My Commission Expires 12/27/14

STATE OF NEW YORK)
COUNTY OF Queens) ss:

On this 30th day of June 2014, before me personally came Thomas J. Perno to me known, who, being by me duly sworn, did depose and say for himself, that he is the President of Long Island Concrete, Inc., the Corporation described in, and which executed the foregoing instrument; that he knows the seal of said Corporation; that the seal affixed to said instrument is such Corporate seal; that it was so affixed by order of the Board of Directors of said Corporation, and that he signed his name thereto by like order.


Notary Public

JENNIFER REYES
NOTARY PUBLIC-STATE OF NEW YORK
No. 01RE6233486
Qualified in Queens County
My Commission Expires 12/27/14

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 to learn more about the loan or contact 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.

**BID BOOKLET
PART A**

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PROJECT ID: HWKF029B

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 (718-391-2615).
 - (3) **VENDEX QUESTIONNAIRES:** Vendex Questionnaires, as well as detailed instructions, may be obtained at 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.

General Construction Contractor x YES NO

- (A) **EXPERIENCE REQUIREMENTS FOR THE BIDDER (PRIME CONTRACTOR):** The special experience requirements set forth below apply to the bidder. Compliance with such special experience requirements will be evaluated at the time of the bid.
- 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 meet the experience requirements set forth above, the bidder must complete and submit with its bid the Qualification Form set forth in this Bid Booklet. All information on the Qualification Form must be provided.
- (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: HWKF029B

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: _____

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: _____

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: _____

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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, by emailing DSBS at buyer@sbs.nyc.gov, by calling (212) 513-6356, or by visiting or writing DSBS at 110 William St., New York, New York, 10038, 7th floor. Eligible firms that have not yet been certified may contact DSBS in order to seek certification by visiting www.nyc.gov/getcertified, emailing MWBE@sbs.nyc.gov, or calling the DSBS certification helpline at (212) 513-6311. A firm that is certified as both an MBE and a WBE may be counted either toward the goal for MBEs or the goal for WBEs, but not both. No credit shall be given for participation by a graduate MBE or graduate WBE, as defined in Section 6-129(c)(20).

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

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

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

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

(b) To apply for a full or partial waiver of the **Participation Goals**, a bidder, proposer, or contractor, as applicable, must complete Part III (Page 5) of Schedule B and submit such request no later than seven (7) calendar days prior to the date and time the bids, proposals, or Task Orders are due, in writing to the Agency by email at poped@ddc.nyc.gov or via facsimile at (718) 391-1886. Bidders, proposers, or contractors, as applicable, who have submitted requests will receive an Agency response by no later than two (2) calendar days prior to the due date for bids, proposals, or Task Orders; provided, however, that if that date would fall on a weekend or holiday, an Agency response will be provided by close-of-business on the business day before such weekend or holiday date.

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

(d) Agency may grant a full or partial waiver of the Participation Goals to a bidder, proposer or contractor, as applicable, who demonstrates—before submission of the bid, proposal or Task Order, as applicable—that it has legitimate business reasons for proposing the level of subcontracting in its M/WBE Utilization Plan. In making its determination, Agency shall consider factors that shall include but not be limited to, whether the bidder, proposer or contractor, as applicable, has the capacity and the bona fide intention to perform the Contract without any subcontracting, or to perform the Contract without awarding the amount of subcontracts represented by the Participation Goals. In making such determination, Agency may consider whether the M/WBE Utilization Plan is consistent with past subcontracting practices of the bidder, proposer or contractor, as applicable, whether the bidder, proposer or contractor, as applicable, has made efforts to form a joint venture with a certified firm, and whether the bidder, proposer, or contractor, as applicable, has made good faith efforts to identify other portions of the Contract that it intends to subcontract.

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

- (i) The Contractor advertised opportunities to participate in the Contract, where appropriate, in general circulation media, trade and professional association publications and small business media, and publications of minority and women's business organizations;
- (ii) The Contractor provided notice of specific opportunities to participate in the Contract, in a timely manner, to minority and women's business organizations;
- (iii) The Contractor sent written notices, by certified mail or facsimile, in a timely manner, to advise MBEs or WBEs that their interest in the Contract was solicited;
- (iv) The Contractor made efforts to identify portions of the work that could be substituted for portions originally designated for participation by MBEs and/or WBEs in the M/WBE Utilization Plan, and for which the Contractor claims an inability to retain MBEs or WBEs;
- (v) The Contractor held meetings with MBEs and/or WBEs prior to the date their bids or proposals were due, for the purpose of explaining in detail the scope and requirements of the work for which their bids or proposals were solicited;
- (vi) The Contractor made efforts to negotiate with MBEs and/or WBEs as relevant to perform specific subcontracts, or act as suppliers or service providers;
- (vii) Timely written requests for assistance made by the Contractor to Agency's M/WBE liaison officer and to DSBS;
- (viii) Description of how recommendations made by DSBS and Agency were acted upon and an explanation of why action upon such recommendations did not lead to the desired level of participation of MBEs and/or WBEs.

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

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

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

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

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

PART B: MISCELLANEOUS

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

2. Pursuant to DSBS rules, construction contracts that include a requirement for an **M/WBE** Utilization Plan shall not be subject to the law governing Locally Based Enterprises set forth in Section 6-108.1 of the Administrative Code of the City of New York.

3. DSBS is available to assist contractors and potential contractors in determining the availability of MBEs and/or WBEs to participate as subcontractors, and in identifying opportunities that are appropriate for participation by MBEs and/or WBEs in contracts.

4. Prospective contractors are encouraged to enter into qualified joint venture agreements with MBEs and/or WBEs as defined by Section 6-129(c)(30).

5. By submitting a bid or proposal the Contractor hereby acknowledges its understanding of the M/WBE Program requirements set forth herein and the pertinent provisions of Section 6-129, and any rules promulgated thereunder, and if awarded this Contract, the Contractor hereby agrees to comply with the M/WBE Program requirements of this Contract and pertinent provisions of Section 6-129, and any rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract. The Contractor hereby agrees to make all reasonable, good faith efforts to solicit and obtain the participation of MBEs and/or WBEs to meet the required **Participation Goals**.

ARTICLE II. ENFORCEMENT

1. If Agency determines that a bidder or proposer, as applicable, has, in relation to this procurement, violated Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, Agency may disqualify such bidder or proposer, as applicable, from competing for this Contract and the Agency may revoke such bidder's or proposer's prequalification status, if applicable.

2. Whenever Agency believes that the Contractor or a subcontractor is not in compliance with Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to any **M/WBE** Utilization Plan, Agency shall send a written notice to the Contractor describing the alleged noncompliance and offering the Contractor an opportunity to be heard. Agency shall then conduct an investigation to determine whether such Contractor or subcontractor is in compliance.

3. In the event that the Contractor has been found to have violated Section 6-129, the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to, any **M/WBE** Utilization Plan, Agency may determine that one of the following actions should be taken:

- (a) entering into an agreement with the Contractor allowing the Contractor to cure the violation;
- (b) revoking the Contractor's pre-qualification to bid or make proposals for future contracts;
- (c) making a finding that the Contractor is in default of the Contract;
- (d) terminating the Contract;
- (e) declaring the Contractor to be in breach of Contract;
- (f) withholding payment or reimbursement;
- (g) determining not to renew the Contract;
- (h) assessing actual and consequential damages;

- (i) assessing liquidated damages or reducing fees, provided that liquidated damages may be based on amounts representing costs of delays in carrying out the purposes of the M/WBE Program, or in meeting the purposes of the Contract, the costs of meeting utilization goals through additional procurements, the administrative costs of investigation and enforcement, or other factors set forth in the Contract;
- (j) exercising rights under the Contract to procure goods, services or construction from another contractor and charge the cost of such contract to the Contractor that has been found to be in noncompliance; or
- (k) taking any other appropriate remedy.

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

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

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

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

Tax ID #: _____

APT E-
PIN#: 85014B0134

Contract # 1 - General Construction 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 # 85014B0134 FMS Project ID#: HWKF029B

Project Title/Agency 121 Plymouth Relocation of Paint Warehouse to 424 Wythe Avenue

PIN # 8502013TR0006C

Bid/Proposal

Response Date: TUESDAY, JULY 1, 2014

Contracting Agency Department of Design and Construction

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

Contact Person Norma Negron Title M/WBE Analyst

Telephone # (718) 391-1502 Email NegronN@ddc.nyc.gov

Project Description (attach additional pages if necessary)

This project consists of construction of a one story (CMU) paint storage building on grade with two pre-fabricated containers for combustible material.

M/WBE Participation Goals for Services

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

Prime Contract Industry: Construction

Group	Percentage
<u>Unspecified*</u>	<u>10 %</u>
or	
<u>Black American</u>	<u>UNSPECIFIED %</u>
<u>Hispanic American</u>	<u>UNSPECIFIED %</u>
<u>Asian American</u>	<u>UNSPECIFIED %</u>
<u>Women</u>	<u>UNSPECIFIED %</u>
Total Participation Goals	10 %

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.

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Tax ID #: _____

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 # _____	FMS Vendor ID # _____
Business Name _____	Contact Person _____
Address _____	
Telephone # _____	Email _____

Section II: M/WBE Utilization Goal Calculation: Check the applicable box and complete subsection.

PRIME CONTRACTOR ADOPTING AGENCY M/WBE PARTICIPATION GOALS				
<input 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
<p>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.</p> <p>Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation.</p>	\$ _____	X _____	= _____	\$ _____ 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
<p>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.</p> <p>Please review the Notice to Prospective Contractors for more information on how to obtain credit for M/WBE participation.</p>	\$ _____	X _____	= _____	\$ _____ Line 3

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? % _____

Enter brief description of the type(s) and dollar value of subcontracts for all any 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. _____
- 2. _____
- 3. _____
- 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 _____
Print Name _____

Date _____
Title _____

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 _____
 APT 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 _____

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 _____

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 _____

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: _____ Date: _____
 Print Name: _____ 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: _____ %

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: HWKF029B

121 Plymouth Paint Warehouse Relocation to 424 Wythe Building
Construction
424 Wythe Avenue
Brooklyn 11211

Name of Bidder: _____

Date of Bid Opening: _____

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

Place of Business of Bidder: _____

Bidder's Telephone Number: _____ Bidder's Fax Number: _____

Bidder's Email Address: _____

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 _____

Name and Home Address of President: _____

Name and Home Address of Secretary: _____

Name and Home Address of Treasurer:

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BID FORM

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

PROJECT ID: HWKF029B

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

LUMP SUM PRICE - Total price for all labor and material for all required work. 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
Material Sold and
Delivered

Total Price For
Labor

\$ _____ + \$ _____ Total Price for Work= \$ _____

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: _____

By: _____
(Signature of Partner or corporate officer)

Attest: _____ Secretary of Corporate Bidder
(Corporate Seal)

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

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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.
I 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 _____ ss:
_____ being duly sworn says:
I am the _____ of the above named corporation whose name is subscribed to and which executed
the foregoing bid. I reside at _____
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
_____ day of _____,

Notary Public

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 _____

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

Full Name of Bidder: _____
Address: _____
City: _____ State: _____ Zip Code: _____

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

By: _____
Signature:

Title: _____

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 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.

The list of subcontractors is to be submitted in a separate sealed envelope by completing the form on the next page entitled "Bidder's Identification of Subcontractors". This form provides for the identification of 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 so indicate on the form.

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 Section 6-129 of the Administrative Code of the City of New York, 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 Participation Goals identified in the M/WBE Utilization Plan, the bid will be non-responsive unless the bidder requests and obtains a full or partial waiver of the Participation Goals (M/WBE Utilization Plan, Part III) in advance of bid submission. For more information see Notice to All Prospective Contractors, Participation by Minority-Owned and Women-Owned Business Enterprises in City Procurement.

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)(e) 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: HWKF029B

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. PLUMBING CONTRACTOR:

_____ (Print Name)

Agreed Amount To Be Paid To Subcontractor: \$ _____

2. HVAC CONTRACTOR:

_____ (Print Name)

Agreed Amount To Be Paid To Subcontractor: \$ _____

3. ELECTRICAL CONTRACTOR:

_____ (Print Name)

Agreed Amount To Be Paid To Subcontractor: \$ _____

BIDDER'S SIGNATURE: The Bidder must sign this form in the space provided below:

Name of Bidder: _____

By: _____
Signature of Partner or Corporate Officer

Print Name: _____

Title: _____

BID BOND 1
FORM OF BID BOND

KNOW ALL MEN BY THESE PRESENTS. That we, _____

hereinafter referred to as the "Principal", and _____

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 _____

(\$ _____), 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 _____

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 _____ day of _____, _____.

(Seal)

Principal (L.S.)

By: _____

(Seal)

Surety

By: _____

BID BOND 3

ACKNOWLEDGEMENT OF PRINCIPAL, IF A CORPORATION

State of _____ County of _____ ss:
On this _____ day of _____, _____, before me personally came
_____ to me known, who, being by me duly sworn, did depose and say that he
resides at _____
that he is the _____ of _____
the corporation described in and which executed the foregoing instrument; that he knows the seal of said
corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the
directors of said corporation, and that he signed his name thereto by like order.

Notary Public

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

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BID BREAKDOWN

Submission: Bidders are advised that the requirement to submit a Bid Breakdown applies to this 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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PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
 LOCATION: 424 Wythe Avenue, Brooklyn
 BIDDER:

FMS ID NUMBER: HWK029B
 CLIENT AGENCY: Dept. of Transportation

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
CONTRACT 1 - GENERAL CONSTRUCTION WORK								
01 1000	<u>General Conditions</u> Mobilization		ls					
	subtotal							
02 2100	<u>Selective Removals & Demolition</u> Site Demolition							
	Sawcut existing asphalt pavement		lf					
	Remove Existing Paving On Site		sf					
	Remove Existing Sidewalk		sf					
	Remove Existing stone curb at South 6th. Street and Wythe Avenue		lf					
	Remove Existing concrete curb/wall for chain link fence		lf					
	Protection @ Existing Catch Basin		ea					
	Remove existing 10'h. Chain Link Fence		lf					
	Remove & Relocate existing Fuel Oil Tank		ls					
	Relocate existing Containers		ls					
	Remove Abandoned Piles & Foundations If Interference w/ New Foundations		ls					
	Remove chain link fence w/galvanized roof		sf					
	Mill existing asphalt		lf					
	Remove buried electrical conduits		ls					
	Misc. Site Demo							
	subtotal							
03 3000	<u>Cast-in Place Concrete</u> Concrete grade beam		cy					
	Concrete		sf					
	Formwork		lb					
	Reinforcing							
	Column footing							

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NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

CONTRACTOR BID BREAKDOWN FORM

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
LOCATION: 424 Wythe Avenue, Brooklyn
BIDDER:

FMS ID NUMBER: HWK029B
CLIENT AGENCY: Dept. of Transportation

CSI Number	Description	Quantity	Unit	Unit Cost of		Total Cost of		Total Cost:	
				Material	Labor	Material	Labor	Materials and Labor	
	Concrete		cy						
	Formwork		sf						
	Reinforcing		lb						
	Concrete SOG - 6"th. +6"Drainage Fill		sf						
	16" concrete curb/wall on site		lf						
	Concrete		cy						
	Formwork		sf						
	Reinforcing		lb						
	16" high roof curb for mechanical equipment		ea						
	Miscellaneous concrete		ls						
	subtotal								
04 2000	Unit Masonry								
	8"x16"Ground Faced CMU - Façade- 24'h.		sf						
	subtotal								
05 1200	Structural Steel								
	<u>Structural steel</u>								
	Steel beams		tns						
	Columns and posts		tns						
	Cross bridging		ls						
	Reinforcing at skylights L4 x 4 x 3/8		tns						
	Column base		ea						
	Moment connections		ea						
	Misc structure steel		ls						
	subtotal								
05 2100	Steel Joists								
	Steel Joists								
	28LH08		tns						
	16K4		tns						
	subtotal								

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NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

CONTRACTOR BID BREAKDOWN FORM

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
LOCATION: 424 Wythe Avenue, Brooklyn

FMS ID NUMBER: HWK029B

CLIENT AGENCY: Dept. of Transportation

BIDDER:

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
05 3100	<u>Steel Deck</u> Metal roof Deck		sf					
	subtotal							
05 5000	<u>Miscellaneous Metals</u> Aluminum "C" Channel 1.5"h. @ façade perimeter		lf					
	42"h. Steel Roof Railing		lf					
	Access gate		ea					
	Tube steel at swing doors		tns					
	6x4x3/8 Angle above roll up doors		lf					
	Galvanized hung lintels for windows		lf					
	Misc metals		ls					
	subtotal							
06 2000	<u>Carpentry</u> Carpentry							
	Plywood Applied To Interior Side Of Façade Wall on Z channels		sf					
	Blocking at skylights		lf					
	Blocking at roof perimeter		lf					
	subtotal							
07 1326	<u>Sheet Membrane Waterproofing</u> Liquid applied none permeable waterproof membrane		sf					
	subtotal							
07 2100	<u>Thermal Insulation</u> 3' rigid insulation at slab on grade		sf					
	4" rigid insulation at perimeter footing		sf					
	Drainage mat w/filter fabric		sf					
	3" spray applied wall insulation		sf					
	subtotal							

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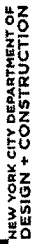
PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
 LOCATION: 424 Wythe Avenue, Brooklyn
 BIDDER:

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
07 5300	<u>Membrane Roofing and Roof Insulation</u>							
	EPDM roofing membrane w/4" rigid insulation		sf					
	Flashing at skylights		lf					
	subtotal							
07 6200	<u>Sheet Metal Work</u>							
	Aluminum flashing at roof perimeter		lf					
	Aluminum flashing at windows		lf					
	Aluminum flashing at interior part of skylight		lf					
	SS flashing at building base		lf					
	subtotal							
07 7100	<u>Roof Specialties and Accessories</u>							
	Scupper		ea					
	Leader		lf					
	subtotal							
07 8100	<u>Sprayed Fire Resistive Materials</u>							
	1-1/2" cementitious spray applied fireproofing on columns		sf					
	Intumescent ignition barrier at interior walls		sf					
	subtotal							
07 8413	<u>Firestops and Smoke seals</u>							
	Firestops and Smoke seals		ls					
	subtotal							
07 9200	<u>Joint Sealers</u>							
	Joint sealers		ls					
	subtotal							
08 1113	<u>Steel Doors and Frames</u>							
	F & I H.M. Insulated Doors, Frames Hardware		ea					

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FMS ID NUMBER: HWK029B

CLIENT AGENCY: Dept. of Transportation



PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
 LOCATION: 424 Wythe Avenue, Brooklyn
 BIDDER:

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
	H. M. door saddle		ea					
	48"x18" louver		ea					
	subtotal							
08 3600	<u>Sectional Overhead Doors</u>							
	F & I Roll Up Doors, insulated - 13'w.X 14'h.+ Misc. Mtl. Supports		ea					
	subtotal							
08 4550	<u>Translucent Linear Channel Glazing System</u>							
	Channel Glass Windows		sf					
	subtotal							
08 6200	<u>Plastic Unit Skylights</u>							
	Skylights- 4'0x4'0- thermoformed acrylic		ea					
	Galvanized wiremesh 1"x1" protection screen		ea					
	Pre-fabricated aluminum curb w/insulation 1' high		ea					
	subtotal							
09 9000	<u>Painting and Finishing</u>							
	Paint of aluminum C-channel 1'5"H		lf					
	Clear Sealed Concrete		sf					
	subtotal							
23 0513	<u>23000 HVAC</u>							
	<u>Common Motors Requirements for HVAC Equipment</u>							
	Motor starters		ea					
	Exhaust Fans-- Start / Stop (shut-off)		ea					
	Thermostat		ea					
	CO sensor		ea					
	Motorized damper control		ea					
	Certification / Calibration / Instruction - Approvals		ls					
	Misc. control requirements		ls					
	subtotal							

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PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
 LOCATION: 424 Wythe Avenue, Brooklyn
 BIDDER:

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
23 0593	<u>Testing, Adjusting, and Balancing for HVAC</u> Air balance adjustments and reports		ls					
	subtotal							
23 3300	<u>Air Duct Accessories</u> Galvanized steel ductwork, including plenum Tie-in to existing system Motorized damper 48"x18" Motorized damper Louver 48"x18" Wire mesh screen 16" high roof curb Misc. HVAC requirements		lbs ea ea ea ea sf ea ls					
	subtotal							
23 3423	<u>HVAC Power Ventilators, Fans</u> Exhaust Fans 2000 cfm, 1/2 hp Equipment handling rigging		ea ls					
	subtotal							
23 8239	<u>Unit Heaters</u> Unit Heater 5 kw, 17100 btuh, 530 cfm		ea					
	subtotal							
26 0519	<u>26000 Electrical</u> <u>Low Voltage Electrical Power Conductors and Cables</u> 500 MCM (Feeders) # 3/0 Wire (Feeders) # 1/0 Wire (Feeders) # 1/0 Wire (Grounding) # 4 Wire (Feeders) # 12 Wire (Branch Circuitry) # 12 Wire (Mechanical)		lf lf lf lf lf lf lf					

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FMS ID NUMBER: **HWK029B**
 CLIENT AGENCY: **Dept. of Transportation**

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
 LOCATION: 424 Wythe Avenue, Brooklyn
 BIDDER:

CSI Number	Description	Quantity	Unit	Unit Cost of		Total Cost of		Total Cost:	
				Material	Labor	Material	Labor	Materials and Labor	
	# 12 Wire (Fire Alarm)		lf						
	# 12 Wire (Lighting)		lf						
	1-pair # 16 (Fire Alarm)		lf						
	1-pair # 18 (Fire Alarm)		lf						
	subtotal								
26 0526	<u>Grounding and Bonding for Electrical Systems</u> Included in 260519								
26 0529	<u>Hangers and Support for Electrical Systems</u> Panel Mounting Assembly		ea						
	subtotal								
26 0533	<u>Raceways and Boxes for Electrical Systems</u> Wire Trough		ea						
	4" RGS (Feeders)		lf						
	2" EMT (Feeders)		lf						
	3/4" RGS (Lighting)		lf						
	3/4" RGS (Fire Alarm)		lf						
	3/4" EMT Conduit (Branch Circuitry)		lf						
	3/4" EMT Conduit (Grounding)		lf						
	3/4" EMT Conduit (Mechanical)		lf						
	3/4" EMT Conduit (Lighting)		lf						
	subtotal								
26 2416	<u>Panelboards</u> 400 Amp Service Switch		ea						
	225 Amp Panelboard		ea						
	Tap to Existing Service		ls						
	subtotal								

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NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

CONTRACTOR BID BREAKDOWN FORM

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
LOCATION: 424 Wythe Avenue, Brooklyn
BIDDER:

FMS ID NUMBER: HWK029B
CLIENT AGENCY: Dept. of Transportation

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
26 2726	<u>Wiring Devices</u>							
	Remote Control Station		ea					
	Meter		ea					
	200 Amp NEMA 1 Disconnect Switch		ea					
	30 Amp NEMA 1 Disconnect Switch (FA System)		ea					
	Photocell		ea					
	3-way Light Switch		ea					
	Single Receptacle		ea					
	Duplex Receptacle		ea					
	Special Purpose Receptacle		ea					
	Roll-up Door (F.B.O.)		ea					
	<u>Mechanical Requirements</u>							
	Unit Heater		ea					
	Motorized Damper		ea					
	Exhaust Fans		ea					
	Gas Alarm Controller (F.B.O.)		ea					
	Special Pump		ea					
	subtotal							
26 5100	<u>Interior Lighting</u>							
	Lighting Fixture Type "A" - LED		ea					
	Exit Sign		ea					
	subtotal							
26 5600	<u>Exterior Lighting</u>							
	Lighting Fixture Type "B" - LED		ea					
	subtotal							
28 3111	<u>Digital, Addressable Fire-Alarm System</u>							
	Fire Alarm Control Panel		ea					
	Manual Pull Station		ea					

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NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

CONTRACTOR BID BREAKDOWN FORM

FMS ID NUMBER: HWK029B
CLIENT AGENCY: Dept. of Transportation

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
LOCATION: 424 Wythe Avenue, Brooklyn
BIDDER:

CSI Number	Description	Quantity	Unit	Unit Cost of		Total Cost of		Total Cost of	
				Material	Labor	Material	Labor	Material	Labor
	Strobe Light		ea						
	Smoke Detector		ea						
	Programming/Testing/Fees		ls						
	Vibration Isolation/Seismic Restraints		ls						
	Miscellaneous Electrical Work		ls						
	subtotal								
31 1000	Site Preparation								
	10'h. Debris Netting Fence		lf						
	Erosion and sediment control		sf						
	Stabilized 20'x50' construction entrance		lf						
	Straw bale dike		loc						
	Inlet protection								
	Site Improvements								
	Iron picket fence on concrete curb/ foundation		lf						
	Footing		cy						
	Concrete		sf						
	Formwork		lb						
	Reinforcing		ea						
	20' double swing gate		ea						
	3' pedestrian gate		ea						
	Bollard		ea						
	Concrete ramp		sf						
	Railing at ramp		lf						
	Miscellaneous Sitework		ls						
	Landscaping								
	Protect trees on South 5th street		ea						
	Trees Paid Into Parks Tree Fund@ Sidewalk		ea						
	subtotal								

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NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

CONTRACTOR BID BREAKDOWN FORM

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
LOCATION: 424 Wythe Avenue, Brooklyn
BIDDER:

FMS ID NUMBER: HWK029B
CLIENT AGENCY: Dept. of Transportation

CSI Number	Description	Quantity	Unit	Unit Cost of		Total Cost of		Total Cost:	
				Material	Labor	Material	Labor	Materials and Labor	
31 2100	Earthwork Mass Site Cut & Fill + Rough & Fine Grading Open Conc. Trench @ Fence + Gravel Pit & Trench Excavation for building footing Excavation/Backfill (Trenching) for electrical conduit Pit & Trench Excavation for trench drain Pit & Trench Excavation for storm pipe		sf lf cy lf cy cy						
	subtotal								
32 1216	Asphaltic Concrete Paving Asphalt Paving For Truck Parking Patch Asphalt Paving 2' After Install. New Conc. Curb		sf sf						
	subtotal								
32 1313	321313 Sidewalk and Street Paving Concrete Sidewalk Pedestrian ramps 25' drop curb w/2.5' splays for trucks		sf loc loc						
	subtotal								
32 1416	321416 Concrete Curbs and Pavements Concrete Curb - Steel Faced		lf						
	subtotal								
33 0513	330513 Precast Concrete Drainage Structures Remove drainage trough New drainage trough 47' long Site Storm Manholes Pre cast grade catch basin		ea ea ea ea						
	subtotal								

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NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

PROJECT: 121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
LOCATION: 424 Wythe Avenue, Brooklyn
BIDDER:

CONTRACTOR BID BREAKDOWN FORM

FMS ID NUMBER: HWK029B
CLIENT AGENCY: Dept. of Transportation

CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
33 4100	334100 Storm Drainage Systems							
	Cleanout		ea					
	Trench drain		lf					
	Replace open grade catch basin		ea					
	Site Storm Piping							
	DIP 10"		lf					
	DIP 8"		lf					
	DIP 6"		lf					
	Site Storm Connect To existing		ea					
	subtotal							
TOTAL CONTRACT 1 - GENERAL CONSTRUCTIO WORK								

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DESCRIPTION AND LOCATION OF WORK:

121 Plymouth Paint Warehouse Relocation to 424 Wythe Building Construction
 424 Wythe Avenue
 Brooklyn, NY 11211
 E-PIN: 85014B0134 / DDC PIN: 8502013TR0006C

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: **TUESDAY, JULY 1, 2014**

BIDS MUST BE CLOCKED IN PRIOR TO BID OPENING

PLACE TO SUBMIT:

Department of Design and Construction, Contract Section (located behind Security Desk)
 30-30 Thomson Avenue – First Floor, Long Island City, NY 11101

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:	TUESDAY, JULY 1, 2014 @ 2:00 pm
	LATE BIDS WILL NOT BE ACCEPTED

PRE-BID CONFERENCE:

PLACE	Plymouth Paint Warehouse Relocation 424 Wythe Avenue Brooklyn, NY 11211
DATE AND HOUR	TUESDAY, JUNE 17, 2014 AT 10:00AM
MANDATORY OR OPTIONAL	OPTIONAL

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 excess of \$1,000,000.00. Performance and Payment Security shall each be in an amount equal to 100% of the Contract Price

AGENCY CONTACT PERSON:

Lorraine Holley, 30-30 Thomson Avenue – First Floor, Long Island City, Queens, NY 11101
 Telephone (718) 391-2200 or (718) 391-2601 Fax: (718) 391-2615

**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: _____

DDC Project Number: _____

Company Size: _____ Ten (10) employees or less
 _____ Greater than ten (10) employees

Company has previously worked for DDC _____ YES _____ NO

2. Type(s) of Construction Work

TYPE OF WORK	LAST 3 YEARS	THIS PROJECT
General Building Construction	_____	_____
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	_____	_____
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	<u>INTRASTATE RATE</u>	<u>INTERSTATE RATE</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

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 (i.e., fatality, or hospitalization of three or more employees).

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.

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

YEAR	TOTAL NUMBERS OF HOURS WORKED BY EMPLOYEES	INCIDENT RATE
_____	_____	_____
_____	_____	_____
_____	_____	_____

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: _____

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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) Similar 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 – SIMILAR CONTRACTS COMPLETED BY THE BIDDER

List all contracts substantially completed within the last 4 years similar to the contract being awarded, 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

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

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.

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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: _____
Bidder's Address: _____
Bidder's Telephone Number: _____
Bidder's Fax Number: _____
Date of Bid Opening: _____
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, 9th Floor, New York, New York 10007.

Date of Submission: _____

By: _____
(Signature of Partner or corporate officer)

Print Name: _____

(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: _____

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DIRECTIONS: Please execute two originals (both with original signature).
Please forward directly to the agency (not M.O.C.S.).



Certificate of No Change Form

- Please submit two completed forms. Copies will not be accepted.
- Please send both copies to the agency that requested it, unless you are advised to send it directly to the Mayor's Office of Contract Services (MOCS).
- A materially false statement willfully or fraudulently made in connection with this certification, and/or the failure to conduct appropriate due diligence in verifying the information that is the subject of this certification, may result in rendering the submitting entity non-responsible for the purpose of contract award.
- A materially false statement willfully or fraudulently made in connection with this certification may subject the person making the false statement to criminal charges

I, _____, being duly sworn, state that I have read
Enter Your Name

and understand all the items contained in the vendor questionnaire and any submission of change as identified on page one of this form and certify that as of this date, these items have not changed. I further certify that, to the best of my knowledge, information and belief, those answers are full, complete, and accurate; and that, to the best of my knowledge, information, and belief, those answers continue to be full, complete, and accurate.

In addition, I further certify on behalf of the submitting vendor that the information contained in the principal questionnaire(s) and any submission of change identified on page two of this form have not changed and have been verified and continue, to the best of my knowledge, to be full, complete and accurate.

I understand that the City of New York will rely on the information supplied in this certification as additional inducement to enter into a contract with the submitting entity.

Vendor Questionnaire *This section is required.*

This refers to the vendor questionnaire(s) submitted for the vendor doing business with the City.

Name of Submitting Entity: _____

Vendor's Address: _____

Vendor's EIN or TIN: _____ Requesting Agency: _____

Are you submitting this Certification as a parent? (Please circle one) Yes No

Signature date on the last full vendor questionnaire signed for the submitting vendor: _____

Signature date on change submission for the submitting vendor: _____

Principal Questionnaire

This section refers to the most recent principal questionnaire submissions.



Principal Name	Date of signature on last full Principal Questionnaire	Date(s) of signature on submission of change
1		
2		
3		
4		
5		
6		

Check if additional changes were submitted and attach a document with the date of additional submissions.

Certification *This section is required.*

This form must be signed and notarized. Please complete this twice. Copies will not be accepted.

Certified By:

Name (Print)

Title

Name of Submitting Entity

Signature

Date

Notarized By:

Notary Public

County License Issued

License Number

Sworn to before me on: _____
Date

DIRECTIONS: Please execute two originals (both with original signature).
Please forward directly to the agency (not M.O.C.S.).



Certificate of No Change Form

- Please submit two completed forms. Copies will not be accepted.
- Please send both copies to the agency that requested it, unless you are advised to send it directly to the Mayor's Office of Contract Services (MOCS).
- A materially false statement willfully or fraudulently made in connection with this certification, and/or the failure to conduct appropriate due diligence in verifying the information that is the subject of this certification, may result in rendering the submitting entity non-responsible for the purpose of contract award.
- A materially false statement willfully or fraudulently made in connection with this certification may subject the person making the false statement to criminal charges

I, _____, being duly sworn, state that I have read
Enter Your Name

and understand all the items contained in the vendor questionnaire and any submission of change as identified on page one of this form and certify that as of this date, these items have not changed. I further certify that, to the best of my knowledge, information and belief, those answers are full, complete, and accurate; and that, to the best of my knowledge, information, and belief, those answers continue to be full, complete, and accurate.

In addition, I further certify on behalf of the submitting vendor that the information contained in the principal questionnaire(s) and any submission of change identified on page two of this form have not changed and have been verified and continue, to the best of my knowledge, to be full, complete and accurate.

I understand that the City of New York will rely on the information supplied in this certification as additional inducement to enter into a contract with the submitting entity.

Vendor Questionnaire *This section is required.*

This refers to the vendor questionnaire(s) submitted for the vendor doing business with the City.

Name of Submitting Entity: _____

Vendor's Address: _____

Vendor's EIN or TIN: _____ Requesting Agency: _____

Are you submitting this Certification as a parent? (Please circle one) Yes No

Signature date on the last full vendor questionnaire signed for the submitting vendor: _____

Signature date on change submission for the submitting vendor: _____

Principal Questionnaire

This section refers to the most recent principal questionnaire submissions.



Principal Name	Date of signature on last full Principal Questionnaire	Date(s) of signature on submission of change
1		
2		
3		
4		
5		
6		

Check if additional changes were submitted and attach a document with the date of additional submissions.

Certification *This section is required.*

This form must be signed and notarized. Please complete this twice. Copies will not be accepted.

Certified By:

Name (Print)

Title

Name of Submitting Entity

Signature

Date

Notarized By:

Notary Public

County License Issued

License Number

Sworn to before me on: _____

Date

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

PRINTED NAME

TITLE

Sworn to before me this
_____ day of _____, 20__

Notary Public

Dated:

CITY OF NEW YORK

DIVISION OF LABOR SERVICES

CONSTRUCTION EMPLOYMENT REPORT

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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 Subcontractor
- 1a. Are M/WBE goals attached to this project? Yes 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:
- Minority Owned Business Enterprise Locally Based Business Enterprise
 Women Owned Business Enterprise Emerging Business Enterprise
 Disadvantaged Business Enterprise
- 2a. If you are certified as an **MBE, WBE, LBE, EBE** or **DBE**, what city/state agency are you certified with? _____ 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
4. Is this project subject to a project labor agreement? Yes No
5. Are you a Union contractor? Yes No If yes, please list which local(s) you affiliated with _____
6. Are you a Veteran owned company? Yes No

PART I: CONTRACTOR/SUBCONTRACTOR INFORMATION

7. _____
Employer Identification Number or Federal Tax I.D. Email Address
8. _____
Company Name
9. _____
Company Address and Zip Code
10. _____
Chief Operating Officer Telephone Number
11. _____
Designated Equal Opportunity Compliance Officer Telephone Number
(If same as Item #10, write "same")
12. _____
Name of Prime Contractor and Contact Person
(If same as Item #8, write "same")

13. Number of employees in your company: _____

14. Contract information:

(a) _____ (b) _____
Contracting Agency (City Agency) Contract Amount

(c) _____ (d) _____
Procurement Identification Number (PIN) Contract Registration Number (CT#)

(e) _____ (f) _____
Projected Commencement Date 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___

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___

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___ 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___

If yes,

(a) Name and address of OFCCP office.

(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 ___ 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.

- ___ (a) Health benefit coverage/description(s) for all management, nonunion and union employees (whether company or union administered)
- ___ (b) Disability, life, other insurance coverage/description
- ___ (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
- ___ (g) Collective bargaining agreement(s).
- ___ (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 ___ No ___ |
| (b) After a conditional job offer | Yes ___ No ___ |
| (c) After a job offer | Yes ___ No ___ |
| (d) Within the first three days on the job | Yes ___ No ___ |
| (e) To some applicants | Yes ___ No ___ |
| (f) To all applicants | Yes ___ No ___ |
| (g) To some employees | Yes ___ No ___ |
| (h) To all employees | Yes ___ No ___ |

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

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

If yes, is the medical examination given:

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

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 ___ 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 _____

26. Does your firm or collective bargaining agreement(s) have an internal grievance procedure with respect to EEO complaints? Yes ___ 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___

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___

If yes, attach a log. See instructions.

29. Are there any jobs for which there are physical qualifications? Yes___ No___

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___

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) _____ 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.

Contractor's Name

Name of person who prepared this Employment Report Title

Name of official authorized to sign on behalf of the contractor Title

Telephone Number

Signature of authorized official Date

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 _____ day of _____ 20 _____

Notary Public Authorized Signature Date

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

1. Do you plan to subcontract work on this contract? Yes ___ 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

*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
- (H) Helper
- (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:	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 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

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

FEMALES

	(6)		(7)		(8)		(9)		(10)	
	White Non Hisp.	Black Non Hisp.	White Non Hisp.	Black Non Hisp.	White Non Hisp.	Black Non Hisp.	Asian	Native Amer.	White Non Hisp.	Black Non Hisp.
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
- (H) Helper
- (TOT) Total by Column
- (A) Apprentice
- (TRN) Trainee

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:	MALES						FEMALES																
	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)				
	White Non Hisp.	Black Non Hisp.	White Non Hisp.	Black Non Hisp.	White Non Hisp.	Black Non Hisp.	White Non Hisp.	Black Non Hisp.	White Non Hisp.	Black Non Hisp.	White Non Hisp.	Black Non Hisp.	White Non Hisp.	Black Non Hisp.	White Non Hisp.	Black Non Hisp.	White Non Hisp.	Black Non Hisp.	White Non Hisp.	Black Non Hisp.	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: _____

FEMALES

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

MALES

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

Total (Col. #1-10): _____

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

Total Female
(Col. #6 - 10): _____

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

FMS ID: HWKF029B



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

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

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

CONTRACT NO. 1 GENERAL CONSTRUCTION WORK

121 Plymouth Paint Warehouse Relocation to 424 Wythe Building Construction

**LOCATION: 424 Wythe Avenue
BOROUGH: Brooklyn 11211
CITY OF NEW YORK**

Contractor _____

Dated _____, 20____

Entered in the Comptroller's Office

First Assistant Bookkeeper _____

Dated _____, 20____





PROJECT ID: HWKF029B

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

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

VOLUME 2 OF 3

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

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

**121 Plymouth Paint Warehouse
Relocation to 424 Wythe Building
Construction**

LOCATION:
BOROUGH:
CITY OF NEW YORK

424 Wythe Avenue
Brooklyn 11211

CONTRACT NO. 1

GENERAL CONSTRUCTION WORK

DOT

Goldman + Copeland Associates, PC

Date: April 10, 2014

14-112





NEW YORK CITY DEPARTMENT OF
DESIGN + 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
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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



NOTICE:

THIS CONTRACT IS NOT SUBJECT TO THE REQUIREMENTS OF THE WICKS LAW FOR SEPARATE PRIME CONTRACTORS

This contract is subject to a Project Labor Agreement ("PLA"). In accordance with the Labor Law, 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. However, the Contract Documents for this Project (General Conditions, Drawings and Specifications) were prepared as if the requirements of the Wicks Law for separate prime contractors did apply. To correct this situation, the bidder is advised that the Contract Documents are revised as set forth below.

- (A) Delete any and all references to separate responsibilities, separate specifications, separate drawings and/or separate contracts for the four subdivisions of the work listed below:
- General Construction Work (Contract No. 1)
 - Plumbing Work (Contract No. 2)
 - HVAC & Fire Protection Work (Contract No. 3)
 - Electrical Work (Contract No. 4)
- (B) Revise all such references to indicate that:
- The Project consists of a single contract, the Contract for General Construction Work.
 - All responsibilities and obligations in the Contract Documents assigned to the separate Contractors for the four subdivisions of the work listed above are the responsibility of the Contractor 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, including all responsibilities and obligations assigned to the separate Contractors for the four subdivisions of the work listed above.
- (C) Revise any and all references to Contracts Nos. 2, 3 and 4 to refer to Contract No. 1.
- (D) Revise the specifications for plumbing work to require Contractor for General Construction Work to engage a Licensed Plumber to perform the required plumbing work.
- (E) Revise the specifications for electrical work to require Contractor for General Construction Work to engage a Licensed Electrician to perform the required electrical work.

NOTICE:

THIS CONTRACT IS SUBJECT TO A PROJECT LABOR AGREEMENT

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

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 work, 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 created by Local Law 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 M/WBE firms may be obtained from the DSBS website at www.nyc.gov/buycertified, by emailing DSBS at buyer@sbs.nyc.gov, by calling (212) 513-6356, or by visiting or writing DSBS at 110 William St., New York, New York, 10038, 7th floor. Eligible firms that have not yet been certified may contact DSBS in order to seek certification by visiting www.nyc.gov/getcertified, emailing MWBE@sbs.nyc.gov, or calling the DSBS certification helpline at (212) 513-6311.

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:

Q1. 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.

Q2. 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.

Q3. Does the PLA affect the subcontractors that a bidder may utilize on the project?

A. 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.

Q4. 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.

Q5. 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 MWBEs 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 MWBEs 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 MWBEs, 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.

Q6. Must the City set MWBE participation goals for the particular project or contract in order for a certified MWBE to utilize the provisions of PLA Article 4, Section 2C?

A. No. PLA Article 4, Section 2(C) specifies what categories of MWBEs are eligible to take advantage of this provision (i.e., those MWBEs 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.

Q7. 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.

Q8. 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. See PLA Article 4, Section 6 and Article 11.

Q9. 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. 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 C.

Q10. 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. The City strongly advises Contractors to read these provisions carefully and to include appropriate provisions in subcontracts addressing these possibilities.

Q11. 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.

Q12. 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).

Q13. Does the PLA create a common holiday schedule for all the signatory trades?

A. Yes, the PLA recognizes eight (8) common holidays. See PLA Article 12, Section 4.

Q14. 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.

Q15. 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 the 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.

Q16. 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 trades CBA.

Q17. 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.

Q18. 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.

Q19. 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.

Q20. Should a local collective bargaining agreement [local CBA] 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.

Q21. 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.

Q22. 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.

Q23. 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.

Q24. 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.

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NYC AGENCY RENOVATION & REHAB OF CITY OWNED BUILDINGS/STRUCTURES

PROJECT LABOR AGREEMENT

COVERING SPECIFIED

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

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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) for Fiscal Years 2010 - 2014 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 the Program Work;

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

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

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

- (8) 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.

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 Corrections (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 "Council"; and the work covered by this Agreement (as defined in Article 3) is referred to as "Program Work."

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 Engineers Locals 14 and 15 and/or the Teamsters Local 282 will be performed under the terms and conditions set out in the Schedule A agreements of Operating Engineers Locals 14 and 15 and Teamsters Local 282. Subject to the foregoing, where a subject covered by the provisions of this Agreement is also covered by a Schedule A, 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 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.

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 June 30, 2014. 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 Program Work does not include, and this Project Labor Agreement shall not apply to, any other work, including:

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 June 30, 2014;
2. Contracts procured on an emergency basis;
3. Small purchases (purchases not more than \$100,000) awarded pursuant to New York City Charter §314, New York City Charter § 316 and New York City Procurement Policy Board Rules §3-08;
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; and

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

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 June 30, 2014, 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, 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 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.

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.

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 pursuant to 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 (2nd), fourth (4th), sixth (6th), and eighth (8th) 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.

For such contracts valued at above \$500,000 but less than \$1 million, the Local will honor referrals by name of the second (2nd), fifth (5th), and eighth (8th) 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 AND FEMALE REFERRALS

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

SECTION 5. CROSS AND QUALIFIED REFERRALS

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

SECTION 6. 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 journeymen 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.

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.

SECTION 2. STEWARDS

A. Each Local Union shall have the right to designate a working journey person as a Steward and an alternate, and shall notify the Contractor and Construction Manager 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. 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 Contractors' choice of materials, techniques, methods, technology or design, or, regardless of source or location, upon the use and installation of equipment, machinery, package units, pre-cast, pre-fabricated, pre-finished, or pre-assembled materials or products, tools, or other labor-saving devices. Contractors may, without restriction, install or use materials, supplies or equipment regardless of their source; provided, however, that where there is a Schedule "A" that includes a lawful union standards and practices clauses, then such clause as set forth in Schedule A Agreements will be complied with, unless there is a lawful Agency specification (or specification issued by a Construction Manager which would be lawful if issued by the Agency directly) that would specifically limit or restrict the Contractor's choice of materials, techniques, methods, technology or design, or, regardless of source or location, upon the use and installation of equipment, machinery, package units, pre-cast, pre-fabricated, pre-finished, or pre-assembled materials or products, tools, or other labor-saving devices, and which would prevent compliance with such Schedule A clause. The on-site installation or application of such items shall be performed by the craft having jurisdiction over such work; provided, however, it is recognized that other personnel having special qualifications may participate, in a supervisory capacity, in

the installation, check-off or testing of specialized or 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 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 and its members will not be liable for any unauthorized acts of the Council. Failure of a Contractor or the Construction Manager to give any notification set forth in this Article shall not excuse any violation of Section 1 of this Article.

SECTION 4. EXPEDITED ARBITRATION

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

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

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

C. All notices pursuant to this Article may be provided by telephone, telegraph, hand delivery, or fax, confirmed by overnight delivery, to the Arbitrator, Contractor,

Construction Manager and Local Union involved. The hearing may be held on any day including Saturdays or Sundays. The hearing shall be completed in one session, which shall not exceed 8 hours duration (no more than 4 hours being allowed to either side to present their case, and conduct their cross examination) unless otherwise agreed. A failure of any Union or Contractor to attend the hearing shall not delay the hearing of evidence by those present or the issuance of an award by the Arbitrator.

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

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

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

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

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

SECTION 5. ARBITRATION OF DISCHARGES FOR VIOLATION

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

Step 1:

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

The Business Manager or designee of the involved Local Union, together with representatives of the involved Contractor, Council and the Construction Manager (or designee), shall meet in Step 2 within 7 calendar days of service of the written grievance to arrive at a satisfactory settlement.

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 J.J. Pierson or Richard Adelman, who shall act, alternately (beginning with Arbitrator J.J. Pierson), as the Arbitrator under this procedure. The Labor Arbitration Rules of the American Arbitration Association shall govern the conduct of the arbitration hearing, at which all Step 2 participants shall be parties. The decision of the Arbitrator shall be final and binding on the involved Contractor, Local Union and employees and the fees and expenses of such arbitrations shall be borne equally by the involved Contractor and Local Union.

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

SECTION 2. LIMITATION AS TO RETROACTIVITY

No arbitration decision or award may provide retroactivity of any kind exceeding 60 calendar days prior to the date of service of the written grievance on the Construction Manager and the involved Contractor or Local Union.

SECTION 3. PARTICIPATION BY AGENCY AND/OR CONSTRUCTION MANAGER

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

ARTICLE 10 - JURISDICTIONAL DISPUTES

SECTION 1. NO DISRUPTIONS

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

SECTION 2. ASSIGNMENT

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

SECTION 3. NO INTERFERENCE WITH WORK

There shall be no interference or interruption of any kind with the Program Work while any jurisdictional dispute is being resolved. The work shall proceed as assigned by the

Contractor until finally resolved under the applicable procedure of this Article. The award shall be confirmed in writing to the involved parties. There shall be no strike, work stoppage or interruption in protest of any such award.

ARTICLE 11 - WAGES AND BENEFITS

SECTION 1. CLASSIFICATION AND BASE HOURLY RATE

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

SECTION 2. EMPLOYEE BENEFITS

A. The Contractors agree to pay on a timely basis contributions on behalf of all employees covered by this Agreement to those established jointly trustee employee benefit funds designated in 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. 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.

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

D. 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 which the union and/or fringe benefit fund claims to be due it, and deposit such amount when and so withheld in a separate interest-bearing account pending resolution of the dispute pursuant to the union's Schedule A agreement, and the amount so deposited together with the interest thereon shall be paid to the party or parties ultimately determined to be entitled thereto, or held until the Delinquent Contractor and union or fringe 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.

E. Payment to a fringe benefit fund under this provision shall not relieve the General Contractor or Delinquent Contractor from responsibility for the work covered by the payment. Except as otherwise provided, nothing contained herein shall create any obligation on

the part of the Agency to pay any union or fringe benefit fund, nor shall anything provided herein serve to create any relationship in contract or otherwise, implied or expressed, between the union/fund and/or fringe benefit and the Agency.

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

SECTION 1. WORK WEEK AND 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.

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.

C. Scheduling - 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 over eight (8) hours in a day where 5/8s is scheduled or for work over ten (10) hours in a day where 4/10s is scheduled and over forty (40) hours in a week, at time and one half (1½) Monday through Saturday. All overtime work performed on Sunday and Holidays will be paid pursuant to the applicable Schedule A. There shall be no stacking or pyramiding of overtime pay under any circumstances. There will be no restriction upon the Contractor's scheduling of overtime or the nondiscriminatory designation of employees who shall be worked, including the use of employees, other than those who have worked the regular or scheduled work week, at straight time rates. The Contractor shall have the right to schedule work so as to minimize overtime or schedule overtime as to some, but not all, of the crafts and whether or not of a continuous nature.

SECTION 3. SHIFTS

A. Flexible Schedules - Scheduling of shift work, including Saturday and Sunday work, shall be within the discretion of the Contractor in order to meet Program Work schedules and existing Program Work conditions including the minimization of interference with the mission of the Agency. It is not necessary to work a day shift in order to schedule a second or third shift, or a second shift in order to schedule a third shift, or to schedule all of the crafts when only certain crafts or employees are needed. Shifts must have prior approval of the Agency or Construction Manager, and must be scheduled with not less than five 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 40 hours in the week. 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.

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 8 recognized holidays on the Project:

New Years Day	Labor Day
Martin Luther King Day	President's Day
Memorial Day	Thanksgiving Day
Independence Day	Christmas Day

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

B. Payment - Regular holiday pay, if any, for work performed on such a 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 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.

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

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

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

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

SECTION 7. PAYMENT OF WAGES

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

SECTION 8. EMERGENCY WORK SUSPENSION

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

SECTION 9. INJURY/DISABILITY

An employee who, after commencing work, suffers a work-related injury or disability while performing work duties, shall receive no less than 8 hours wages for that day. 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 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.

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.

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, water, power and light, shall only be required upon the specific request of the Agency or Construction Manager, and when so requested shall be assigned to the appropriate trade claiming jurisdiction. Temporary system coverage 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 system coverage requirements during non-working hours. There shall be no stacking of trades on temporary services. In the event a temporary system 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.

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.

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, 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 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.

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 which are the basis for Schedule A notify the Agency and Construction Manager in writing of the hourly rate 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 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 Center for Military Recruitment, Assessment and Veterans Employment (hereinafter "Center") and the Center's "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 Center to create and maintain an integrated database of veterans interested in working on this Project and of apprenticeship and employment opportunities for this Project. To the extent permitted by law, the Unions will give credit to such veterans for bona fide, provable past experience.

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

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

BY: *Gary LaBarbera*
Gary LaBarbera
President

FOR NEW YORK CITY

BY: _____
Michael R. Bloomberg
Mayor

APPROVED AS TO FORM:

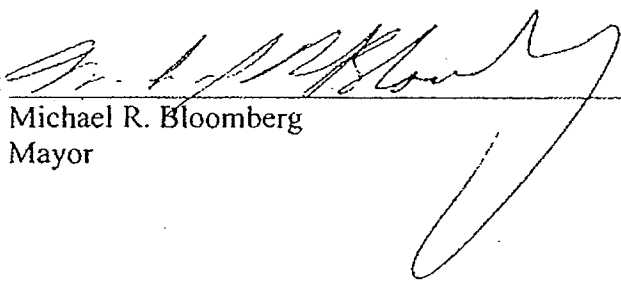
ACTING CORPORATION COUNSEL
NEW YORK CITY

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: 

Michael R. Bloomberg
Mayor

APPROVED AS TO FORM:



ACTING CORPORATION COUNSEL
NEW YORK CITY

DEC 1 8 2009

List of Signatory Unions

Blasterers and Drillers Local #29

Bricklayers Local No. 1

Boiler Makers Local No. 5

Carpenters District Council

Cement Masons No. 780

Derrickmen and Riggers Union No. 197

Concrete Workers District Council No. 16, including Cement and Concrete Workers Nos. 6-A, 18-A, and 20

Electrical Local No. 3

Drywall Tapers 1974

Elevator Constructors No. 1

Heat & Frost Insulators Local Union No. 12A

Heat & Frost Insulators Local Union No. 12

Iron Workers No. 40

Iron Workers District Council

Laborers Local No. 78 Asbestos & Lead Abatement

Iron Workers No. 361

Laborers Construction and General Building No. 79

Laborers Local 731

Lathers Metallic Local No. 46

Local Union 8A Glaziers No. 1281

Mason Tenders District Council

Metal Polishers DC 9

Painters District Council No. 9

Painters Structural Steel No. 806

Ornamental Iron Workers No. 580

Plasters Local Union No. 262

Pavers & Road Builders District Council No. 1

Plumbers No. 1

Sheet Metal Workers Local No. 28

Roofers & Waterproofers No. 8

Sheet Metal Workers Local No. 137

Steamfitters Local Union No. 638; including Metal Trades Division

Teamsters Local Union 813

Teamsters Local Union 814

Tile, Marble & Terrazzo B.A.C. Local Union No. 7

PLA Schedule A

The following Collective Bargaining Agreements, as this Schedule may be amended from time to time in accordance with the Agreement, constitute Schedule A:

- (1) Agreement between the Boilermakers Association of Greater New York, Inc. and the International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers AFL-CIO, Lodge No. 5, September 1, 2006 - December 31, 2009.
- (2) Agreement between Association of Cement and Concrete Contractors of New York, Inc. and Cement and Concrete Workers comprised of Local No. 6A, Local No. 18A, Local No. 20 and the Employer, July 1, 2008 - June 30, 2011.
- (3) Agreement between the Cement League and the District Council of Cement and Concrete Workers; Comprised of Local No. 6A, Local No. 18A, Local No. 20; July 1, 2008 - June 30, 2011.
- (4) Agreement between the Cement League and the United Cement Masons' Union Local No. 780, Clarified & Extended from October 23, 1940 to June 30, 2011.
- (5) Building Construction agreement between the Building Contractors Association, Inc. and the District Council of New York City and Vicinity of the United Brotherhood of Carpenters and Joiners of America, AFL-CIO, July 1, 2006 - June 30, 2011.
- (6) General Contractors Association - Carpenters 2006; Agreement Between Members of the General Contractors Association of New York, Inc. and the District Council of Carpenters of New York City and Vicinity, July 1, 2006 - June 30, 2011.
- (7) Trade Agreement between Drywall Tapers and Pointers of Greater New York Local Union 1974, affiliated with International Union of Painters and Allied Trades, AFL-CIO and Drywall Taping Contractors' Association of Greater New York and the Association of Wall-Ceiling & Carpentry Industry of New York, Inc., September 6, 2006 - June 28, 2011; Independent Agreement between Local Union 1974 and Employer.
- (8) Agreement between Allied Building Metal Industries, Inc. and Local Union Nos. 40 and 361 of the International Association of Bridge, Structural and Ornamental and Reinforcing Iron Workers AFL-CIO, July 1, 2008 - June 30, 2014.
- (9) Agreement between Independent Contractors and Local #46 Metallic Lathers Union and Reinforcing Ironworkers of New York and Vicinity of the International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers, July 1, 2008 - June 30, 2014.
- (10) Agreement of Working Conditions between the Independent Insulation Contractors Association of New York City Inc. and the International Association of Heat and Frost Insulators and Asbestos Workers Local No. 12 of New York City, 2008-2014.

- (11) Mason Tenders District Council of Greater New York Master Independent Collective Bargaining Agreement, 2008-2011.
- (12) Trade Agreement between District Council No. 9, International Union of Painters and Allied Trades, AFL-CIO and the Association of Master Painters and Decorators of New York, Inc. and the Association of Wall, Ceiling & Carpentry Industries of New York, Inc. and the Window and Plate Glass Dealers Association, May 1, 2005 - April 30, 2011.
- (13) Trade Agreement between Enterprise Association Local Union 638 and Mechanical Contractors Association of New York, Inc., July 1, 2008 - June 30, 2011.
- (14) Agreement between Allied Building Metal Industries Inc. and Architectural and Ornamental Iron Workers Local Union No. 580 AFL-CIO; July 1, 2008 - June 30, 2011.
- (15) Official Working Agreement between Service Contractors Division of the Mechanical Contractors Association of New York and Enterprise Association Metal Trades Branch Local Union 638, July 1, 2007 - June 30, 2010.
- (16) Agreement between Association of Contracting Plumbers of the City of New York, Inc. and Local Union No 1 of the United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada, July 1, 2007 - June 30, 2010.
- (17) Agreement and Working Rules between New York Electrical Contractors Association, Inc. and the Association of Electrical Contractors, Inc. and Local Union No. 3 International Brotherhood of Electrical Workers, AFL-CIO, May 10, 2007 - May 13, 2010.
- (18) Official Working Agreement between Service Contractors Division of the Mechanical Contractors Association of New York, Inc. and Enterprise Association Metal Trades Branch Local Union 638, Refrigeration, Air Conditioning, Air Cooling, Oil Burner and Stoker Service and Maintenance Technicians, July 1, 2007 - June 30, 2010.
- (19) Structural Steel and Bridge Painters of Greater New York, Local Union No. 806, District Council No. 9, International Union of Painters and Allied Trades, AFL-CIO, CLC and New York Structural Steel Painting Contractors Association, Inc.; Collective Bargaining Agreement, October 1, 2005 - September 30, 2011.
- (20) Trade Agreement between United Derrickmen & Riggers Association, Local No. 197 of New York, All-long Island, Westchester and Vicinity and Building Stone and Pre-Case Contractors Association, 2008.
- (21) Agreement between the Greater New York and New Jersey Tile Contractors Association, Inc., and the Tile Setters and Tile Finishers Union of New York and New Jersey, Local Union No. 7 of the International Union of Bricklayers and Allied Craftworkers, June 8, 2009 - June 2, 2013.

- (22) Agreement between The Building Contractors Association, Inc. and International Union of Operating Engineers Local 15 and 15 A, July 1, 2006-June 30, 2011.
- (23) Agreement dated as of July 1, 2006 between Building Contractors Association and International Union of Operating Engineers Local 14-14B, July 1, 2006-June 30, 2011.
- (24) Agreement Between The Building Contractors Association, Inc. and International Union of Operating Engineers Local 15D affiliated with the AFL-CIO, July 1, 2006-June 30, 2011.
- (25) Local 282 International Brotherhood of Teamsters High Rise Contract, Building Contractors Association and Independents, 2008-2013.
- (26) Building, Concrete, Excavation & Common Laborers Union Local No. 731 Independent Agreement, July 1, 2006-June 30, 2012.
- (27) March 17, 2009 Agreement between ThyssenKrupp Elevator Corp. and International Union of Elevator Constructors, Local 1 of NY and NJ, 2009-2014.
- (28) Working Agreement Local Union No. 8 United Union of Roofers, Waterproofers and Allied Workers and Roofing and Waterproofing Contractor's Association of New York and Vicinity, July 1, 2009-June 30, 2011.
- (29) Standard Form Collective Bargaining Agreement between Sheet Metal Workers' International Association Local Union #137 and the Greater New York Sign Association, July 16, 2007 – July 15, 2010.
- (30) Trade Agreement between _____ and Local No. 1 New York of the International Union of Bricklayers and Allied Craftworkers, July 1, 2008 – July 30, 2011.

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NYC AGENCY RENOVATION & REHAB CITY OWNED BUILDINGS/STRUCTURES

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 and local trust agreements as set forth in the Project Labor Agreement and this Agreement 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.

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 _____, 2009

Notary Public

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.

NOTICE TO BIDDERS

Please be advised that the City of New York has issued a new Standard Construction Contract. The new Contract, which is incorporated in this bid, is significantly different from the 2008 version previously used by the City. A listing of some of the significant changes is provided below. 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 should there be any discrepancies between this notice and the Standard Construction Contract.

Significant changes include the following:

ARTICLE 11 DAMAGES CAUSED BY DELAYS

In 2008, the City embarked on a pilot project to test the use of new construction contract language altering the allocation of the risk of project delays, as between the City and the contractor. The City has determined to make the pilot project language the standard language for all City construction contracts. Accordingly, there is now one Standard City Construction Contract that it to be used by all agencies for all bids released after the release of the new contract. The damages for delay language is Article 11. Please note that changes have been made to the damages for delay provisions from the pilot to the adopted version.

ARTICLE 22 INSURANCE

Changes have been made to the insurance provisions, including incorporating requirements that the insurance provided comply with recent NYC Department of Buildings regulations specifying required dollar limits for CGL insurance for certain projects and requiring proof of builder's risk insurance prior to Work commencing rather than within 10 days of award.

ARTICLE 26 EXTRA WORK

The percentage paid for overhead for Extra Work pursuant to Section 26.1.11 is increased from 10% to 12% and the calculation of Worker's Compensation insurance costs reimbursed for Extra Work has been clarified.

ARTICLE 37 LABOR LAW REQUIREMENTS
ARTICLE 38 PAYROLL REPORTS

The provisions governing Labor Law provisions have been tightened, including requirements the employee identification cards include a photo (unless the requirement is waived), a prohibition on cash payments to employees and subcontractors, and clear enforcement authority requirements.

ARTICLE 70 ELECTRONIC FILING

A provision is added to make mandatory the electronic filing of certain alteration permits with the Department of Buildings.

Other significant changes include the following:

ARTICLE 7 INDEMNIFICATION

Changes have been made to the indemnification provisions.

ARTICLE 14 FINAL ACCEPTANCE OF WORK
ARTICLE 44 SUBSTANTIAL COMPLETION PAYMENT

The Commissioner is no longer required to issue a substantial completion determination in addition to the already existing requirement that the Engineer issue a substantial completion determination and reach an agreement on a punch list of remaining work. Now, the Engineer, when issuing the punch list to the Contractor, must also include a proposed schedule for the completion of the punch list. The Contractor may propose an alternative schedule that is subject to the approval of the Engineer. If the Contractor fails to respond to the Engineer's proposed schedule, the Engineer's schedule is deemed accepted.

ARTICLE 15 LIQUIDATED DAMAGES

The contract is revised to match Schedule A to provide that liquidated damages are available only until substantial completion.

ARTICLE 17 SUBCONTRACTS

The requirements for prior approval of subcontractors, and for contractors to be responsible for the actions of their subcontractors, have been tightened. The requirement that the Contractor list subcontractors in the City's Payee Information Portal has been added; the provision was previously attached as a rider.

ARTICLE 19 SECURITY DEPOSIT

The provisions governing the return of bid deposits are clarified.

ARTICLE 20 PAYMENT GUARANTEE

The Payment Guaranty provisions, which apply when the City does not require the Contractor to obtain payment bonds, has been significantly revised to track the requirements of State Finance law 137.

ARTICLE 28 RECORDKEEPING FOR EXTRA OR DISPUTED WORK

The recordkeeping requirement that currently apply to payments for Time & Materials for extra work are expressly made applicable to regular work that is paid for on a T & M basis.

ARTICLE 35 EMPLOYEES

The whistleblower provisions of local law are added to the construction contract. They previously have been attached as a rider.

ARTICLE 38 PAYROLL REPORTS
ARTICLE 77 RECORDS RETENTION

Requirements that records be maintained for six years and directions on how such records must be made available.

ARTICLE 42 PARTIAL PAYMENTS

Increased flexibility has been provided for when contractors may submit invoices.

ARTICLE 62 TAX EXEMPTION

The provisions identifying the State tax exemption for municipalities are revised to more clearly describe State law.

RIDER

Pursuant to 44 CFR §13.36(i), the following provisions are inserted into the Contract:

1. The City shall have the right to terminate this Contract, in whole or in part, for cause or without cause. The City shall give no less than 30 days written notice of termination ("Termination Notice") for termination without cause and no less than 10 days notice for termination for cause unless a shorter time is determined by the Commissioner to be necessary. If the City terminates this Contract the City shall not incur or pay any further obligation pursuant to this Contract beyond the termination date set by the City in the Termination Notice. The City shall pay for services rendered or goods delivered in accordance with this Contract prior to the termination date. In addition, any obligation necessarily incurred by the Contractor on account of this Contract prior to receipt of notice of termination and falling due after the termination date shall be paid by the City in accordance with the terms of this Contract. In no event shall such obligation be construed as including any lease or other occupancy agreement, oral or written, entered into between the Contractor and its landlord.

2. In the event of a Default of Contractor's obligations under this Contract, the Commissioner, after declaring the Contractor in default, may have the services under the Contract completed by such means and in such manner, by contract with or without public letting, or otherwise, as he or she may deem advisable in accordance with applicable PPB Rules. After such completion, the Commissioner shall certify the expense incurred in such completion, which shall include the cost of re-letting. 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 promptly paid by the Contractor upon demand by the City. The excess 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, may be charged against and deducted out of monies earned by the Contractor.

3. If applicable, Contractor shall comply, and shall cause its subcontractors to comply with Executive Order 11246 of September 24, 1964, entitled "Equal Employment Opportunity" as amended by Executive Order 11375 of October 13, 1967 and supplemented in Department of Labor regulations (41 CFR Chapter 60).(applicable to all construction contracts awarded in excess of \$10,000)

4. If applicable, Contractor shall comply, and shall cause its subcontractors to comply with the Copeland "Anti-Kickback" Act (18 U.S.C 874) as supplemented in Department of Labor regulations (29 CFR Part 3).(applicable to contracts for construction or repair)

5. If applicable, Contractor shall comply, and cause its subcontractors to comply with the Davis-Bacon Act (40 U.S.C. 276a to 276a-7) as supplemented by Department of Labor regulations (29 CFR Part 5).(applicable to construction contracts in excess of \$2,000)

6. If applicable, Contractor shall comply and cause its subcontractors to comply with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-330) as supplemented by Department of Labor regulations (29 CFR Part 5). (applicable to construction contracts in excess of \$2,000, and in excess of \$2,500 for other contract which involve the employment of mechanics or laborers)

7. Contractor shall be required to produce and deliver such reports relating to the services performed under this Contract as may be required by the City or any other State or federal governmental agency with jurisdiction.

8. Pursuant to 44 CFR §13.34, if the services under this Contract are supported by a federal grant of funds FEMA reserves a royalty-free, non-exclusive, and irrevocable right to reproduce, publish, or otherwise use, and to authorize others to use, for Federal Government purposes: (1) the copyright in any work developed under a grant, subgrant, or contract under a grant or subgrant; and (2) any rights of copyright to which a grantee, subgrantee, or contractor purchases ownership with grant support.

9. Any reports, documents, data, photographs, deliverables, and/or other materials produced pursuant to this Contract ("Copyrightable Materials"), and any and all drafts and/or other preliminary materials in any format related to such items produced pursuant to this Contract, shall upon their creation become the exclusive property of the City. The 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 Contractor 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 Contractor shall retain no copyright or intellectual property interest in the Copyrightable Materials.

10. The Contractor shall promptly and fully report to the Department any discovery or invention arising out of or developed in the course of performance of this Contract. If the services under this Contract are supported by a federal grant of funds, the Contractor shall promptly and fully report to the federal government for the federal government to make a determination as to whether patent protection on such invention shall be sought and how the rights in the invention or discovery, including rights under any patent issued thereon, shall be disposed of and administered in order to protect the public interest.

11. The Contractor shall grant access to the State, the City, FEMA, and/or the Comptroller General of the United States, or any of their duly authorized representatives, to any books, documents, papers, and/or records of the Contractor that are directly pertinent to the Contract for the purpose of making audit, examination, excerpts, and transcriptions. Contractor shall retain all books, documents, papers or records relating to the services performed under this

Contract for three years after final payment under this Contract is made and all other pending matters are closed.

12. For any contract or subcontract the value of which is in excess of \$100,000: The Contractor shall comply and shall cause its subcontractor to comply with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act (42 U.S.C. §1857(h)), Section 508 of the Clean Water Act (33 U.S.C. §1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR Part 15).

13. The Contractor shall comply with mandatory standards and policies relating to energy efficiency that are contained in the State's energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub. L. 94-163, 89 Stat. 871).

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Notice to Bidders:

In 2013 the City will be implementing a new web based subcontractor reporting system. Once this subcontractor reporting system is implemented, and Contractor receives notice of its implementation, Contractor will be required to list in the system all of the subcontractors that it knows it will use or is already using in the performance of this contract. For each subcontractor listed, Contractor will be required to provide the following information: maximum contract value, description of subcontractor work, start and end date of the subcontract and identification of the subcontractor's industry. Identification of subcontractors in the system along with the required information will be required in order to obtain subcontractor approval under [section 3.02 of Appendix A][Article 17 of the Standard Construction Contract] and PPB Rule § 4-13 for all subcontractors that have not been approved as of the implementation date. 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...

When the subcontractor reporting system is implemented, Contractor will receive a written notice from the City which will contain the information the Contractor will need to list its subcontractors and report payments. Contractor will not be required to comply with the requirements set forth herein until such notice is issued. Contractor will have 30 days from the date of the notice to list its current subcontractors for which it has already received Agency approval, if any. Thereafter, for those subcontractors that have not yet been approved by the Agency, subcontractors will have to be listed in the system in order to obtain the required Agency approval.

Failure of the Contractor to list a subcontractor and/or to report subcontractor payments in a timely fashion may result in the Agency declaring the Contractor in default of the Contract and may 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. For construction contracts, the provisions of Article 15 of the Standard Construction Contract shall govern the issue of liquidated damages.

Contractor hereby agrees to these provisions and acknowledges that they will become effective on the date set forth in the notice.

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NOTICE TO BIDDERS, PROPOSERS, CONTRACTORS, AND RENEWAL CONTRACTORS

This contract includes a provision concerning the protection of employees for whistleblowing activity, pursuant to New York City Local Law Nos. 30-2012 and 33-2012, effective October 18, 2012 and September 18, 2012, respectively. The provisions apply to contracts with a value in excess of \$100,000.

Local Law No. 33-2012, the Whistleblower Protection Expansion Act (“WPEA”), prohibits a contractor or its subcontractor from taking an adverse personnel action against an employee or officer for whistleblower activity in connection with a City contract; requires that certain City contracts include a provision to that effect; and provides that a contractor or subcontractor may be subject to penalties and injunctive relief if a court finds that it retaliated in violation of the WPEA. The WPEA is codified at Section 12-113 of the New York City Administrative Code.

Local Law No. 30-2012 requires a contractor to prominently post information explaining how its employees can report allegations of fraud, false claims, criminality, or corruption in connection with a City contract to City officials and the rights and remedies afforded to employees for whistleblowing activity. Local Law No. 30-2012 is codified at Section 6-132 of the New York City Administrative Code.

WHISTLEBLOWER PROTECTION EXPANSION ACT RIDER

1. In accordance with Local Law Nos. 30-2012 and 33-2012, codified at sections 6-132 and 12-113 of the New York City Administrative Code, respectively,
 - (a) 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 (i) the Commissioner of the Department of Investigation, (ii) a member of the New York City Council, the Public Advocate, or the Comptroller, or (iii) the City Chief Procurement Officer, ACCO, Agency head, or Commissioner.
 - (b) If any of Contractor's officers or employees believes that he or she has been the subject of an adverse personnel action in violation of subparagraph (a) of paragraph 1 of this rider, he or she shall be entitled to bring a cause of action against Contractor to recover all relief necessary to make him or her whole. Such relief may include but is not limited to: (i) an injunction to restrain continued retaliation, (ii) reinstatement to the position such employee would have had but for the retaliation or to an equivalent position, (iii) reinstatement of full fringe benefits and seniority rights, (iv) payment of two times back pay, plus interest, and (v) compensation for any special damages sustained as a result of the retaliation, including litigation costs and reasonable attorney's fees.
 - (c) 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:
 - (i) 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
 - (ii) the rights and remedies afforded to its employees under New York City 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.
 - (d) For the purposes of this rider, "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.
 - (e) This rider is applicable to all of Contractor's subcontractors having subcontracts with a value in excess of \$100,000; accordingly, Contractor shall include this rider in all subcontracts with a value in excess of \$100,000.
2. Paragraph 1 is not applicable to this Contract if it is valued at \$100,000 or less. Subparagraphs (a), (b), (d), and (e) of paragraph 1 are not applicable to this Contract if it was solicited pursuant to a finding of an emergency. Subparagraph (c) of paragraph 1 is neither applicable to this Contract if it was solicited prior to October 18, 2012 nor if it is a renewal of a contract executed prior to October 18, 2012.

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, 9th 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. 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

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) including, but not limited to “Respiratory Protection” (29 CFR 1910.134), “Permit-Required Confined Spaces” (29 CFR 1910.146), and “Hazard Communication” (29 CFR 1910.1200);
- 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 753
- NYC Local Law No. 113 (2005) Noise Control Code

In addition, all regulations promulgated by the NYC Department of Transportation, including requirements for Maintenance and Protection of Traffic (MPT), are applicable when contained in contract specifications. While MPT is a significant component of work in our Infrastructure Division, it does not supersede or exempt Contractors from complying with other applicable health and safety standards (for example, excavating and trenching standards, operation of heavy equipment and compliance with City environmental and noise regulations).

I. 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 QACS 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 QACS within the Division of Technical 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").

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

Job Hazard Assessment (JHA): A process of identifying site-specific hazards that may be present during construction and establishing the means and methods to reduce or eliminate those hazards.

Jobsite Safety Coordinator: A person designated by the Contractor to be onsite during all activities. This individual shall have received, at a minimum, the OSHA 10-hour construction safety program. Other examples of acceptable training are the 30-hour OSHA Safety and Health Standards for the Construction Industry training program (OSHA 510) or a degree/certificate in a safety and health from a college-level curriculum. This person does not necessarily have to be dedicated full-time to site safety, but must have sufficient experience and authority to undertake corrective action and must qualify to be a competent person. For certain projects, as defined in NYC Construction Codes – Title 28, this person may be required to have a Site Safety Manager's License issued by the NYC DOB.

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.

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 CM, 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 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 precautions 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.

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. Resident Engineer / Construction Project Manager / Construction 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 meeting.
- 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 Protocol.
- Gathers facts related to all accidents and prepares DDC Accident Reports.
- Notifies the Construction Safety Unit of outside regulatory agency inspections and forwards a copy of the inspection report within three days of its receipt.
- Monitors the conditions at the site for conformance with the 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 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 emergency condition and directs the contractor to provide such labor, materials, equipment and supervision to abate such conditions.
- Reports gross safety violations to the Construction Safety Unit immediately.

A. Contractors

- Complete a Safety Questionnaire and submit with its bid or as part of a pre-qualification package.
- Provide a Written Job Hazard Assessment (JHA) that identifies expected safety issues of the work to be performed. JHA shall be included with the Site Safety Plan submitted by the contractor.
- Submit a Site Safety Plan and Safety Program within 15 days of issuance of the Notice to Proceed, 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.
- Ensure that all employees are aware of the hazards associated with the project through formal and informal training and/or other communications. Conduct and document weekly safety meetings for the duration of the project. Documentation to be provided to the RE/CPM/CM on a monthly basis.
- Name a Construction Superintendent, if required.
- Name a Job Site Safety Coordinator. The Contractor will be required to identify the Job Site Safety Coordinator 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.
- As part of the Site Safety Plan, prepare a site specific MPT (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 Job Site Safety Coordinator will conduct this training prior to mobilization and provide documentation to the RE/CPM/CM.
- 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 conditions or hazards to the DDC RE/CPM/CM as soon as practical, but no more than 24 hours after discovery, and take action to remove or abate such conditions.

- Report any accident involving injuries to workers or the general public, as well as property damage, to the DDC RE/CPM/CM within two (2) hours.
- Notify the DDC RE/CPM/CM within two (2) hours of the start of an inspection by any regulatory agency personnel, including OSHA.
- Maintain all records pertaining to all required compliance documents and accident and injury reports.
- Respond to 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 and environmental 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 their workers' compensation experience modification rating and OSHA Incidence 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 update within 30 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 years; and
- Criteria 4: A fatality (worker or member of public) experienced on or near Contractor's worksite within the last three (3) years; and
- Criteria 5: An unacceptable rating by QACS based on past performance on DDC projects; and
- Criteria 6: Contractor has in place an acceptable corporate safety program and its employees shall have completed all documented relative safety training; and
- Criteria 7: Contractor shall provide OSHA Injury Records (currently OSHA 300 Log) 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 detail concerning the Contractor's safety experience. DDC may request the Contractor to provide copies of, among other things, OSHA records, OSHA and DOB citations, EPA citations and written Safety Programs.

VI. SAFETY PROGRAM AND SITE SAFETY PLAN

Within fifteen (15) days of issuance of the Notice to Proceed, 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 standard, and the Site Safety Plan shall identify hazards associated with the project, and include specific safety precautions 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.

The Site Safety Plan shall apply to all Contractor and subcontractor operations, and shall have at a minimum, the following elements. Each element shall be described in a separate section in the written document. It may be necessary to modify the basic format for certain unique or high-risk projects (such as tunnels or high-rise construction). The basic elements are as follows:

1. **Responsibility and Organization:** Identify the person or persons with authority and responsibility for implementing the Site Safety Plan. Provide an organization chart and define levels of authority and responsibility. Identify the Competent Person, the Construction Superintendent (if required), the Job Safety Coordinator and the Qualified Person required for this project.
2. **Communication:** Establish a system for communicating with employees and subcontractors on matters relating to worker and public safety and health and environmental protection, including provisions designed to encourage employees to inform the employer of hazards at the worksite without fear of reprisal. An emergency response notification protocol is to be established that also includes after hours contact numbers. The plan must also include provisions for weekly safety meetings held by the Job Site Safety Coordinator.
3. **Job Hazard Assessment:** A written document submitted by the contractor, used to identify expected job hazards and public safety risks and state the specific means and methods to reduce, control or eliminate those hazards. This part of the Site Safety Plan must also include how on-going evaluations of those risks and hazards will be carried out, including plans for periodic inspections to identify unsafe conditions, work practices and public safety hazards.
4. **Accident/Exposure Investigation:** Establish a procedure to investigate and report occupational and public injury or illness, property damage, vehicle accidents or other mishaps.
5. **Hazard Correction:** Establish means, methods and/or procedures for correcting unsafe or unhealthy conditions that might be exposing both the public and workers to hazards. Corrective actions must be taken immediately when observed or discovered. Should an imminent hazard exist which cannot be immediately abated without endangering employees, the public and/or property, remove or restrict all exposed persons from the area except those necessary to correct the existing condition. Employees necessary to correct the hazardous condition shall be provided the necessary safeguards. When corrective actions cannot be taken immediately, temporary measures should be taken until such time permanent measures are taken to eliminate the potential risks or hazards
6. **Training:** Describe site-specific hazard training programs. In addition to the required safety orientation, additional site specific training, in the form of required weekly safety meetings, will be required. Contractors must also initiate training when: a) new employees are hired; b) employees are given new job assignments for which training has not been previously received; c) new substances, processes, procedures or equipment are introduced that might represent a new public or worker hazard; d) the employee is made aware of a new or previously unrecognized hazard; e) new supervisors are assigned to familiarize themselves with the safety and health hazards to which employees under their immediate direction and control may be exposed; and f) after a jobsite incident or accident has occurred.
7. **Recordkeeping:** Establish procedures to maintain records of scheduled and periodic inspections, weekly safety meetings, and training records. Updated records shall be maintained at the jobsite, accessible to the Construction Safety Auditors and/or Quality Assurance Auditors/RE/CPM, and retained in accordance with DDC policy.

The most critical component of the Site Safety Plan is the Job Hazard Assessment section. This section must address specific hazards that are anticipated throughout the project. Each Site Safety Plan must address, at a minimum:

- Public and pedestrian safety
- Fall protection
- Electrical hazards
- Scaffolding
- Fire protection
- Emergency notification & response
- Housekeeping / debris removal
- Dust control
- Maintenance and protection of traffic
- Trenching and excavating
- Heavy equipment operations
- Material / equipment storage
- Environmental contamination
- Sheeting and shoring
- Alcohol and Drug Abuse Policy

The following additional hazards must be addressed, if applicable, based on the contract safety specifications and/or the results of the JHA (the list is not all-inclusive):

- Basic Personal Protective Equipment
- Compressed Air
- Compressed Gas Cylinders
- Cranes, Derricks and Hoists
- Demolition
- Electrical safety
- Excavations and Trenching
- Fall Protection – Floor openings/Stairways
- Fall Protection – Guardrails Toe boards etc
- Fall Protection – Leading Edge
- Fall Protection – Personal Fall Protection Devices
- Fire Protection and Fire Prevention
- Hazard Communication (RIGHT TO KNOW)
- Hazardous Energy & Lock Out / Tag Out
- Housekeeping/ Sanitation
- Maintenance and Protection of Traffic (MPT)
- Man Lifts /Aerial Lifts
- Marine Operations
- Motor Vehicle Safety
- Overhead Power lines
- Permit Required Confined Space
- Portable Ladders
- Powered Actuated Tools
- Powered Material Handling Equipment
- Scaffolds – Mobile
- Scaffolds – Stationary
- Scaffolds – Suspended
- Slings
- Steel Erection
- Welding and Cutting (Hot Work)
- Airborne Contaminants – Particulates – General
- Asbestos
- Blood borne Pathogens
- Hearing Protection
- Lead in Construction
- Mercury in Construction
- PCB's
- Respiratory Protection
- Silica
- Thermal Stress
- West Nile Virus
- Rodents and Vermin
- Noise Mitigation Plan

Certain DDC programs, such as Job Order Contracting System (JOCS), may not necessarily require Site Safety Plans. The JOCS contractor will be required to submit a Safety Program. In addition, certain DDC Operating Units may establish program or client-specific safety requirements. The contractor's Site Safety Plan must address such program or client specific safety requirements.

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

As part of the construction kick-off meeting, a Site Safety Plan review will be part of the agenda. A QACS representative will participate in this meeting with the contractor 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 DDC 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 Superintendents or 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 forward them to the Construction Safety Unit on a weekly basis. Any critical deficiencies shall be immediately reported to QACS 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- QACS, or designee will meet with the Contractor's safety representative, the DDC project manager, the RE/CPM, or 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 inform the Construction Safety Unit and ACCO Insurance and Risk Management Unit of all medical injuries or illnesses that require doctors' treatment resulting from an on-the-job incident within 24 hours of the occurrence. The Construction Safety Unit shall also be immediately informed of all fatalities, catastrophic accidents with more than one employee hospitalized, any injuries to members of the general public and major equipment damage (e.g., property damage, equipment rollovers, loads dropped from crane). QACS shall maintain a record of all contractor injuries and illnesses during the project and provide regular reports to the Agency.
- F. The Construction Safety Unit shall be immediately notified at the start of any NYS-DOL/ NYC-COSH/ OSHA/ EPA inspections. The Director of Quality Assurance & Construction Safety shall maintain a log of all contractor OSHA/EPA inspections and citations during the project.

IX. SAFETY PERFORMANCE EVALUATION

The contractor's safety record, including all DDC 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 will 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.

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NOTICE TO BIDDERS

Please be advised that the City of New York has issued a new Standard Construction Contract. The new Contract, which is incorporated in this bid, is significantly different from the 2008 version previously used by the City. A listing of some of the significant changes is provided below. 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 should there be any discrepancies between this notice and the Standard Construction Contract.

Significant changes include the following:

ARTICLE 11 DAMAGES CAUSED BY DELAYS

In 2008, the City embarked on a pilot project to test the use of new construction contract language altering the allocation of the risk of project delays, as between the City and the contractor. The City has determined to make the pilot project language the standard language for all City construction contracts. Accordingly, there is now one Standard City Construction Contract that it to be used by all agencies for all bids released after the release of the new contract. The damages for delay language is Article 11. Please note that changes have been made to the damages for delay provisions from the pilot to the adopted version.

ARTICLE 22 INSURANCE

Changes have been made to the insurance provisions, including incorporating requirements that the insurance provided comply with recent NYC Department of Buildings regulations specifying required dollar limits for CGL insurance for certain projects and requiring proof of builder's risk insurance prior to Work commencing rather than within 10 days of award.

ARTICLE 26 EXTRA WORK

The percentage paid for overhead for Extra Work pursuant to Section 26.1.11 is increased from 10% to 12% and the calculation of Worker's Compensation insurance costs reimbursed for Extra Work has been clarified.

ARTICLE 37 LABOR LAW REQUIREMENTS
ARTICLE 38 PAYROLL REPORTS

The provisions governing Labor Law provisions have been tightened, including requirements the employee identification cards include a photo (unless the requirement is waived), a prohibition on cash payments to employees and subcontractors, and clear enforcement authority requirements.

ARTICLE 70 ELECTRONIC FILING

A provision is added to make mandatory the electronic filing of certain alteration permits with the Department of Buildings.

Other significant changes include the following:

ARTICLE 7 INDEMNIFICATION

Changes have been made to the indemnification provisions.

ARTICLE 14 FINAL ACCEPTANCE OF WORK
ARTICLE 44 SUBSTANTIAL COMPLETION PAYMENT

The Commissioner is no longer required to issue a substantial completion determination in addition to the already existing requirement that the Engineer issue a substantial completion determination and reach an agreement on a punch list of remaining work. Now, the Engineer, when issuing the punch list to the Contractor, must also include a proposed schedule for the completion of the punch list. The Contractor may propose an alternative schedule that is subject to the approval of the Engineer. If the Contractor fails to respond to the Engineer's proposed schedule, the Engineer's schedule is deemed accepted.

ARTICLE 15 LIQUIDATED DAMAGES

The contract is revised to match Schedule A to provide that liquidated damages are available only until substantial completion.

ARTICLE 17 SUBCONTRACTS

The requirements for prior approval of subcontractors, and for contractors to be responsible for the actions of their subcontractors, have been tightened. The requirement that the Contractor list subcontractors in the City's Payee Information Portal has been added; the provision was previously attached as a rider.

ARTICLE 19 SECURITY DEPOSIT

The provisions governing the return of bid deposits are clarified.

ARTICLE 20 PAYMENT GUARANTEE

The Payment Guaranty provisions, which apply when the City does not require the Contractor to obtain payment bonds, has been significantly revised to track the requirements of State Finance law 137.

ARTICLE 28 RECORDKEEPING FOR EXTRA OR DISPUTED WORK

The recordkeeping requirement that currently apply to payments for Time & Materials for extra work are expressly made applicable to regular work that is paid for on a T & M basis.

ARTICLE 35 EMPLOYEES

The whistleblower provisions of local law are added to the construction contract. They previously have been attached as a rider.

ARTICLE 38 PAYROLL REPORTS
ARTICLE 77 RECORDS RETENTION

Requirements that records be maintained for six years and directions on how such records must be made available.

ARTICLE 42 PARTIAL PAYMENTS

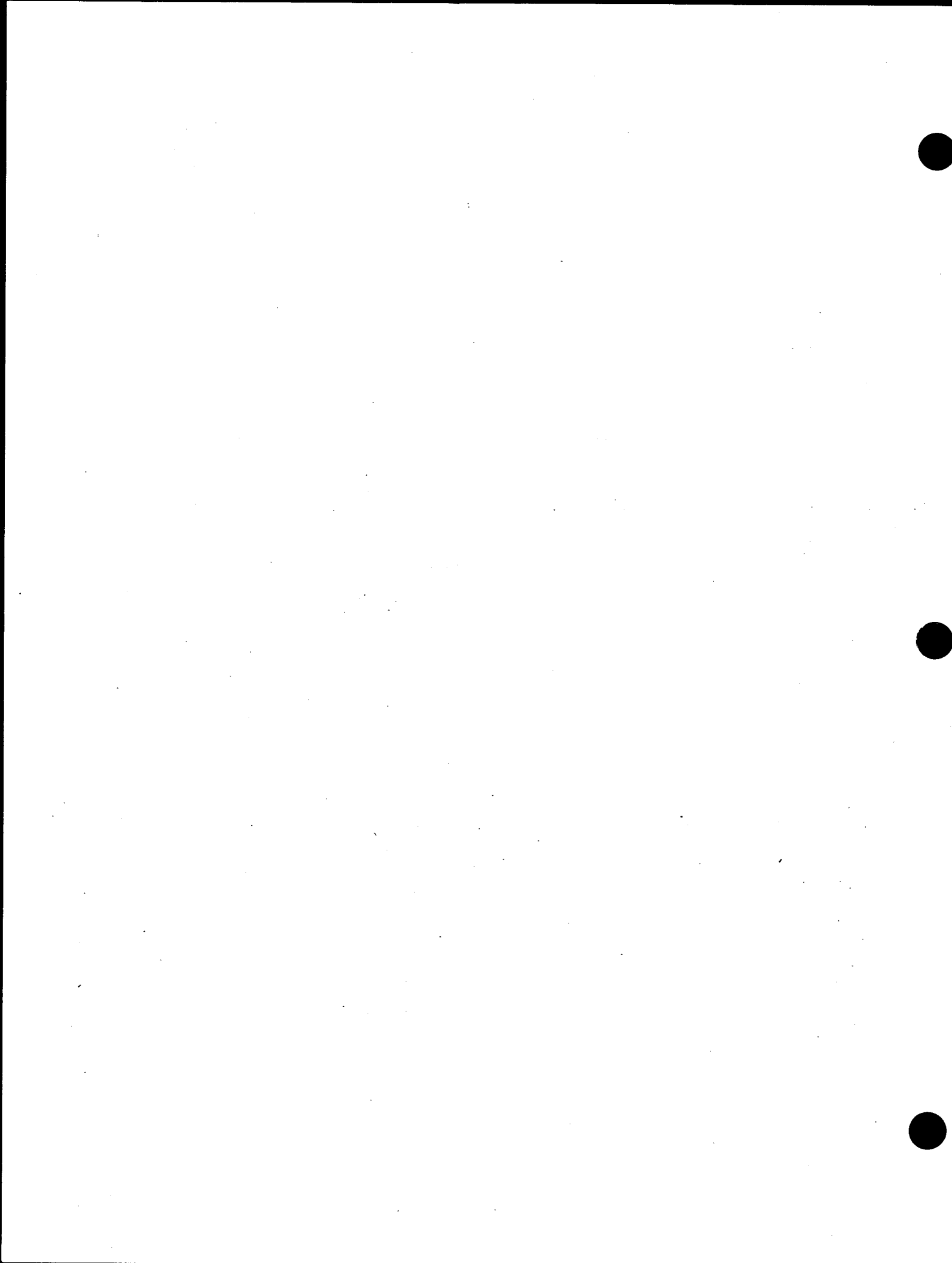
Increased flexibility has been provided for when contractors may submit invoices.

ARTICLE 62 TAX EXEMPTION

The provisions identifying the State tax exemption for municipalities are revised to more clearly describe State law.

CITY OF NEW YORK
STANDARD CONSTRUCTION CONTRACT

December 2013



*CITY OF NEW YORK
STANDARD CONSTRUCTION CONTRACT*

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WITNESSETH:

The parties, in consideration of the mutual agreements contained herein, agree as follows:

CHAPTER I
THE CONTRACT AND DEFINITIONS

ARTICLE 1. THE CONTRACT

1.1 Except for titles, subtitles, headings, running headlines, tables of contents and indices (all of which are printed herein merely for convenience), the following, except for such portions thereof as may be specifically excluded, shall be deemed to be part of this Contract:

1.1.1 All provisions required by law to be inserted in this Contract, whether actually inserted or not;

1.1.2 The Contract Drawings and Specifications;

1.1.3 The General Conditions and Special Conditions, if any;

1.1.4 The Contract;

1.1.5 The Information for Bidders; Request for Proposals; Notice of Solicitation and Proposal For Bids; Bid or Proposal, and, if used, the Bid Booklet;

1.1.6 All Addenda issued prior to the receipt of the bids; the Notice of Award; Performance and Payment Bonds, if required; and the Notice to Proceed or the Order to Work.

1.2 Should any conflict occur in or between the Drawings and Specifications, the Contractor shall be deemed to have estimated the most expensive way of doing the Work, unless the Contractor shall have asked for and obtained a decision in writing from the Commissioner of the Agency that is entering into this Contract, before the submission of its bid, as to what shall govern.

ARTICLE 2. DEFINITIONS

2.1 The following words and expressions, or pronouns used in their stead, shall, wherever they appear in this Contract, be construed as follows, unless a different meaning is clear from the context:

2.1.1 "**Addendum**" or "**Addenda**" shall mean the additional Contract provisions and/or technical clarifications issued in writing by the Commissioner prior to the receipt of bids.

2.1.2 "**Agency**" shall mean a city, county, borough or other office, position, department, division, bureau, board or commission, or a corporation, institution or agency of government, the expenses of which are paid in whole or in part from the City treasury.

2.1.3 "**Agency Chief Contracting Officer**" (ACCO) shall mean a person delegated authority by the Commissioner to organize and supervise the procurement activity of subordinate Agency staff in conjunction with the CCPO, or his/her duly authorized representative.

2.1.4 "**Allowance**" shall mean a sum of money which the Agency may include in the total amount of the Contract for such specific contingencies as the Agency believes may be necessary to complete the Work, *e.g.*, lead or asbestos remediation, and for which the Contractor will be paid on the basis of stipulated unit prices or a formula set forth in the Contract or negotiated between the parties provided, however, that if the Contractor is not directed to use the Allowance, the Contractor shall have no right to such money and it shall be deducted from the total amount of the Contract.

2.1.5 "**City**" shall mean the City of New York.

2.1.6 "**City Chief Procurement Officer**" (CCPO) shall mean a person delegated authority by the Mayor to coordinate and oversee the procurement activity of Mayoral agency staff, including the ACCO and any offices which have oversight responsibility for the procurement of construction, or his/her duly authorized representative.

2.1.7 "**Commissioner**" shall mean the head of the Agency that has entered into this Contract, or his/her duly authorized representative.

2.1.8 "**Comptroller**" shall mean the Comptroller of the City of New York.

2.1.9 "**Contract**" or "**Contract Documents**" shall mean each of the various parts of the contract referred to in Article 1 hereof, both as a whole and severally.

2.1.10 "**Contract Drawings**" shall mean only those drawings specifically entitled as such and listed in the Specifications or in any Addendum, or any drawings furnished by the Commissioner, pertaining or supplemental thereto.

2.1.11 "**Contract Work**" shall mean everything required to be furnished and done by the Contractor by any one or more of the parts of the Contract referred to in Article 1, except Extra Work as hereinafter defined.

2.1.12 "**Contractor**" shall mean the entity which executed this Contract, whether a corporation, firm, partnership, joint venture, individual, or any combination thereof, and its, their, his/her successors, personal representatives, executors, administrators, and assigns, and any person, firm, partnership, joint venture, individual, or corporation which shall at any time be substituted in the place of the Contractor under this Contract.

2.1.13 "**Days**" shall mean calendar days, except where otherwise specified.

2.1.14 "**Engineer**" or "**Architect**" or "**Project Manager**" shall mean the person so designated in writing by the Commissioner in the Notice to Proceed or the Order to Work to act as such in relation to this Contract, including a private Architect or Engineer or Project Manager, as the case may be. Subject to written approval by the Commissioner, the Engineer, Architect or Project Manager may designate an authorized representative.

2.1.15 "**Engineering Audit Officer**" (EAO) shall mean the person so designated by the Commissioner to perform responsible auditing functions hereunder.

2.1.16 "**Extra Work**" shall mean Work other than that required by the Contract at the time of award which is authorized by the Commissioner pursuant to Chapter VI of this Contract.

2.1.17 "**Federal-Aid Contract**" shall mean a contract in which the United States (federal) Government provides financial funding as so designated in the Information for Bidders.

2.1.18 "**Final Acceptance**" shall mean final written acceptance of all the Work by the Commissioner, a copy of which shall be sent to the Contractor.

2.1.19 "**Final Approved Punch List**" shall mean a list, approved pursuant to Article 14.2.2, specifying those items of Work to be completed by the Contractor after Substantial Completion and dates for the completion of each item of Work.

2.1.20 "**Law**" or "**Laws**" shall mean the Constitution of the State of New York, the New York City Charter, the New York City Administrative Code, a statute of the United States or of the State of New York, a local law of the City of New York, any ordinance, rule or regulation having the force of law, or common law.

2.1.21 "**Materialman**" shall mean any corporation, firm, partnership, joint venture, or individual, other than employees of the Contractor, who or which contracts with the Contractor or any Subcontractor, to fabricate or deliver, or who actually fabricates or delivers, plant, materials or equipment to be incorporated in the Work.

2.1.22 "**Means and Methods of Construction**" shall mean the labor, materials, temporary structures, tools, plant, and construction equipment, and the manner and time of their use, necessary to accomplish the result intended by this Contract.

2.1.23 "**Notice to Proceed**" or "**Order to Work**" shall mean the written notice issued by the Commissioner specifying the time for commencement of the Work and the Engineer, Architect or Project Manager.

2.1.24 "**Other Contractor(s)**" shall mean any contractor (other than the entity which executed this Contract or its Subcontractors) who or which has a contract with the City for work on or adjacent to the building or Site of the Work.

2.1.25 "**Payroll Taxes**" shall mean State Unemployment Insurance (SUI), Federal Unemployment Insurance (FUI), and payments pursuant to the Federal Insurance Contributions Act (FICA).

2.1.26 "**Project**" shall mean the public improvement to which this Contract relates.

2.1.27 "**Procurement Policy Board**" (PPB) shall mean the Agency of the City of New York whose function is to establish comprehensive and consistent procurement policies and rules which shall have broad application throughout the City.

2.1.28 "**Required Quantity**" in a unit price Contract shall mean the actual quantity of any item of Work or materials which is required to be performed or furnished in order to comply with the Contract.

2.1.29 "**Resident Engineer**" shall mean the representative of the Commissioner duly designated by the Commissioner to be his/her representative at the site of the Work.

2.1.30 "**Site**" shall mean the area upon or in which the Contractor's operations are carried on, and such other areas adjacent thereto as may be designated as such by the Engineer.

2.1.31 "**Small Tools**" shall mean items that are ordinarily required for a worker's job function, including but not limited to, equipment that ordinarily has no licensing, insurance

or substantive storage costs associated with it; such as circular and chain saws, impact drills, threaders, benders, wrenches, socket tools, etc.

2.1.32 "**Specifications**" shall mean all of the directions, requirements, and standards of performance applying to the Work as hereinafter detailed and designated under the Specifications.

2.1.33 "**Subcontractor**" shall mean any person, firm or corporation, other than employees of the Contractor, who or which contracts with the Contractor or with its subcontractors to furnish, or actually furnishes labor, or labor and materials, or labor and equipment, or superintendence, supervision and/or management at the Site. Wherever the word Subcontractor appears, it shall also mean sub-Subcontractor.

2.1.34 "**Substantial Completion**" shall mean the written determination by the Engineer that the Work required under this Contract is substantially, but not entirely, complete and the approval of the **Final Approved Punch List**.

2.1.35 "**Work**" shall mean all services required to complete the Project in accordance with the Contract Documents, including without limitation, labor, material, superintendence, management, administration, equipment, and incidentals, and obtaining any and all permits, certifications and licenses as may be necessary and required to complete the Work, and shall include both Contract Work and Extra Work.

CHAPTER II THE WORK AND ITS PERFORMANCE

ARTICLE 3. CHARACTER OF THE WORK

3.1 Unless otherwise expressly provided in the **Contract Drawings, Specifications, and Addenda**, the **Work** shall be performed in accordance with the best modern practice, utilizing, unless otherwise specified in writing, new and unused materials of standard first grade quality and workmanship and design of the highest quality, to the satisfaction of the **Commissioner**.

ARTICLE 4. MEANS AND METHODS OF CONSTRUCTION

4.1 Unless otherwise expressly provided in the **Contract Drawings, Specifications, and Addenda**, the **Means and Methods of Construction** shall be such as the Contractor may choose; subject, however, to the **Engineer's** right to reject the **Means and Methods of Construction** proposed by the Contractor which in the opinion of the **Engineer**:

4.1.1 Will constitute or create a hazard to the **Work**, or to persons or property; or

4.1.2 Will not produce finished **Work** in accordance with the terms of the **Contract**; or

4.1.3 Will be detrimental to the overall progress of the **Project**.

4.2 The **Engineer's** approval of the Contractor's **Means and Methods of Construction**, or his/her failure to exercise his/her right to reject such means or methods, shall not relieve the Contractor of its obligation to complete the **Work** as provided in this **Contract**; nor shall the exercise of such right to reject create a cause of action for damages.

ARTICLE 5. COMPLIANCE WITH LAWS

5.1 The **Contractor** shall comply with all **Laws** applicable to this **Contract** and to the **Work** to be done hereunder.

5.2 Procurement Policy Board Rules: This **Contract** is subject to the Rules of the **PPB** ("PPB Rules") in effect at the time of the bid opening for this **Contract**. In the event of a conflict between the **PPB** Rules and a provision of this **Contract**, the **PPB** Rules shall take precedence.

5.3 Noise Control Code provisions.

5.3.1 In accordance with the provisions of Section 24-216(b) of the Administrative Code of the **City** ("Administrative Code"), Noise Abatement Contract Compliance, devices and activities which will be operated, conducted, constructed or manufactured pursuant to this **Contract** and which are subject to the provisions of the **City** Noise Control Code shall be operated, conducted, constructed, or manufactured without causing a violation of the Administrative Code. Such devices and activities shall incorporate advances in the art of noise control development for the kind and level of noise emitted or produced by such devices and activities, in accordance with regulations issued by the **Commissioner** of the **City** Department of Environmental Protection.

5.3.2 The **Contractor** agrees to comply with Section 24-219 of the Administrative Code and implementing rules codified at 15 Rules of the City of New York ("RCNY") Section 28-100 *et seq.* In accordance with such provisions, the **Contractor**, if the **Contractor** is the responsible party under such regulations, shall prepare and post a Construction Noise Mitigation Plan at each **Site**, in which the **Contractor** shall certify that all construction tools and equipment have been maintained so that they operate at normal manufacturers operating specifications. If the **Contractor** cannot make this certification, it must have in place an Alternative Noise Mitigation Plan approved by the **City** Department of Environmental Protection. In addition, the **Contractor's** certified Construction Noise Mitigation Plan is subject inspection by the **City** Department of Environmental Protection in accordance with Section 28-101 of Title 15 of RCNY. No **Contract Work** may take place at a **Site** unless there is a Construction Noise Mitigation Plan or approved Alternative Noise Mitigation Plan in place. In addition, the **Contractor** shall create and implement a noise mitigation training program. Failure to comply with these requirements may result in fines and other penalties pursuant to the applicable provisions of the Administrative Code and RCNY.

5.4 Ultra Low Sulfur Diesel Fuel: In accordance with the provisions of Section 24-163.3 of the Administrative Code, the **Contractor** specifically agrees as follows:

5.4.1 Definitions. For purposes of this Article 5.4, the following definitions apply:

5.4.1(a) "Contractor" means any person or entity that enters into a Public Works Contract with a **City Agency**, or any person or entity that enters into an agreement with such person or entity, to perform work or provide labor or services related to such Public Works Contract.

5.4.1(b) "Motor Vehicle" means any self-propelled vehicle designed for transporting persons or property on a street or highway.

5.4.1(c) "Nonroad Engine" means an internal combustion engine (including the fuel system) that is not used in a Motor Vehicle or a vehicle used solely for competition, or that is not subject to standards promulgated under Section 7411 or Section 7521 of

Title 42 of the United States Code, except that this term shall apply to internal combustion engines used to power generators, compressors or similar equipment used in any construction program or project.

5.4.1(d) "Nonroad Vehicle" means a vehicle that is powered by a Nonroad Engine, fifty (50) horsepower and greater, and that is not a Motor Vehicle or a vehicle used solely for competition, which shall include, but not be limited to, excavators, backhoes, cranes, compressors, generators, bulldozers, and similar equipment, except that this term shall not apply to horticultural maintenance vehicles used for landscaping purposes that are powered by a Nonroad Engine of sixty-five (65) horsepower or less and that are not used in any construction program or project.

5.4.1(e) "Public Works Contract" means a contract with a **City Agency** for a construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge; a contract with a **City Agency** for the preparation for any construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge; or a contract with a **City Agency** for any final work involved in the completion of any construction program or project involving the construction, demolition, restoration, rehabilitation, repair, renovation, or abatement of any building, structure, tunnel, excavation, roadway, park or bridge.

5.4.1(f) "Ultra Low Sulfur Diesel Fuel" means diesel fuel that has a sulfur content of no more than fifteen parts per million (15 ppm).

5.4.2 Ultra Low Sulfur Diesel Fuel

5.4.2(a) All **Contractors** shall use Ultra Low Sulfur Diesel Fuel in diesel-powered Nonroad Vehicles in the performance of this **Contract**.

5.4.2(b) Notwithstanding the requirements of Article 5.4.2(a), **Contractors** may use diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm) to fulfill the requirements of this Article 5.4.2, where the Commissioner of the **City Department of Environmental Protection** ("DEP Commissioner") has issued a determination that a sufficient quantity of Ultra Low Sulfur Diesel Fuel is not available to meet the needs of **Agencies** and **Contractors**. Any such determination shall expire after six (6) months unless renewed.

5.4.2(c) **Contractors** shall not be required to comply with this Article 5.4.2 where the **City Agency** letting this **Contract** makes a written finding, which is approved, in writing, by the DEP Commissioner, that a sufficient quantity of Ultra Low Sulfur Diesel Fuel, or diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm) is not available to meet the requirements of Section 24-163.3 of the Administrative Code, provided that such **Contractor** in its fulfillment of the requirements of this **Contract**, to the extent practicable, shall use whatever quantity of Ultra Low Sulfur Diesel Fuel or diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm) is available. Any finding made pursuant to this Article 5.4.2(c) shall expire after sixty (60) **Days**, at which time the requirements of this Article 5.4.2 shall be in full force and effect unless the **City Agency** renews the finding in writing and such renewal is approved by the DEP Commissioner.

5.4.2(d) **Contractors** may check on determinations and approvals issued by the DEP Commissioner pursuant to Section 24-163.3 of the Administrative Code, if any, at www.dep.nyc.gov or by contacting the **City Agency** letting this **Contract**.

5.4.2(e) The requirements of this Article 5.4.2 do not apply where they are precluded by federal or State funding requirements or where the **Contract** is an emergency procurement.

5.4.3 Best Available Technology

5.4.3(a) All **Contractors** shall utilize the best available technology for reducing the emission of pollutants for diesel-powered Nonroad Vehicles in the performance of this **Contract**. For determinations of best available technology for each type of diesel-powered Nonroad Vehicle, **Contractors** shall comply with the regulations of the City Department of Environmental Protection, as and when adopted, Chapter 14 of Title 15 of the Rules of the City of New York (RCNY). The **Contractor** shall fully document all steps in the best available technology selection process and shall furnish such documentation to the **City Agency** or the DEP Commissioner upon request. The **Contractor** shall retain all documentation generated in the best available technology selection process for as long as the selected best available technology is in use.

5.4.3(b) No **Contractor** shall be required to replace best available technology for reducing the emission of pollutants or other authorized technology utilized for a diesel-powered Nonroad Vehicle in accordance with the provisions of this Article 5.4.3 within three (3) years of having first utilized such technology for such vehicle.

5.4.3(c) This Article 5.4.3 shall not apply to any vehicle used to satisfy the requirements of a specific Public Works Contract for fewer than twenty (20) Days.

5.4.3(d) The **Contractor** shall not be required to comply with this Article 5.4.3 with respect to a diesel-powered Nonroad Vehicle under the following circumstances:

5.4.3(d)(i) Where the **City Agency** makes a written finding, which is approved, in writing, by the DEP Commissioner, that the best available technology for reducing the emission of pollutants as required by this Article 5.4.3 is unavailable for such vehicle, the **Contractor** shall use whatever technology for reducing the emission of pollutants, if any, is available and appropriate for such vehicle.

5.4.3(d)(ii) Where the DEP Commissioner has issued a written waiver based upon the **Contractor** having demonstrated to the DEP Commissioner that the use of the best available technology for reducing the emission of pollutants might endanger the operator of such vehicle or those working near such vehicle, due to engine malfunction, the **Contractor** shall use whatever technology for reducing the emission of pollutants, if any, is available and appropriate for such vehicle, which would not endanger the operator of such vehicle or those working near such vehicle.

5.4.3(d)(iii) In determining which technology to use for the purposes of Articles 5.4.3(d)(i) and 5.4.3(d)(ii) above, the **Contractor** shall primarily consider the reduction in emissions of particulate matter and secondarily consider the reduction in emissions of nitrogen oxides associated with the use of such

technology, which shall in no event result in an increase in the emissions of either such pollutant.

5.4.3(d)(iv) The **Contractor** shall submit requests for a finding or a waiver pursuant to this Article 5.4.3(d) in writing to the DEP Commissioner, with a copy to the **ACCO** of the **City Agency** letting this **Contract**. Any finding or waiver made or issued pursuant to Articles 5.4.3(d)(i) and 5.4.3(d)(ii) above shall expire after one hundred eighty (180) **Days**, at which time the requirements of Article 5.4.3(a) shall be in full force and effect unless the **City Agency** renews the finding, in writing, and the DEP Commissioner approves such finding, in writing, or the DEP Commissioner renews the waiver, in writing.

5.4.3(e) The requirements of this Article 5.4.3 do not apply where they are precluded by federal or State funding requirements or where the **Contract** is an emergency procurement.

5.4.4 Section 24-163 of the Administrative Code. The **Contractor** shall comply with Section 24-163 of the Administrative Code related to the idling of the engines of motor vehicles while parking.

5.4.5 Compliance

5.4.5(a) The **Contractor's** compliance with Article 5.4 may be independently monitored. If it is determined that the **Contractor** has failed to comply with any provision of Article 5.4, any costs associated with any independent monitoring incurred by the **City** shall be reimbursed by the **Contractor**.

5.4.5(b) Any **Contractor** who violates any provision of Article 5.4, except as provided in Article 5.4.5(c) below, shall be liable for a civil penalty between the amounts of one thousand (\$1,000) and ten thousand (\$10,000) dollars, in addition to twice the amount of money saved by such **Contractor** for failure to comply with Article 5.4.

5.4.5(c) No **Contractor** shall make a false claim with respect to the provisions of Article 5.4 to a **City Agency**. Where a **Contractor** has been found to have done so, such **Contractor** shall be liable for a civil penalty of twenty thousand (\$20,000) dollars, in addition to twice the amount of money saved by such **Contractor** in association with having made such false claim.

5.4.6 Reporting

5.4.6(a) For all Public Works Contracts covered by this Article 5.4, the **Contractor** shall report to the **City Agency** the following information:

5.4.6(a)(i) The total number of diesel-powered Nonroad Vehicles used to fulfill the requirements of this Public Works Contract;

5.4.6(a)(ii) The number of such Nonroad Vehicles that were powered by Ultra Low Sulfur Diesel Fuel;

5.4.6(a)(iii) The number of such Nonroad Vehicles that utilized the best available technology for reducing the emission of pollutants, including a breakdown by vehicle model and the type of technology;

5.4.6(a)(iv) The number of such Nonroad Vehicles that utilized such other authorized technology in accordance with Article 5.4.3, including a breakdown by vehicle model and the type of technology used for each such vehicle;

5.4.6(a)(v) The locations where such Nonroad Vehicles were used; and

5.4.6(a)(vi) Where a determination is in effect pursuant to Article 5.4.2(b) or 5.4.2(c), detailed information concerning the Contractor's efforts to obtain Ultra Low Sulfur Diesel Fuel or diesel fuel that has a sulfur content of no more than thirty parts per million (30 ppm).

5.4.6(b) The Contractor shall submit the information required by Article 5.4.6(a) at the completion of Work under the Public Works Contract and on a yearly basis no later than August 1 throughout the term of the Public Works Contract. The yearly report shall cover Work performed during the preceding fiscal year (July 1 - June 30).

5.5 Ultra Low Sulfur Diesel Fuel. In accordance with the Coordinated Construction Act for Lower Manhattan, as amended:

5.5.1 Definitions. For purposes of this Article 5.5, the following definitions apply:

5.5.1(a) "Lower Manhattan" means the area to the south of and within the following lines: a line beginning at a point where the United States pierhead line in the Hudson River as it exists now or may be extended would intersect with the southerly line of West Houston Street in the Borough of Manhattan extended, thence easterly along the southerly side of West Houston Street to the southerly side of Houston Street, thence easterly along the southerly side of Houston Street to the southerly side of East Houston Street, thence northeasterly along the southerly side of East Houston Street to the point where it would intersect with the United States pierhead line in the East River as it exists now or may be extended, including tax lots within or immediately adjacent thereto.

5.5.1(b) "Lower Manhattan Redevelopment Project" means any project in Lower Manhattan that is funded in whole or in part with federal or State funding, or any project intended to improve transportation between Lower Manhattan and the two air terminals in the City known as LaGuardia Airport and John F. Kennedy International Airport, or between Lower Manhattan and the air terminal in Newark known as Newark Liberty International Airport, and that is funded in whole or in part with federal funding.

5.5.1(c) "Nonroad Engine" means an internal combustion engine (including the fuel system) that is not used in a Motor Vehicle or a vehicle used solely for competition, or that is not subject to standards promulgated under Section 7411 or Section 7521 of Title 42 of the United States Code, except that this term shall apply to internal combustion engines used to power generators, compressors or similar equipment used in any construction program or project.

5.5.1(d) "Nonroad Vehicle" means a vehicle that is powered by a Nonroad Engine, fifty (50) horsepower (HP) and greater, and that is not a Motor Vehicle or a vehicle used solely for competition, which shall include, but not be limited to, excavators, backhoes, cranes, compressors, generators, bulldozers, and similar equipment, except

that this terms shall not apply to horticultural maintenance vehicles used for landscaping purposes that are powered by a Nonroad Engine of sixty-five (65) HP or less and that are not used in any construction program or project.

5.5.1(e) "Ultra Low Sulfur Diesel Fuel" means diesel fuel that has a sulfur content of no more than fifteen parts per million (15 ppm).

5.5.2 Requirements. **Contractors** and **Subcontractors** are required to use only Ultra Low Sulfur Diesel Fuel to power the diesel-powered Nonroad Vehicles with engine HP rating of fifty (50) HP and above used on a Lower Manhattan Redevelopment Project and, where practicable, to reduce the emission of pollutants by retrofitting such Nonroad Vehicles with oxidation catalysts, particulate filters, or technology that achieves lowest particulate matter emissions.

5.6 Pesticides. In accordance with Section 17-1209 of the Administrative Code, to the extent that the **Contractor** or any **Subcontractor** applies pesticides to any property owned or leased by the **City**, the **Contractor**, and any **Subcontractor** shall comply with Chapter 12 of the Administrative Code.

5.7 Waste Treatment, Storage, and Disposal Facilities and Transporters. In connection with the **Work**, the **Contractor** and any **Subcontractor** shall use only those waste treatment, storage, and disposal facilities and waste transporters that possess the requisite license, permit or other governmental approval necessary to treat, store, dispose, or transport the waste, materials or hazardous substances.

5.8 Environmentally Preferable Purchasing. The **Contractor** shall ensure that products purchased or leased by the **Contractor** or any **Subcontractor** for the **Work** that are not specified by the **City** or are submitted as equivalents to a product specified by the **City** comply with the requirements of the New York City Environmentally Preferable Purchasing Program contained in Chapter 11 of Title 43 of the RCNY, pursuant to Chapter 3 of Title 6 of the Administrative Code.

ARTICLE 6. INSPECTION

6.1 During the progress of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall at all times afford the representatives of the **City** every reasonable, safe, and proper facility for inspecting all **Work** done or being done at the **Site** and also for inspecting the manufacture or preparation of materials and equipment at the place of such manufacture or preparation.

6.2 The **Contractor's** obligation hereunder shall include the uncovering or taking down of finished **Work** and its restoration thereafter; provided, however, that the order to uncover, take down and restore shall be in writing, and further provided that if **Work** thus exposed proves satisfactory, and if the **Contractor** has complied with Article 6.1, such uncovering or taking down and restoration shall be considered an item of **Extra Work** to be paid for in accordance with the provisions of Article 26. If the **Work** thus exposed proves unsatisfactory, the **City** has no obligation to compensate the **Contractor** for the uncovering, taking down or restoration.

6.3 Inspection and approval by the **Commissioner**, the **Engineer**, **Project Manager**, or **Resident Engineer**, of finished **Work** or of **Work** being performed, or of materials and equipment at the place of manufacture or preparation, shall not relieve the **Contractor** of its obligation to perform the **Work** in strict accordance with the **Contract**. Finished or unfinished **Work** not found to be in strict accordance with the **Contract** shall be replaced as directed by the **Engineer**, even though such **Work** may have been previously approved and paid for. Such corrective **Work** is **Contract Work** and shall not be deemed **Extra Work**.

6.4 Rejected **Work** and materials shall be promptly taken down and removed from the **Site**, which must at all times be kept in a reasonably clean and neat condition.

**ARTICLE 7. PROTECTION OF WORK AND OF PERSONS
AND PROPERTY; NOTICES AND INDEMNIFICATION**

7.1 During the performance of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall be under an absolute obligation to protect the finished and unfinished **Work** against any damage, loss, injury, theft and/or vandalism and in the event of such damage, loss, injury, theft and/or vandalism, it shall promptly replace and/or repair such **Work** at the **Contractor's** sole cost and expense, as directed by the **Resident Engineer**. The obligation to deliver finished **Work** in strict accordance with the **Contract** prior to **Final Acceptance** shall be absolute and shall not be affected by the **Resident Engineer's** approval of, or failure to prohibit, the **Means and Methods of Construction** used by the **Contractor**.

7.2 During the performance of the **Work** and up to the date of **Final Acceptance**, the **Contractor** shall take all reasonable precautions to protect all persons and the property of the **City** and of others from damage, loss or injury resulting from the **Contractor's**, and/or its **Subcontractors'** operations under this **Contract**. The **Contractor's** obligation to protect shall include the duty to provide, place or replace, and adequately maintain at or about the **Site** suitable and sufficient protection such as lights, barricades, and enclosures.

7.3 The **Contractor** shall comply with the notification requirements set forth below in the event of any loss, damage or injury to **Work**, persons or property, or any accidents arising out of the operations of the **Contractor** and/or its **Subcontractors** under this **Contract**.

7.3.1 The **Contractor** shall make a full and complete report in writing to the **Resident Engineer** within three (3) **Days** after the occurrence.

7.3.2 The **Contractor** shall also send written notice of any such event to all insurance carriers that issued potentially responsive policies (including commercial general liability insurance carriers for events relating to the **Contractor's** own employees) no later than twenty (20) days after such event and again no later than twenty (20) days after the initiation of any claim and/or action resulting therefrom. Such notice shall contain the following information: the number of the insurance policy, the name of the Named Insured, the date and location of the incident, and the identity of the persons injured or property damaged. For any policy on which the **City** and/or the **Engineer, Architect, or Project Manager** are Additional Insureds, such notice shall expressly specify that "this notice is being given on behalf of the City of New York as Additional Insured, such other Additional Insureds, as well as the Named Insured."

7.3.2(a) Whenever such notice is sent under a policy on which the **City** is an Additional Insured, the **Contractor** shall provide copies of the notice to the **Comptroller, the Commissioner** and the **City Corporation Counsel**. The copy to the **Comptroller** shall be sent to the Insurance Unit, NYC Comptroller's Office, 1 Centre Street – Room 1222, New York, New York, 10007. The copy to the **Commissioner** shall be sent to the address set forth in Schedule A of the General Conditions. The copy to the **City Corporation Counsel** shall be sent to Insurance Claims Specialist, Affirmative Litigation Division, New York City Law Department, 100 Church Street, New York, New York 10007.

7.3.2(b) If the **Contractor** fails to provide any of the foregoing notices to any appropriate insurance carrier(s) in a timely and complete manner, the **Contractor** shall indemnify the **City** for all losses, judgments, settlements, and expenses, including reasonable attorneys' fees, arising from an insurer's disclaimer of coverage citing late notice by or on behalf of the **City**.

7.4 To the fullest extent permitted by law, the **Contractor** shall defend, indemnify, and hold the **City**, its employees, and officials (the "Indemnitees") harmless against any and all claims (including but not limited to claims asserted by any employee of the **Contractor** and/or its **Subcontractors**) and costs and expenses of whatever kind (including but not limited to payment or reimbursement of attorneys' fees and disbursements) allegedly arising out of or in any way related to the operations of the **Contractor** and/or its **Subcontractors** in the performance of this **Contract** or from the **Contractor's** and/or its **Subcontractors'** failure to comply with any of the provisions of this **Contract** or of the **Law**. Such costs and expenses shall include all those incurred in defending the underlying claim and those incurred in connection with the enforcement of this Article 7.4 by way of cross-claim, third-party claim, declaratory action or otherwise. The parties expressly agree that the indemnification obligation hereunder contemplates (1) full indemnity in the event of liability imposed against the Indemnitees without negligence and solely by reason of statute, operation of **Law** or otherwise; and (2) partial indemnity in the event of any actual negligence on the part of the Indemnitees either causing or contributing to the underlying claim (in which case, indemnification will be limited to any liability imposed over and above that percentage attributable to actual fault whether by statute, by operation of **Law**, or otherwise). Where partial indemnity is provided hereunder, all costs and expenses shall be indemnified on a pro rata basis.

7.4.1 Indemnification under Article 7.4 or any other provision of the **Contract** shall operate whether or not **Contractor** or its **Subcontractors** have placed and maintained the insurance specified under Article 22.

7.5 The provisions of this Article 7 shall not be deemed to create any new right of action in favor of third parties against the **Contractor** or the **City**.

CHAPTER III TIME PROVISIONS

ARTICLE 8. COMMENCEMENT AND PROSECUTION OF THE WORK

8.1 The **Contractor** shall commence the **Work** on the date specified in the **Notice to Proceed** or the **Order to Work**. The time for performance of the **Work** under the **Contract** shall be computed from the date specified in the **Notice to Proceed** or the **Order to Work**. **TIME BEING OF THE ESSENCE** to the **City**, the **Contractor** shall thereafter prosecute the **Work** diligently, using such **Means and Methods of Construction** as are in accord with Article 4 herein and as will assure its completion not later than the date specified in this **Contract**, or on the date to which the time for completion may be extended.

ARTICLE 9. PROGRESS SCHEDULES

9.1 To enable the **Work** to be performed in an orderly and expeditious manner, the **Contractor**, within fifteen (15) **Days** after the **Notice to Proceed** or **Order to Work**, unless otherwise directed by the **Engineer**, shall submit to the **Engineer** a proposed progress schedule based on the Critical Path Method in the form of a bar graph or in such other form as specified by the **Engineer**, and monthly cash flow requirements, showing:

9.1.1 The anticipated time of commencement and completion of each of the various operations to be performed under this **Contract**; and

9.1.2 The sequence and interrelation of each of these operations with the others and with those of other related contracts; and

9.1.3 The estimated time required for fabrication or delivery, or both, of all materials and equipment required for the **Work**, including the anticipated time for obtaining required approvals pursuant to Article 10; and

9.1.4 The estimated amount in dollars the **Contractor** will claim on a monthly basis.

9.2 The proposed schedule shall be revised as directed by the **Engineer**, until finally approved by the **Engineer**, and after such approval, subject to the provisions of Article 11, shall be strictly adhered to by the **Contractor**.

9.3 If the **Contractor** shall fail to adhere to the approved progress schedule, or to the schedule as revised pursuant to Article 11, it shall promptly adopt such other or additional **Means and Methods of Construction**, at its sole cost and expense, as will make up for the time lost and will assure completion in accordance with the approved progress schedule. The approval by the **City** of a progress schedule which is shorter than the time allotted under the **Contract** shall not create any liability for the **City** if the approved progress schedule is not met.

9.4 The **Contractor** will not receive any payments until the proposed progress schedule is submitted.

ARTICLE 10. REQUESTS FOR INFORMATION OR APPROVAL

10.1 From time to time as the **Work** progresses and in the sequence indicated by the approved progress schedule, the **Contractor** shall submit to the **Engineer** a specific request in writing for each item of information or approval required by the **Contractor**. These requests shall state the latest date upon which the information or approval is actually required by the **Contractor**, and shall be submitted in a reasonable time in advance thereof to provide the **Engineer** a sufficient time to act upon such submissions, or any necessary re-submissions thereof.

10.2 The **Contractor** shall not have any right to an extension of time on account of delays due to the **Contractor's** failure to submit requests for the required information or the required approval in accordance with the above requirements.

ARTICLE 11. NOTICE OF CONDITIONS CAUSING DELAY AND DOCUMENTATION OF DAMAGES CAUSED BY DELAY

11.1 After the commencement of any condition which is causing or may cause a delay in completion of the **Work**, including conditions for which the **Contractor** may be entitled to an extension of time, the following notifications and submittals are required:

11.1.1 Within seven (7) **Days** after the commencement of such condition, the **Contractor** must notify the **Engineer** 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.

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, and every thirty (30) **Days** thereafter for as long as such damages are being incurred, the **Contractor** shall submit to the **Commissioner** verified written statements of the details and the amounts of such damages, together with documentary evidence of such damages, ("statement of delay damages") as further detailed in Article 11.6. 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. On failure of the **Contractor** to strictly comply with all of 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 arising under or by reason of this **Contract** shall not be different from or in excess of the statements made and documentation provided pursuant to this Article 11.

11.1.3 Within 60 days of submission of the final verified statement of claims pursuant to Article 11.6, the **Commissioner** shall make a determination as to whether a compensable delay has occurred and, if so, the amount of compensation due the **Contractor**. Notwithstanding the above, the **Commissioner** may make a determination as to whether a compensable delay has occurred at any time after the **Contractor's** first submission of a statement of delay damages provided, however, that the amount of compensation due to the **Contractor** will not be determined until the **Commissioner** determines that the **Work** is delayed after the date set for substantial completion.

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 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 **Project** 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**, 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 Extended delays attributable to the **City** in the review or issuance of change orders, in shop drawing reviews and approvals or as a result of the cumulative impact of multiple change orders, which have a verifiable impact on **Project** costs.

11.4.1.3 The unavailability of the **Site** for an extended period of time that significantly affects the scheduled completion of the **Contract**.

- 11.4.1.4 The issuance by the **Engineer** of a stop work order relative to a substantial portion of the **Work** for a period exceeding thirty (30) **Days**, that was not brought about through any action or omission of the **Contractor**;
- 11.4.1.5 Differing site conditions 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** by a date earlier than the date of **Substantial Completion** provided for in Schedule A unless there is a provision in the **Contract** providing for additional compensation for early completion. No claim may be made for any alleged delay in **Substantial Completion** of the **Work** if the work 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.

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 generally recognized 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 action 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 amount of additional compensation sought and a breakdown of that amount into categories as described in Article 26.2, subject to the limitations set forth 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 Insurance and bond costs;

11.7.1.5 Extended field office costs;

11.7.1.6 Extended **Site** overhead; and

11.7.1.7 Extended home office overhead.

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 11.7.1.6, and an

additional overhead of five (5%) percent 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;
- 11.7.3.2 Consequential damages, including but not limited to interest on monies in dispute, including interest which is paid on such monies, 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;
- 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 Determinations 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 If the parties agree, pursuant to Article 11.1.3 above, that a compensable delay has occurred and agree on the amount of compensation, payment may be made pursuant to a written change order. Payment pursuant to such change order is subject to pre-audit by the **Engineering Audit Officer**, and may be post-audited by the **Comptroller** and/or the **Agency**.

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 the **Engineer** to issue any 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** 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** 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** within ten (10) **Days** of the **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** proposes alternative dates, then, within a reasonable time after receipt, the **Engineer**, in a written notification to the **Contractor**, shall approve the **Contractor's** completion dates or, if they are unable to agree, the **Engineer** shall establish dates for the completion of each item of **Work**. If the **Contractor** neither accepts the dates nor proposes alternative dates within ten (10) **Days**, the schedule proposed by the **Engineer** shall be deemed accepted. 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**, 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** 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** 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** inspection if, upon such inspection, the **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** for the purpose of **Substantial Completion** or **Final Acceptance** shall be made within ten (10) **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** 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** 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** shall be made within ten (10) **Days** after receipt of the **Contractor's** written request therefor.

14.7 Initiation of Inspection by the **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** 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** 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** shall issue a written determination of **Substantial Completion** with respect to such part of the **Work**;

16.1.2 the **Contractor** shall be relieved of its absolute obligation to protect such part of the unfinished **Work** in accordance with Article 7;

16.1.3 the **Contractor's** guarantee on such part of the **Work** shall begin on the date of such use by the **City**; and;

16.1.4 the **Contractor** shall be entitled to a return of so much of the amount retained in accordance with Article 21 as it relates to such part of the **Work**, except so much thereof as may be retained under Articles 24 and 44.

CHAPTER IV SUBCONTRACTS AND ASSIGNMENTS

ARTICLE 17. SUBCONTRACTS

17.1 The **Contractor** shall not make subcontracts totaling an amount more than the percentage of the total **Contract** price fixed in Schedule A of the General Conditions, without prior written permission from the **Commissioner**. All subcontracts made by the **Contractor** shall be in writing. No **Work** may be performed by a **Subcontractor** prior to the **Contractor** entering into a written subcontract with the **Subcontractor** and complying with the provisions of this Article 17.

17.2 Before making any subcontracts, the **Contractor** shall submit a written statement to the **Commissioner** giving the name and address of the proposed **Subcontractor**; the portion of the **Work** and materials which it is to perform and furnish; the cost of the subcontract; the VENDEX questionnaire if required; the proposed subcontract if requested by the **Commissioner**; and any other information tending to prove that the proposed **Subcontractor** has the necessary facilities, skill, integrity, past experience, and financial resources to perform the **Work** in accordance with the terms and conditions of this **Contract**.

17.3 In addition to the requirements in Article 17.2, **Contractor** is required to list the **Subcontractor** in the web based Subcontractor Reporting System through the City's Payee Information Portal (PIP), available at www.nyc.gov/pip.¹ For each **Subcontractor** listed, **Contractor** is required to provide the following information: maximum contract value, description of **Subcontractor's** **Work**, start and end date of the subcontract and identification of the **Subcontractor's** industry. Thereafter, **Contractor** will be required to report in the system the payments made to each **Subcontractor** within 30 days of making the payment. If any of the required information changes throughout the Term of the **Contract**, **Contractor** will be required to revise the information in the system.

Failure of the **Contractor** to list a **Subcontractor** and/or to report **Subcontractor** payments in a timely fashion may result in the **Commissioner** declaring the **Contractor** in default of the **Contract** and will subject **Contractor** to liquidated damages in the amount of \$100 per day for each day that the **Contractor** fails to identify a **Subcontractor** along with the required information about the **Subcontractor** and/or fails to report payments to a **Subcontractor**, beyond the time frames set forth herein or in the notice from the **City**. Article 15 shall govern the issue of liquidated damages.

¹ In order to use the new system, a PIP account will be required. Detailed instructions on creating a PIP account and using the new system are also available at www.nyc.gov/pip. Additional assistance with PIP may be obtained by emailing the Financial Information Services Agency Help Desk at pip@fisa.nyc.gov.

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 **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, at http://www.nyc.gov/html/dob/downloads/rules/1_RCNY_101-08.pdf, the Contractor shall provide Commercial General Liability Insurance with limits of at least those required by 1 RCNY section 101-08. 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 with coverage at least as broad as the most recent edition of ISO Forms CG 20 10, CG 20 37, and CG 20 26, as applicable; (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 Broker" 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 for as long as such damages are incurred, 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.

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.

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 signed, 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 Any claims for monies deducted, retained or withheld under the provisions of this **Contract** shall be asserted within six (6) months after the date when such monies otherwise become due and payable hereunder; and

56.2.3 If the **Commissioner** exercises his/her right to terminate the **Contract** pursuant to Article 64, any such action shall be commenced within six (6) months of the date the **Commissioner** exercises said right.

ARTICLE 57. INFRINGEMENT

57.1 The **Contractor** shall be solely responsible for and shall defend, indemnify, and hold the **City** harmless from any and all claims (even if the allegations of the lawsuit are without merit) and judgments for damages and from costs and expenses to which the **City** may be subject to or which it may suffer or incur allegedly arising out of or in connection with any infringement by the **Contractor** of any copyright, trade secrets, trademark or patent rights or any other property or personal right of any third party by the **Contractor** and/or its **Subcontractors** in the performance or completion of the **Work**. Insofar as the facts or **Law** relating to any claim would preclude the **City** from being completely indemnified by the **Contractor**, the **City** shall be partially indemnified by the **Contractor** to the fullest extent permitted by **Law**.

ARTICLE 58. NO CLAIM AGAINST OFFICIALS, AGENTS OR EMPLOYEES

58.1 No claim whatsoever shall be made by the **Contractor** against any official, agent or employee of the **City** for, or on account of, anything done or omitted to be done in connection with this **Contract**.

ARTICLE 59. SERVICE OF NOTICES

59.1 The **Contractor** hereby designates the business address, fax number, and email address specified in its bid, as the place where all notices, directions or other communications to the **Contractor** may be delivered, or to which they may be mailed. Any notice, direction, or communication from either party to the other shall be in writing and shall be deemed to have been given when (i) delivered personally; (ii) sent by certified mail, return receipt requested; (iii) delivered by overnight or same day courier service in a properly addressed envelope with confirmation; or (iv) sent by fax or email and, unless receipt of the fax or e-mail is acknowledged by the recipient by fax or e-mail, deposited in a post office box regularly maintained by the United States Postal Service in a properly addressed, postage prepaid envelope.

59.2 **Contractor's** notice address, email address, or fax number may be changed at any time by an instrument in writing, executed and acknowledged by the **Contractor**, and delivered to the **Commissioner**.

59.3 Nothing herein contained shall, however, be deemed to preclude or render inoperative the service of any notice, direction or other communication upon the **Contractor** personally, or, if the **Contractor** is a corporation, upon any officer thereof.

ARTICLE 60. UNLAWFUL PROVISIONS DEEMED STRICKEN FROM CONTRACT

60.1 If this **Contract** contains any unlawful provision not an essential part of the **Contract** and which shall not appear to have been a controlling or material inducement to the making thereof, the same shall be deemed of no effect and shall, upon notice by either party, be deemed stricken from the **Contract** without affecting the binding force of the remainder.

ARTICLE 61. ALL LEGAL PROVISIONS DEEMED INCLUDED

61.1 It is the intent and understanding of the parties to this **Contract** that each and every provision of **Law** required to be inserted in this **Contract** shall be and is inserted herein. Furthermore, it is hereby stipulated that every such provision is to be deemed to be inserted herein, and if, through mistake or otherwise, any such provision is not inserted, or is not inserted in correct form, then this **Contract** shall forthwith upon the application of either party be amended by such insertion so as to comply strictly with the **Law** and without prejudice to the rights of either party hereunder.

ARTICLE 62. TAX EXEMPTION

62.1 The **City** is exempt from payment of Federal, State, and local taxes, including sales and compensating use taxes of the State of New York and its cities and counties on all tangible personal property sold to the **City** pursuant to the provisions of this **Contract**. These taxes are not to be included in bids. However, this exemption does not apply to tools, machinery, equipment or other property leased by or to the **Contractor**, **Subcontractor** or **Materialman** or to tangible personal property which, even

though it is consumed, is not incorporated into the completed **Work** (consumable supplies) and tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work**. The **Contractor** and its **Subcontractors** and **Materialmen** shall be responsible for and pay any and all applicable taxes, including sales and compensating use taxes, on such leased tools, machinery, equipment or other property and upon all such consumable supplies and tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work**.

62.2 The **Contractor** agrees to sell and the **City** agrees to purchase all tangible personal property, other than consumable supplies and other tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work**, that is required, necessary or proper for or incidental to the construction of the **Project** covered by this **Contract**. The sum paid under this **Contract** for such tangible personal property shall be in full payment and consideration for the sale of such tangible personal property.

62.2.1 The **Contractor** agrees to construct the **Project** and to perform all **Work**, labor and services rendered, necessary, proper or incidental thereto for the sum shown in the bid for the performance of such **Work**, labor, and services, and the sum so paid pursuant to this **Contract** for such **Work**, labor, and services, shall be in full consideration for the performance by the **Contractor** of all its duties and obligations under this **Contract** in connection with said **Work**, labor, and services.

62.3 20 NYCRR Section 541.3(d) provides that a **Contractor's** purchases of tangible personal property that is either incorporated into real property owned by a governmental entity or purchased for and sold to a governmental entity are exempt from sales and use tax. The **City** shall not pay sales tax for any such tangible personal property that it purchases from the **Contractor** pursuant to the **Contract**. With respect to such tangible personal property, the **Contractor**, at the request of the **City**, shall furnish to the **City** such bills of sale and other instruments as may be required by the **City**, properly executed, acknowledged and delivered assuring to the **City** title to such tangible personal property, free of liens and/or encumbrances, and the **Contractor** shall mark or otherwise identify all such tangible personal property as the property of the **City**.

62.4 Title to all tangible personal property to be sold by the **Contractor** to the **City** pursuant to the provisions of the **Contract** shall immediately vest in and become the sole property of the **City** upon delivery of such tangible personal property to the **Site**. Notwithstanding such transfer of title, the **Contractor** shall have the full and continuing responsibility to install such tangible personal property in accordance with the provisions of this **Contract**, protect it, maintain it in a proper condition and forthwith repair, replace and make good any damage thereto, theft or disappearance thereof, and furnish additional tangible personal property in place of any that may be lost, stolen or rendered unusable, without cost to the **City**, until such time as the **Work** covered by the **Contract** is fully accepted by the **City**. Such transfer of title shall in no way affect any of the **Contractor's** obligations hereunder. In the event that, after title has passed to the **City**, any of the tangible personal property is rejected as being defective or otherwise unsatisfactory, title to all such tangible personal property shall be deemed to have been transferred back to the **Contractor**.

62.5 The purchase by **Subcontractors** or **Materialmen** of tangible personal property to be sold hereunder shall be a purchase or procurement for resale to the **Contractor** (either directly or through other **Subcontractors**) and therefore not subject to the aforesaid sales and compensating use taxes, provided that the subcontracts and purchase agreements provide for the resale of such tangible personal property and that such subcontracts and purchase agreements are in a form similar to this **Contract** with respect to the separation of the sale of consumable supplies and tangible personal property that the **Contractor** is required to remove from the **Site** during or upon completion of the **Work** from the **Work** and labor, services, and any other matters to be provided, and provided further that the subcontracts and

purchase agreements provide separate prices for tangible personal property and all other services and matters. Such separation shall actually be followed in practice, including the separation of payments for tangible personal property from the payments for other **Work** and labor and other things to be provided.

62.6 The **Contractor** and its **Subcontractors** and **Materialmen** shall furnish a **Contractor Exempt Purchase Certificate** to all persons, firms or corporations from which they purchase tangible personal property for the performance of the **Work** covered by this **Contract**.

62.7 In the event any of the provisions of this Article 62 shall be deemed to be in conflict with any other provisions of this **Contract** or create any ambiguity, then the provisions of this Article 62 shall control.

ARTICLE 63. INVESTIGATION(S) CLAUSE

63.1 The parties to this **Contract** agree to cooperate fully and faithfully with any investigation, audit or inquiry conducted by a United States, a State of New York (State) or a City governmental agency or authority that is empowered directly or by designation to compel the attendance of witnesses and to examine witnesses under oath, or conducted by the Inspector General of a governmental agency that is a party in interest to the transaction, submitted bid, submitted proposal, contract, lease, permit or license that is the subject of the investigation, audit or inquiry.

63.2 If any person who has been advised that his/her statement, and any information from such statement, will not be used against him/her in any subsequent criminal proceeding refuses to testify before a grand jury or other governmental agency or authority empowered directly or by designation to compel the attendance of witnesses and to examine witnesses under oath concerning the award of or performance under any transaction, agreement, lease, permit, contract, or license entered into with the City, the State, or any political subdivision or public authority thereof, or the Port Authority of New York and New Jersey, or any local development corporation within the City, or any public benefit corporation organized under the Laws of the State of New York, or;

63.3 If any person refuses to testify for a reason other than the assertion of his/her privilege against self incrimination in an investigation, audit or inquiry conducted by a City or State governmental agency or authority empowered directly or by designation to compel the attendance of witnesses and to take testimony under oath, or by the Inspector General of the governmental agency that is a party in interest in, and is seeking testimony concerning the award of, or performance under any transaction, agreement, lease, permit, contract, or license entered into with the City, the State, or any political subdivision thereof or any local development corporation within the City, then;

63.4 The **Commissioner** whose **Agency** is a party in interest to the transaction, submitted bid, submitted proposal, contract, lease, permit, or license shall convene a hearing, upon not less than five (5) **Days**' written notice to the parties involved to determine if any penalties should attach for the failure of a person to testify.

63.5 If any non-governmental party to the hearing requests an adjournment, the **Commissioner** who convened the hearing may, upon granting the adjournment, suspend any contract, lease, permit, or license, pending the final determination pursuant to Article 63.7 without the City incurring any penalty or damages for delay or otherwise.

63.6 The penalties which may attach after a final determination by the **Commissioner** may include but shall not exceed:

63.6.1 The disqualification for a period not to exceed five (5) years from the date of an adverse determination for any person, or any entity of which such person was a member at the time the testimony was sought, from submitting bids for, or transacting business with, or entering into or obtaining any contract, lease, permit or license with or from the City; and/or

63.6.2 The cancellation or termination of any and all such existing City contracts, leases, permits or licenses that the refusal to testify concerns and that have not been assigned as permitted under this Contract, nor the proceeds of which pledged, to an unaffiliated and unrelated institutional lender for fair value prior to the issuance of the notice scheduling the hearing, without the City incurring any penalty or damages on account of such cancellation or termination; monies lawfully due for goods delivered, work done, rentals, or fees accrued prior to the cancellation or termination shall be paid by the City.

63.7 The Commissioner shall consider and address in reaching his/her determination and in assessing an appropriate penalty the factors in Articles 63.7.1 and 63.7.2. The Commissioner may also consider, if relevant and appropriate, the criteria established in Articles 63.7.3 and 63.7.4, in addition to any other information which may be relevant and appropriate:

63.7.1 The party's good faith endeavors or lack thereof to cooperate fully and faithfully with any governmental investigation or audit, including but not limited to the discipline, discharge, or disassociation of any person failing to testify, the production of accurate and complete books and records, and the forthcoming testimony of all other members, agents, assignees or fiduciaries whose testimony is sought.

63.7.2 The relationship of the person who refused to testify to any entity that is a party to the hearing, including but not limited to, whether the person whose testimony is sought has an ownership interest in the entity and/or the degree of authority and responsibility the person has within the entity.

63.7.3 The nexus of the testimony sought to the subject entity and its contracts, leases, permits or licenses with the City.

63.7.4 The effect a penalty may have on an unaffiliated and unrelated party or entity that has a significant interest in an entity subject to penalties under Article 63.6, provided that the party or entity has given actual notice to the Commissioner upon the acquisition of the interest, or at the hearing called for in Article 63.4, gives notice and proves that such interest was previously acquired. Under either circumstance the party or entity shall present evidence at the hearing demonstrating the potential adverse impact a penalty will have on such person or entity.

63.8 Definitions:

63.8.1 The term "license" or "permit" as used in this Article 63 shall be defined as a license, permit, franchise or concession not granted as a matter of right.

63.8.2 The term "person" as used in this Article 63 shall be defined as any natural person doing business alone or associated with another person or entity as a partner, director, officer, principal or employee.

63.8.3 The term "entity" as used in this Article 63 shall be defined as any firm, partnership, corporation, association, joint venture, or person that receives monies, benefits, licenses, leases, or permits from or through the City or otherwise transacts business with the City.

63.8.4 The term "member" as used in this Article 63 shall be defined as any person associated with another person or entity as a partner, director, officer, principal or employee.

63.9 In addition to and notwithstanding any other provision of this Contract, the Commissioner may in his/her sole discretion terminate this Contract upon not less than three (3) Days' written notice in the event the Contractor fails to promptly report in writing to the Commissioner of the Department of Investigations ("DOI") of the City any solicitation of money, goods, requests for future employment or other benefit or thing of value, by or on behalf of any employee of the City or other person, firm, corporation or entity for any purpose which may be related to the procurement or obtaining of this Contract by the Contractor, or affecting the performance of this Contract.

ARTICLE 64. TERMINATION BY THE CITY

64.1 In addition to termination pursuant to any other article of this Contract, the Commissioner may, at any time, terminate this Contract by written notice to the Contractor. In the event of termination, the Contractor shall, upon receipt of such notice, unless otherwise directed by the Commissioner:

64.1.1 Stop Work on the date specified in the notice;

64.1.2 Take such action as may be necessary for the protection and preservation of the City's materials and property;

64.1.3 Cancel all cancelable orders for material and equipment;

64.1.4 Assign to the City and deliver to the Site or another location designated by the Commissioner, any non-cancelable orders for material and equipment that is not capable of use except in the performance of this Contract and has been specifically fabricated for the sole purpose of this Contract and not incorporated in the Work;

64.1.5 Take no action which will increase the amounts payable by the City under this Contract.

64.2 In the event of termination by the City pursuant to this Article 64, payment to the Contractor shall be in accordance with Articles 64.2.1, 64.2.2 or 64.2.3, to the extent that each respective article applies.

64.2.1 Lump Sum Contracts or Items: On all lump sum Contracts, or on lump sum items in a Contract, the City will pay the Contractor the sum of the amounts described in Articles 64.2.1(a) and 64.2.1(b), less all payments previously made pursuant to this Contract. On lump sum Contracts only, the City will also pay the Contractor an additional sum as provided in Article 64.2.1(c).

64.2.1(a) For Work completed prior to the notice of termination, the Contractor shall be paid a pro rata portion of the lump sum bid amount, plus approved change orders, based upon the percent completion of the Work, as determined by the Commissioner. For the purpose of determining the pro rata portion of the lump sum bid amount to which the Contractor is entitled, the bid breakdown submitted in accordance with Article 41 shall be considered, but shall not be dispositive. The Commissioner's determination hereunder shall be final, binding, and conclusive.

64.2.1(b) For non-cancelable material and equipment that is not capable of use except in the performance of this **Contract** and has been specifically fabricated for the sole purpose of this **Contract**, but not yet incorporated in the **Work**, the **Contractor** shall be paid the lesser of the following, less salvage value:

64.2.1(b)(i) The Direct Cost, as defined in Article 64.2.4; or

64.2.1(b)(ii) The fair and reasonable value, if less than Direct Cost, of such material and equipment, plus necessary and reasonable delivery costs.

64.2.1(b)(iii) In addition, the **Contractor** shall be paid five (5%) percent of the amount described in Article 64.2.1(b)(i) or Article 64.2.1(b)(ii), whichever applies.

64.2.1(c) Except as otherwise provided in Article 64.2.1(d), on all lump sum **Contracts**, the **Contractor** shall be paid the percentage indicated below applied to the difference between the total lump sum bid amount and the total of all payments made prior to the notice of termination plus all payments allowed pursuant to Articles 64.2.1(a) and 64.2.1(b):

64.2.1(c)(i) Five (5%) percent of the first five million (\$5,000,000) dollars; and

64.2.1(c)(ii) Three (3%) percent of any amount between five million (\$5,000,000) dollars and fifteen million (\$15,000,000) dollars; plus

64.2.1(c)(iii) One (1%) percent of any amount over fifteen million (\$15,000,000) dollars.

64.2.1(d) In the event the **City** terminates a lump sum **Contract** pursuant to this Article 64 within ninety (90) **Days** after registration of the **Contract** with the **Comptroller**, the **Contractor** shall be paid one (1%) percent of the difference between the lump sum bid amount and the total of all payments made pursuant to this Article 64.2.

64.2.2 Unit Price Contracts or Items: On all unit price **Contracts**, or on unit price items in a **Contract**, the **City** will pay the **Contractor** the sum of the amounts described in Articles 64.2.2(a) and 64.2.2(b), less all payments previously made pursuant to this **Contract**:

64.2.2(a) For all completed units, the unit price stated in the **Contract**, and

64.2.2(b) For units that have been ordered but are only partially completed, the **Contractor** will be paid:

64.2.2(b)(i) A pro rata portion of the unit price stated in the **Contract** based upon the percent completion of the unit and

64.2.2(b)(ii) For non-cancelable material and equipment, payment will be made pursuant to Article 64.2.1(b).

64.2.3 Time and Materials Contracts or Items Based on Time and Material Records: On all **Contracts** or items in a **Contract** where payment for the **Work** is based on time and

material records, the **Contractor** shall be paid in accordance with Article 26, less all payments previously made pursuant to this **Contract**.

64.2.4 Direct Costs: Direct Costs as used in this Article 64.2 shall mean:

64.2.4(a) The actual purchase price of material and equipment, plus necessary and reasonable delivery costs,

64.2.4(b) The actual cost of labor involved in construction and installation at the **Site**, and

64.2.4(c) The actual cost of necessary bonds and insurance purchased pursuant to requirements of this **Contract** less any amounts that have been or should be refunded by the **Contractor's** sureties or insurance carriers.

64.2.4(d) Direct Costs shall not include overhead.

64.3 In no event shall any payments under this Article 64 exceed the **Contract** price for such items.

64.4 All payments pursuant to Article 64 shall be in the nature of liquidated damages and shall be accepted by the **Contractor** in full satisfaction of all claims against the **City**.

64.5 The **City** may deduct or set off against any sums due and payable pursuant to this Article 64, any deductions authorized by this **Contract** or by **Law** (including but not limited to liquidated damages) and any claims it may have against the **Contractor**. The **City's** exercise of the right to terminate the **Contract** pursuant to this Article 64 shall not impair or otherwise effect the **City's** right to assert any claims it may have against the **Contractor** in a plenary action.

64.6 Where the **Work** covered by the **Contract** has been substantially completed, as determined in writing by the **Commissioner**, termination of the **Work** shall be handled as an omission of **Work** pursuant to Articles 29 and 33, in which case a change order will be issued to reflect an appropriate reduction in the **Contract** sum, or if the amount is determined after final payment, such amount shall be paid by the **Contractor**.

ARTICLE 65. CHOICE OF LAW, CONSENT TO JURISDICTION AND VENUE

65.1 This **Contract** shall be deemed to be executed in the **City** regardless of the domicile of the **Contractor**, and shall be governed by and construed in accordance with the **Laws** of the State of New York and the **Laws** of the United States, where applicable.

65.2 The parties agree that any and all claims asserted against the **City** arising under this **Contract** or related thereto shall be heard and determined in the courts of the State of New York ("New York State Courts") located in the **City** and County of New York. To effect this **Contract** and intent, the **Contractor** agrees:

65.2.1 If the **City** initiates any action against the **Contractor** in Federal court or in a New York State Court, service of process may be made on the **Contractor** either in person, wherever such **Contractor** may be found, or by registered mail addressed to the **Contractor** at its address as set forth in this **Contract**, or to such other address as the **Contractor** may provide to the **City** in writing; and

65.2.2 With respect to any action between the **City** and the **Contractor** in a New York State Court, the **Contractor** hereby expressly waives and relinquishes any rights it might otherwise have:

65.2.2(a) To move to dismiss on grounds of forum non conveniens;

65.2.2(b) To remove to Federal Court; and

65.2.2(c) To move for a change of venue to a New York State Court outside New York County.

65.2.3 With respect to any action brought by the **City** against the **Contractor** in a Federal Court located in the **City**, the **Contractor** expressly waives and relinquishes any right it might otherwise have to move to transfer the action to a Federal Court outside the **City**.

65.2.4 If the **Contractor** commences any action against the **City** in a court located other than in the **City** and County of New York, upon request of the **City**, the **Contractor** shall either consent to a transfer of the action to a New York State Court of competent jurisdiction located in the **City** and County of New York or, if the Court where the action is initially brought will not or cannot transfer the action, the **Contractor** shall consent to dismiss such action without prejudice and may thereafter reinstate the action in a New York State Court of competent jurisdiction in New York County.

65.3 If any provision(s) of this Article 65 is held unenforceable for any reason, each and all other provision(s) shall nevertheless remain in full force and effect.

ARTICLE 66. PARTICIPATION IN AN INTERNATIONAL BOYCOTT

66.1 The **Contractor** agrees that neither the **Contractor** nor any substantially owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the Federal Export Administration Act of 1979, as amended, or the regulations of the United States Department of Commerce (Commerce Department) promulgated thereunder.

66.2 Upon the final determination by the Commerce Department or any other agency of the United States as to, or conviction of the **Contractor** or a substantially-owned affiliated company thereof for participation in an international boycott in violation of the provisions of the Export Administration Act of 1979, as amended, or the regulations promulgated thereunder, the **Comptroller** may, at his/her option, render forfeit and void this **Contract**.

66.3 The **Contractor** shall comply in all respects, with the provisions of Section 6-114 of the Administrative Code and the rules and regulations issued by the **Comptroller** thereunder.

ARTICLE 67. LOCALLY BASED ENTERPRISE PROGRAM

67.1 This **Contract** is subject to the requirements of Section 6-108.1 of the Administrative Code and regulations promulgated thereunder. No construction contract shall be awarded unless and until these requirements have been complied with in their entirety; however, compliance with this Article 67 is not required if the Agency sets Subcontractor Participation Goals for Minority- and Women-Owned Business Enterprises (M/WBES).

67.2 Unless specifically waived by the **Commissioner** with the approval of the Division of Economic and Financial Opportunity of the **City** Department of Business Services, if any portion of the **Contract** is subcontracted, not less than ten (10%) percent of the total dollar amount of the **Contract** shall be awarded to locally based enterprises (LBEs); except that where less than ten (10%) percent of the total dollar amount of the **Contract** is subcontracted, such lesser percentage shall be so awarded.

67.3 The **Contractor** shall not require performance and payment bonds from LBE **Subcontractors**.

67.4 If the **Contractor** has indicated prior to award that no **Work** will be subcontracted, no **Work** shall be subcontracted without the prior approval of the **Commissioner**, which shall be granted only if the **Contractor** makes a good faith effort beginning at least six (6) weeks before the **Work** is to be performed to obtain LBE **Subcontractors** to perform the **Work**.

67.5 If the **Contractor** has not identified sufficient LBE **Subcontractors** prior to award, it shall sign a letter of compliance stating that it complies with Section 6-108.1 of the Administrative Code, recognizes that achieving the LBE requirement is a condition of its **Contract**, and shall submit documentation demonstrating its good faith efforts to obtain LBEs. After award, the **Contractor** shall begin to solicit LBE's to perform subcontracted **Work** at least six (6) weeks before the date such **Work** is to be performed and shall demonstrate that a good faith effort has been made to obtain LBEs on each subcontract until it meets the required percentage.

67.6 Failure of the **Contractor** to comply with the requirements of Section 6-108.1 of the Administrative Code and the regulations promulgated thereunder shall constitute a material breach of this **Contract**. Remedy for such breach may include the imposition of any or all of the following sanctions:

67.6.1 Reducing the **Contractor's** compensation by an amount equal to the dollar value of the percentage of the LBE subcontracting requirement not complied with;

67.6.2 Declaring the **Contractor** in default;

67.6.3 If the **Contractor** is an LBE, de-certifying and declaring the **Contractor** ineligible to participate in the LBE program for a period of up to three (3) years.

ARTICLE 68. ANTITRUST

68.1 The **Contractor** hereby assigns, sells, and transfers to the **City** all right, title, and interest in and to any claims and causes of action arising under the antitrust **Laws** of New York State or of the United States relating to the particular goods or services purchased or procured by the **City** under this **Contract**.

ARTICLE 69. MacBRIDE PRINCIPLES PROVISIONS

69.1 Notice To All Prospective **Contractors**:

69.1.1 Local Law No. 34 of 1991 became effective on September 10, 1991 and added Section 6-115.1 of the Administrative Code. The local **Law** provides for certain restrictions on **City Contracts** to express the opposition of the people of the **City** to employment discrimination practices in Northern Ireland to promote freedom of work-place opportunity.

69.1.2 Pursuant to Section 6-115.1, prospective **Contractors** for **Contracts** to provide goods or services involving an expenditure of an amount greater than ten thousand

(\$10,000.) dollars, or for construction involving an amount greater than fifteen thousand (\$15,000.) dollars, are asked to sign a rider in which they covenant and represent, as a material condition of their **Contract**, that any business operations in Northern Ireland conducted by the **Contractor** and any individual or legal entity in which the **Contractor** holds a ten (10%) percent or greater ownership interest in the **Contractor** will be conducted in accordance with the MacBride Principles of nondiscrimination in employment.

69.1.3 Prospective **Contractors** are not required to agree to these conditions. However, in the case of **Contracts** let by competitive sealed bidding, whenever the lowest responsible bidder has not agreed to stipulate to the conditions set forth in this notice and another bidder who has agreed to stipulate to such conditions has submitted a bid within five (5%) percent of the lowest responsible bid for a **Contract** to supply goods, services or construction of comparable quality, the **Agency** shall refer such bids to the Mayor, the Speaker or other officials, as appropriate, who may determine, in accordance with applicable **Law**, that it is in the best interest of the **City** that the **Contract** be awarded to other than the lowest responsible pursuant to Section 313(b)(2) of the **City Charter**.

69.1.4 In the case of **Contracts** let by other than competitive sealed bidding, if a prospective **Contractor** does not agree to these conditions, no **Agency**, elected official or the **City Council** shall award the **Contract** to that bidder unless the **Agency** seeking to use the goods, services or construction certifies in writing that the **Contract** is necessary for the **Agency** to perform its functions and there is no other responsible **Contractor** who will supply goods, services or construction of comparable quality at a comparable price.

69.2 In accordance with Section 6-115.1 of the Administrative Code, the **Contractor** stipulates that such **Contractor** and any individual or legal entity in which the **Contractor** holds a ten (10%) percent or greater ownership interest in the **Contractor** either:

69.2.1 Have no business operations in Northern Ireland, or

69.2.2 Shall take lawful steps in good faith to conduct any business operations they have in Northern Ireland in accordance with the MacBride Principles, and shall permit independent monitoring of their compliance with such principles.

69.3 For purposes of this Article, the following terms shall have the following meanings:

69.3.1 "MacBride Principles" shall mean those principles relating to nondiscrimination in employment and freedom of work-place opportunity which require employers doing business in Northern Ireland to:

69.3.1(a) increase the representation of individuals from under-represented religious groups in the workforce, including managerial, supervisory, administrative, clerical and technical jobs;

69.3.1(b) take steps to promote adequate security for the protection of employees from under-represented religious groups both at the work-place and while traveling to and from **Work**;

69.3.1(c) ban provocative religious or political emblems from the workplace;

69.3.1(d) publicly advertise all job openings and make special recruitment efforts to attract applicants from under-represented religious groups;

69.3.1(e) establish layoff, recall, and termination procedures which do not in practice favor a particular religious group;

69.3.1(f) abolish all job reservations, apprenticeship restrictions and different employment criteria which discriminate on the basis of religion;

69.3.1(g) develop training programs that will prepare substantial numbers of current employees from under-represented religious groups for skilled jobs, including the expansion of existing programs and the creation of new programs to train, upgrade, and improve the skills of workers from under-represented religious groups;

69.3.1(h) establish procedures to assess, identify, and actively recruit employees from under-represented religious groups with potential for further advancement; and

69.3.1(i) appoint a senior management staff member to oversee affirmative action efforts and develop a timetable to ensure their full implementation.

69.4 The **Contractor** agrees that the covenants and representations in Article 69.2 are material conditions to this **Contract**. In the event the **Agency** receives information that the **Contractor** who made the stipulation required by this Article 69 is in violation thereof, the **Agency** shall review such information and give the **Contractor** an opportunity to respond. If the **Agency** finds that a violation has occurred, the **Agency** shall have the right to declare the **Contractor** in default and/or terminate this **Contract** for cause and procure supplies, services or **Work** from another source in the manner the **Agency** deems proper. In the event of such termination, the **Contractor** shall pay to the **Agency**, or the **Agency** in its sole discretion may withhold from any amounts otherwise payable to the **Contractor**, the difference between the **Contract** price for the uncompleted portion of this **Contract** and the cost to the **Agency** of completing performance of this **Contract** either itself or by engaging another **Contractor** or **Contractors**. In the case of a requirement **Contract**, the **Contractor** shall be liable for such difference in price for the entire amount of supplies required by the **Agency** for the uncompleted term of **Contractor's Contract**. In the case of a construction **Contract**, the **Agency** shall also have the right to hold the **Contractor** in partial or total default in accordance with the default provisions of this **Contract**, and/or may seek debarment or suspension of the **Contractor**. The rights and remedies of the **Agency** hereunder shall be in addition to, and not in lieu of, any rights and remedies the **Agency** has pursuant to this **Contract** or by operation of **Law**.

ARTICLE 70. ELECTRONIC FILING/NYC DEVELOPMENT HUB

70.1 The **Contractor** shall electronically file all alteration type-2 and alteration type-3 applications via the New York City Development Hub Web site, except applications for the following types of minor alterations: enlargements, curb cuts, legalizations, fire alarms, builders pavement plans, and jobs filed on Landmark Preservation Commission calendared properties. All such filings must be professionally certified. Information about electronic filing via the New York City Development Hub is available on the City Department of Buildings Web site at www.nyc.gov/buildings.

ARTICLE 71. PROHIBITION OF TROPICAL HARDWOODS

71.1 Tropical hardwoods, as defined in Section 165 of the New York State Finance Law (Finance Law), shall not be utilized in the performance of this **Contract** except as expressly permitted by Section 165 of the Finance Law.

ARTICLE 72. CONFLICTS OF INTEREST

72.1 Section 2604 of the City Charter and other related provisions of the City Charter, the Administrative Code, and the Penal Law are applicable under the terms of this Contract in relation to conflicts of interest and shall be extended to Subcontractors authorized to perform Work, labor and services pursuant to this Contract and further, it shall be the duty and responsibility of the Contractor to so inform its respective Subcontractors. Notice is hereby given that, under certain circumstances, penalties may be invoked against the donor as well as the recipient of any form of valuable gift.

ARTICLE 73. MERGER CLAUSE

73.1 The written Contract herein, contains all the terms and conditions agreed upon by the parties hereto, and no other agreement, oral or otherwise, regarding the subject matter of this Contract shall be deemed to exist or to bind any of the parties hereto, or to vary any of the terms contained herein.

ARTICLE 74. STATEMENT OF WORK

74.1 The Contractor shall furnish all labor and materials and perform all Work in strict accordance with the Specifications and Addenda thereto, numbered One.

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 of: Two million nine hundred eighty thousand dollars Dollars, (\$ 2,908,000.00), 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.

Two million nine hundred eighty thousand dollars

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

NOTICE TO ALL PROSPECTIVE CONTRACTORS

ARTICLE I. M/WBE PROGRAM

Local Law No. 129 of 2005 added and Local Law 1 of 2013 amended Section 6-129 of the Administrative Code of the City of New York (hereinafter "Section 6-129"). Section 6-129 establishes the program for participation in City procurement ("M/WBE Program") by minority-owned business enterprises ("MBEs") and women-owned business enterprises ("WBEs"), certified in accordance with Section 1304 of the New York City Charter. As stated in Section 6-129, the intent of the program is to address the impact of discrimination on the City's procurement process, and to promote the public interest in avoiding fraud and favoritism in the procurement process, increasing competition for City business, and lowering contract costs. The contract provisions contained herein are pursuant to Section 6-129, and the rules of the Department of Small Business Services ("DSBS") promulgated thereunder.

If this Contract is subject to the M/WBE Program established by Section 6-129, the specific requirements of MBE and/or WBE participation for this Contract are set forth in Schedule B of the Contract (entitled the "M/WBE Utilization Plan"), and are detailed below. The Contractor must comply with all applicable MBE and WBE requirements for this Contract.

All provisions of Section 6-129 are hereby incorporated in the Contract by reference and all terms used herein that are not defined herein shall have the meanings given such terms in Section 6-129. Article I, Part A, below, sets forth provisions related to the participation goals for construction, standard and professional services contracts. Article I, Part B, below, sets forth miscellaneous provisions related to the M/WBE Program.

PART A

PARTICIPATION GOALS FOR CONSTRUCTION, STANDARD AND PROFESSIONAL SERVICES CONTRACTS OR TASK ORDERS

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

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

2. If Participation Goals have been established for this Contract or Task Orders issued pursuant to this Contract, Contractor agrees or shall agree as a material term of the Contract that Contractor shall be subject to the Participation

Goals, unless the goals are waived or modified by Agency in accordance with Section 6-129 and Part A, Sections 10 and 11 below, respectively.

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

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

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

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

(ii) **Participation Goals** on a Master Services Agreement will be established for individual Task Orders issued after the Master Services Agreement is awarded. If **Participation Goals** have been established on a Task Order, a contractor shall be required to submit a Schedule B – M/WBE Utilization Plan For Independently Registered Task Orders That Are Issued Pursuant to Master Services Agreements, Part II (see Pages 2-4) indicating: (a) whether the contractor is an MBE or WBE, or qualified joint venture; (b) the percentage of work it intends to award to direct subcontractors; and (c) in cases where the contractor intends to award direct subcontracts, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs, and the time frames in which such work is scheduled to begin and end. The contractor must engage in good faith efforts to meet the **Participation Goals** as established for the Task Order unless Agency has granted the contractor a pre-award waiver of the **Participation Goals** in accordance with Section 6-129 and Part A, Section 10 below.

C. **THE BIDDER/PROPOSER MUST COMPLETE THE SCHEDULE B INCLUDED HEREIN (SCHEDULE B, PART II). A SCHEDULE B SUBMITTED BY THE BIDDER/PROPOSER WHICH DOES NOT INCLUDE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS (SEE SECTION V OF PART II) WILL BE DEEMED TO BE NON-RESPONSIVE, UNLESS A FULL WAIVER OF THE PARTICIPATION GOALS IS GRANTED (SCHEDULE B, PART III). IN THE EVENT THAT THE CITY DETERMINES THAT THE BIDDER/PROPOSER HAS SUBMITTED A SCHEDULE B WHERE THE VENDOR CERTIFICATION AND REQUIRED AFFIRMATIONS ARE COMPLETED BUT OTHER**

ASPECTS OF THE SCHEDULE B ARE NOT COMPLETE, OR CONTAIN A COPY OR COMPUTATION ERROR THAT IS AT ODDS WITH THE VENDOR CERTIFICATION AND AFFIRMATIONS, THE BIDDER/PROPOSER WILL BE NOTIFIED BY THE AGENCY AND WILL BE GIVEN FOUR (4) CALENDAR DAYS FROM RECEIPT OF NOTIFICATION TO CURE THE SPECIFIED DEFICIENCIES AND RETURN A COMPLETED SCHEDULE B TO THE AGENCY. FAILURE TO DO SO WILL RESULT IN A DETERMINATION THAT THE BID/PROPOSAL IS NON-RESPONSIVE. RECEIPT OF NOTIFICATION IS DEFINED AS THE DATE NOTICE IS E-MAILED OR FAXED (IF THE BIDDER/PROPOSER HAS PROVIDED AN E-MAIL ADDRESS OR FAX NUMBER), OR NO LATER THAN FIVE (5) CALENDAR DAYS FROM THE DATE OF MAILING OR UPON DELIVERY, IF DELIVERED.

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

6. MBE and WBE firms must be certified by DSBS in order for the Contractor to credit such firms' participation toward the attainment of the **Participation Goals**. Such certification must occur prior to the firms' commencement of work. A list of MBE and WBE firms may be obtained from the DSBS website at www.nyc.gov/buycertified, by emailing DSBS at buyer@sbs.nyc.gov, by calling (212) 513-6356, or by visiting or writing DSBS at 110 William St., New York, New York, 10038, 7th floor. Eligible firms that have not yet been certified may contact DSBS in order to seek certification by visiting www.nyc.gov/getcertified, emailing MWBE@sbs.nyc.gov, or calling the DSBS certification helpline at (212) 513-6311. A firm that is certified as both an MBE and a WBE may be counted either toward the goal for MBEs or the goal for WBEs, but not both. No credit shall be given for participation by a graduate MBE or graduate WBE, as defined in Section 6-129(c)(20).

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

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

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

10. Pre-award waiver of the **Participation Goals**. (a) A bidder or proposer, or contractor with respect to a Task Order, may seek a pre-award full or partial waiver of the **Participation Goals** in accordance with Section 6-129, which

requests that Agency change one or more **Participation Goals** on the grounds that the **Participation Goals** are unreasonable in light of the availability of certified firms to perform the services required, or by demonstrating that it has legitimate business reasons for proposing a lower level of subcontracting in its M/WBE Utilization Plan.

(b) To apply for a full or partial waiver of the **Participation Goals**, a bidder, proposer, or contractor, as applicable, must complete Part III (Page 5) of Schedule B and submit such request no later than seven (7) calendar days prior to the date and time the bids, proposals, or Task Orders are due, in writing to the Agency by email at poped@ddc.nyc.gov or via facsimile at (718) 391-1886. Bidders, proposers, or contractors, as applicable, who have submitted requests will receive an Agency response by no later than two (2) calendar days prior to the due date for bids, proposals, or Task Orders; provided, however, that if that date would fall on a weekend or holiday, an Agency response will be provided by close-of-business on the business day before such weekend or holiday date.

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

(d) Agency may grant a full or partial waiver of the **Participation Goals** to a bidder, proposer or contractor, as applicable, who demonstrates—before submission of the bid, proposal or Task Order, as applicable—that it has legitimate business reasons for proposing the level of subcontracting in its M/WBE Utilization Plan. In making its determination, Agency shall consider factors that shall include, but not be limited to, whether the bidder, proposer or contractor, as applicable, has the capacity and the bona fide intention to perform the Contract without any subcontracting, or to perform the Contract without awarding the amount of subcontracts represented by the **Participation Goals**. In making such determination, Agency may consider whether the M/WBE Utilization Plan is consistent with past subcontracting practices of the bidder, proposer or contractor, as applicable, whether the bidder, proposer or contractor, as applicable, has made efforts to form a joint venture with a certified firm, and whether the bidder, proposer, or contractor, as applicable, has made good faith efforts to identify other portions of the Contract that it intends to subcontract.

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

- (i) The Contractor advertised opportunities to participate in the Contract, where appropriate, in general circulation media, trade and professional association publications and small business media, and publications of minority and women's business organizations;
- (ii) The Contractor provided notice of specific opportunities to participate in the Contract, in a timely manner, to minority and women's business organizations;
- (iii) The Contractor sent written notices, by certified mail or facsimile, in a timely manner, to advise MBEs or WBEs that their interest in the Contract was solicited;
- (iv) The Contractor made efforts to identify portions of the work that could be substituted for portions originally designated for participation by MBEs and/or WBEs in the M/WBE Utilization Plan, and for which the Contractor claims an inability to retain MBEs or WBEs;
- (v) The Contractor held meetings with MBEs and/or WBEs prior to the date their bids or proposals were due, for the purpose of explaining in detail the scope and requirements of the work for which their bids or proposals were solicited;
- (vi) The Contractor made efforts to negotiate with MBEs and/or WBEs as relevant to perform specific subcontracts, or act as suppliers or service providers;
- (vii) Timely written requests for assistance made by the Contractor to Agency's M/WBE liaison officer and to DSBS;

(viii) Description of how recommendations made by DSBS and Agency were acted upon and an explanation of why action upon such recommendations did not lead to the desired level of participation of MBEs and/or WBEs.

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

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

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

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

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

PART B: MISCELLANEOUS

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

2. Pursuant to DSBS rules, construction contracts that include a requirement for an M/WBE Utilization Plan shall not be subject to the law governing Locally Based Enterprises set forth in Section 6-108.1 of the Administrative Code of the City of New York.

3. DSBS is available to assist contractors and potential contractors in determining the availability of MBEs and/or WBEs to participate as subcontractors, and in identifying opportunities that are appropriate for participation by MBEs and/or WBEs in contracts.

4. Prospective contractors are encouraged to enter into qualified joint venture agreements with MBEs and/or WBEs as defined by Section 6-129(c)(30).

5. By submitting a bid or proposal the Contractor hereby acknowledges its understanding of the M/WBE Program requirements set forth herein and the pertinent provisions of Section 6-129, and any rules promulgated thereunder, and if awarded this Contract, the Contractor hereby agrees to comply with the M/WBE Program requirements of this Contract and pertinent provisions of Section 6-129, and any rules promulgated thereunder, all of which shall be deemed to be material terms of this Contract. The Contractor hereby agrees to make all reasonable, good faith efforts to solicit and obtain the participation of MBEs and/or WBEs to meet the required **Participation Goals**.

ARTICLE II. ENFORCEMENT

1. If Agency determines that a bidder or proposer, as applicable, has, in relation to this procurement, violated Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, Agency may disqualify such bidder or proposer, as applicable, from competing for this Contract and the Agency may revoke such bidder's or proposer's prequalification status, if applicable.

2. Whenever Agency believes that the Contractor or a subcontractor is not in compliance with Section 6-129 or the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to any M/WBE Utilization Plan, Agency shall send a written notice to the Contractor describing the alleged noncompliance and offering the Contractor an opportunity to be heard. Agency shall then conduct an investigation to determine whether such Contractor or subcontractor is in compliance.

3. In the event that the Contractor has been found to have violated Section 6-129, the DSBS rules promulgated pursuant to Section 6-129, or any provision of this Contract that implements Section 6-129, including, but not limited to, any M/WBE Utilization Plan, Agency may determine that one of the following actions should be taken:

- (a) entering into an agreement with the Contractor allowing the Contractor to cure the violation;
- (b) revoking the Contractor's pre-qualification to bid or make proposals for future contracts;
- (c) making a finding that the Contractor is in default of the Contract;
- (d) terminating the Contract;
- (e) declaring the Contractor to be in breach of Contract;
- (f) withholding payment or reimbursement;
- (g) determining not to renew the Contract;
- (h) assessing actual and consequential damages;
- (i) assessing liquidated damages or reducing fees, provided that liquidated damages may be based on amounts representing costs of delays in carrying out the purposes of the M/WBE Program, or in meeting the purposes of the Contract, the costs of meeting utilization goals through additional procurements, the administrative costs of investigation and enforcement, or other factors set forth in the Contract;
- (j) exercising rights under the Contract to procure goods, services or construction from another contractor and charge the cost of such contract to the Contractor that has been found to be in noncompliance; or
- (k) taking any other appropriate remedy.

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


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

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


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

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: 
Deputy Commissioner

CONTRACTOR: Tjm Construction Corp /
Long Island Concrete, Inc. - A Joint
Venture

By: 
(Member of Firm or Officer of Corporation)

Title: MANAGING PARTNER

IN WITNESS WHEREOF, I have hereunto set my hand and the seal of the City of New York, this _____ day of _____, 2013.
(Where Contractor is a Corporation, add):
Attest:

Secretary

(Seal)

ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION

State of _____ County of _____ ss:

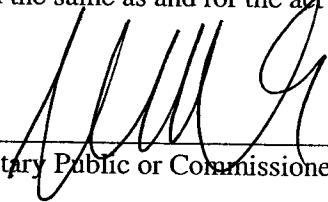
On this _____ day of _____, before me personally came _____ to me known, who, being by me duly sworn did depose and say that he resides at _____ that he is the _____ of the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation, and that he signed his name thereto by like order.

Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT OF PRINCIPAL, IF A PARTNERSHIP

State of New York County of Queens:

On this 10th day of Oct-2014 before me personally appeared Robert Slochiver to me known, and known to me to be one of the members of the firm of Horizon Construction Corp 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

VICTORIA AYO-VAUGHAN
Notary Public, State of New York
Registration #01AY5014042
Qualified in Queens County
Commission Expires July 15, 15

ACKNOWLEDGMENT OF PRINCIPAL, IF AN INDIVIDUAL

State of _____ County of _____ ss:

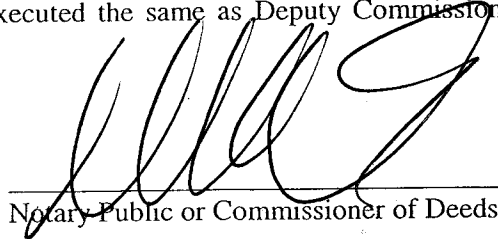
On this _____ day of _____, before me personally appeared _____ to me known, and known to me to be the person described in and who executed the foregoing instrument; and acknowledged that he executed the same.

Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT BY COMMISSIONER

State of New York County of Queens ss:

On this 13th day of October 2014, before me personally came Eric Macfarlane
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 he acknowledged to me that he executed the same as Deputy Commissioner for the purposes therein
mentioned.



Notary Public or Commissioner of Deeds

VICTORIA AYO-VAUGHAN
Notary Public, State of New York
Registration #01AY5014042
Qualified in Queens County
Commission Expires July 15, 2015

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


two million nine hundred
eight thousand dollars

Dollars (\$ 2,908,000.00)

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

Performance Bond #1 (Pages 90 to 93): 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, _____

TJM Construction Corp. / Long Island Concrete, Inc. A Joint Venture

301 Mill Road, Hewlett, NY 11557

hereinafter referred to as the "Principal", and Vigilant Insurance Company, 15 Mountain View Road, Warren, NJ 07059 and The Ohio Casualty Insurance Company, 62 Maple Avenue Keene, NH 03431

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

Two Million Nine Hundred Eight Thousand and 00/100

(\$ 2,908,000.00) 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 121 Plymouth Paint Warehouse Relocation to 424 Wythe Building Construction. Construction of One Story CMU Storage Building on Grade. 424 Wythe Avenue, Brooklyn, NY 11211. E-PIN: 85014B0134/DDC PIN: 8502013TR0006C. Contract No. 1 - General Construction Work. Project ID: HWKF029B

a copy of which Contract is annexed to and hereby made a part of this bond as though herein set forth in full;

Performance Bond #1 (Pages 90 to 93): 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)

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 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 90 to 93): 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 8th day of October, 2014.



(Seal)
TJM Construction Corp. / Long Island Concrete, Inc. A Joint Venture (L.S.)
By: [Signature]
TJM Construction Corp.

Principal
By: [Signature] Long Island Concrete, Inc.
By: [Signature]

(Seal)

Vigilant Insurance Company
Surety
By: [Signature]
Susan Lupski, Attorney-In-Fact

(Seal)

The Ohio Casualty Insurance Company
Surety
By: [Signature]
Susan Lupski, Attorney-In-Fact

(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.

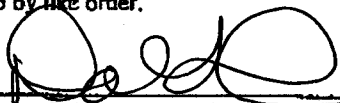
Performance Bond #1 (Pages 90 to 93): Use if the total contract price is \$5 Million Or Less. Performance Bond #1 has been approved by the U.S. Small Business Administration ("SBA") for participation in its Bond Guarantee Program.

PERFORMANCE BOND #1 (Page 4)

ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION

State of New York County of NASSAU ss:

On this 10th day of October, before me personally came Robert Stochover to me known, who, being by me duly sworn did depose and say that he resides at NASSAU COUNTY 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.


Notary Public or Commissioner of Deeds

DANA GRANICE
Notary Public, State of New York
No. 01GR6099128
Qualified in Nassau County
Commission Expires September 22, 2015

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



Performance Bond #1 (Pages 90 to 93): 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 4)

ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION

State of _____ County of _____ ss:

On this _____ day of _____, _____, before me personally came _____
to me known, who, being by me duly sworn did depose and say that he resides at _____
_____ that he is the _____ of the
corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation;
that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said
corporation, and that he signed his name thereto by like order.

Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT OF PRINCIPAL, IF A PARTNERSHIP

State of New York County of Queens ss:

On this 19th day of October 2014 before me personally appeared Thomas Pernu
to me known, and known to me to be one of the members of the firm of Long Island Concrete
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

VICTORIA AYO-VAUGHAN
Notary Public, State of New York
Registration #01AY5014042
Qualified in Queens County
Commission Expires July 15, 2015

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

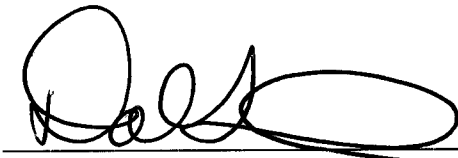
1992-1993
1994-1995
1996-1997
1998-1999
2000-2001

Acknowledgment by Principal

State of New York }
County of NASSAU }

On this 10th day of October 2014, personally appeared before me Robert Stochow member of the firm/Joint Venture of TJM Construction Corp. / Long Island Concrete, Inc. A Joint Venture to me known and known to me to be the individual described in and who executed the foregoing instrument and he acknowledged to me that he executed the same for an on behalf of said firm/Joint Venture.

Sworn before me this 10th day of October 202014



Notary Public

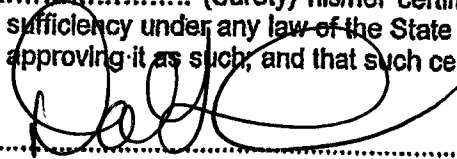
DANA GRANICE
Notary Public, State of New York
No. 01GR6099128
Qualified in Nassau County
Commission Expires September 22, 2015

ACKNOWLEDGMENT OF SURETY COMPANY

STATE OF ... NEW YORK }
COUNTY OF ... NASSAU } SS

On this October 8, 2014, before me personally came Susan Lupski
to me known, who, being by me duly sworn, did depose and say; that he/she resides in
Nassau County, State of New York, that he/she is the Attorney-in-Fact of the
Vigilant Insurance Company the corporation described in which executed the

above instrument; that he/she knows the seal of said corporation; that the seal affixed to said instrument is
such corporate seal; that it was so affixed by the Board of Directors of said corporation; and that he/she signed
his/her name thereto by like order; and the affiant did further depose and say that the Superintendent of
Insurance of the State of New York, has, pursuant to Section 1111 of the Insurance Law of the State of New
York, issued to Vigilant Insurance Company (Surety) his/her certificate of
qualification evidencing the qualification of said Company and its sufficiency under any law of the State of New
York as surety and guarantor, and the propriety of accepting and approving it as such, and that such certificate
has not been revoked.



.....
Notary Public

NY acknowledgement

DANA GRANICE
Notary Public, State of New York
No. 01GR6099128
Qualified in Nassau County
Commission Expires September 22, 2015



Chubb
Surety

POWER
OF
ATTORNEY

Federal Insurance Company
Vigilant Insurance Company
Pacific Indemnity Company

Attn: Surety Department
15 Mountain View Road
Warren, NJ 07059

Know All by These Presents, That FEDERAL INSURANCE COMPANY, an Indiana corporation, VIGILANT INSURANCE COMPANY, a New York corporation, and PACIFIC INDEMNITY COMPANY, a Wisconsin corporation, do each hereby constitute and appoint Thomas Bean, George O. Brewster, Colette R. Chisholm, Susan Lupski, Gerard S. Macholz, Camille Maitland, Robert T. Pearson and Rita Sagistano of Uniondale, New York

each as their true and lawful Attorney-in-Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY have each executed and attested these presents and affixed their corporate seals on this 24th day of September, 2014.

Dawn M. Chloros

Dawn M. Chloros, Assistant Secretary

David B. Norris, Jr.

David B. Norris, Jr., Vice President



STATE OF NEW JERSEY

ss.

County of Somerset

On this 24th day of September, 2014 before me, a Notary Public of New Jersey, personally came Dawn M. Chloros, to me known to be Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY, the companies which executed the foregoing Power of Attorney, and the said Dawn M. Chloros, being by me duly sworn, did depose and say that she is Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By-Laws of said Companies; and that she signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that she is acquainted with David B. Norris, Jr., and knows him to be Vice President of said Companies; and that the signature of David B. Norris, Jr., subscribed to said Power of Attorney is in the genuine handwriting of David B. Norris, Jr., and was thereto subscribed by authority of said By-Laws and in deponent's presence.

Notarial Seal



KATHERINE J. ADELAAR
NOTARY PUBLIC OF NEW JERSEY
No. 2316885
Commission Expires July 16, 2019

Katherine J. Adelaar

Notary Public

CERTIFICATION

Extract from the By-Laws of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

I, Dawn M. Chloros, Assistant Secretary of FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY (the "Companies") do hereby certify that

- (i) the foregoing extract of the By-Laws of the Companies is true and correct.
- (ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U.S. Treasury Department; further, Federal and Vigilant are licensed in the U.S. Virgin Islands, and Federal is licensed in American Samoa, Guam, Puerto Rico, and each of the Provinces of Canada except Prince Edward Island; and
- (iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this October 8, 2014



Dawn M. Chloros

Dawn M. Chloros, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT ADDRESS LISTED ABOVE, OR BY Telephone (908) 903-3493 Fax (908) 903-3656 e-mail: surety@chubb.com

VIGILANT INSURANCE COMPANY

STATEMENT OF ASSETS, LIABILITIES AND SURPLUS TO POLICYHOLDERS

Statutory Basis

DECEMBER 31, 2013

(in thousands of dollars)

<i>ASSETS</i>		<i>LIABILITIES AND SURPLUS TO POLICYHOLDERS</i>	
Cash and Short Term Investments	\$ 3,964	Outstanding Losses and Loss Expenses	\$ 80,847
United States Government, State and Municipal Bonds	78,124	Unearned Premiums	23,521
Other Bonds	246,433	Ceded Reinsurance Premiums Payable	65,766
Stocks	26,285	Provision for Reinsurance	299
Other Invested Assets	<u>411</u>	Other Liabilities	<u>32,630</u>
TOTAL INVESTMENTS	<u>355,217</u>	TOTAL LIABILITIES	<u>203,063</u>
Premiums Receivable	98,372	Capital Stock	4,500
Other Assets	<u>14,357</u>	Paid-In Surplus	25,169
		Unassigned Funds	<u>235,214</u>
		SURPLUS TO POLICYHOLDERS	<u>264,883</u>
TOTAL ADMITTED ASSETS	<u>\$ 467,946</u>	TOTAL LIABILITIES AND SURPLUS TO POLICYHOLDERS	<u>\$ 467,946</u>

Investments are valued in accordance with requirements of the National Association of Insurance Commissioners.
At December 31, 2013, investments with a carrying value of \$10,300,338 were deposited with government authorities
as required by law.

State, County & City of New York, - ss;

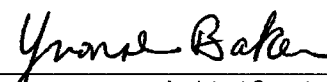
Yvonne Baker, Assistant Secretary of the Vigilant Insurance Company
being duly sworn, deposes and says that the foregoing Statement of Assets, Liabilities and Surplus to Policyholders of said
Vigilant Insurance Company on December 31, 2013 is true and correct and is a true abstract of the Annual Statement of said
Company as filed with the Secretary of the Treasury of the United States for the 12 months ending December 31, 2013.

Subscribed and sworn to before me
this March 11, 2014.



Notary Public

JEANETTE SHIPSEY
Notary Public, State of New York
No. 02SH5074142
Qualified in Nassau County
Commission Expires March 10, 2015



Assistant Secretary

ACKNOWLEDGMENT OF SURETY COMPANY

STATE OF New York }
COUNTY OF Nassau } SS

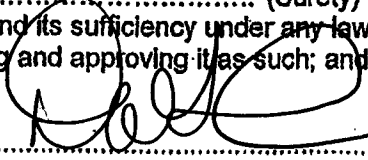
On this October 8, 2014, before me personally came Susan Lupski

to me known, who, being by me duly sworn, did depose and say; that he/she resides in Nassau County

....., State of New York....., that he/she is the Attorney-in-Fact of the The Ohio Casualty Insurance Company

..... the corporation described in which executed the

above instrument; that he/she knows the seal of said corporation; that the seal affixed to said Instrument is such corporate seal; that it was so affixed by the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order; and the affiant did further depose and say that the Superintendent of Insurance of the State of New York, has, pursuant to Section 1111 of the Insurance Law of the State of New York, issued to The Ohio Casualty Insurance Company (Surety) his/her certificate of qualification evidencing the qualification of said Company and its sufficiency under any law of the State of New York as surety and guarantor, and the propriety of accepting and approving it as such; and that such certificate has not been revoked.



Notary Public

NY acknowledgement

DANA GRANTICE
Notary Public, State of New York
No. 01GR6099128
Qualified in Nassau County
Commission Expires September 22, 2015

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by
The McGraw-Hill Companies
All rights reserved.

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Certificate No. 6627592

American Fire and Casualty Company
The Ohio Casualty Insurance Company

Liberty Mutual Insurance Company
West American Insurance Company

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That American Fire & Casualty Company and The Ohio Casualty Insurance Company are corporations duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Camille Maitland; Colette R. Chisholm; Desiree Cardlin; George O. Brewster; Gerard S. Macholz; Lee Ferrucci; Nelly Renchiwich; Peter F. Jones; Rita Sagistano; Robert T. Pearson; Susan Lupski; Thomas Bean; Vincent A. Walsh; Virginia M. Lovett

all of the city of Uniondale, state of NY each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 30th day of June, 2014.



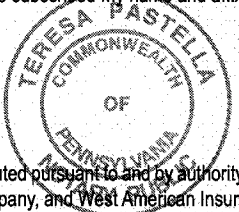
American Fire and Casualty Company
The Ohio Casualty Insurance Company
Liberty Mutual Insurance Company
West American Insurance Company

By: David M. Carey
David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 30th day of June, 2014, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of American Fire and Casualty Company, Liberty Mutual Insurance Company, The Ohio Casualty Insurance Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.



COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Plymouth Twp., Montgomery County
My Commission Expires March 28, 2017
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of American Fire and Casualty Company, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS – Section 12. Power of Attorney. Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts – SECTION 5. Surety Bonds and Undertakings. Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Gregory W. Davenport, the undersigned, Assistant Secretary, of American Fire and Casualty Company, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this OCT 08 2014 day of _____, 2014.



By: Gregory W. Davenport
Gregory W. Davenport, Assistant Secretary

currency rate, interest rate or residual value guarantees. Not valid for mortgage, note, loan, letter of credit.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.



THE OHIO CASUALTY INSURANCE COMPANY
 FINANCIAL STATEMENT — DECEMBER 31, 2013

Assets		Liabilities	
Cash and Bank Deposits	\$46,964,847	Unearned Premiums	\$950,468,970
*Bonds — U.S Government	540,744,808	Reserve for Claims and Claims Expense	2,768,804,762
*Other Bonds	3,007,256,906	Funds Held Under Reinsurance Treaties	0
*Stocks	483,417,169	Reserve for Dividends to Policyholders	196,198
Real Estate	26,823,784	Additional Statutory Reserve	0
Agents' Balances or Uncollected Premiums	763,252,695	Reserve for Commissions, Taxes and	
Accrued Interest and Rents	33,017,928	Other Liabilities	<u>536,009,637</u>
Other Admitted Assets	<u>738,119,911</u>	Total	<u>\$4,255,479,567</u>
		Special Surplus Funds	\$ 8,909,896
		Capital Stock	4,500,000
		Paid in Surplus	738,183,897
		Unassigned Surplus	632,524,688
		Surplus to Policyholders	<u>1,384,118,481</u>
Total Admitted Assets	<u>\$5,639,598,048</u>	Total Liabilities and Surplus	<u>\$5,639,598,048</u>



* Bonds are stated at amortized or investment value; Stocks at Association Market Values.
 The foregoing financial information is taken from The Ohio Casualty Insurance Company's financial statement filed with the state of Ohio Department of Insurance.

I, TIM MIKOLAJEWSKI, Assistant Secretary of The Ohio Casualty Insurance Company, do hereby certify that the foregoing is a true, and correct statement of the Assets and Liabilities of said Corporation, as of December 31, 2013, to the best of my knowledge and belief.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said Corporation at Seattle, Washington, this 20th day of March, 2013.

T. Mikolajewski

Assistant Secretary

Payment Bond (Pages 98 to 101): 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, _____

TJM Construction Corp. / Long Island Concrete, Inc. A Joint Venture

301 Mill Road, Hewlett, NY 11557

hereinafter referred to as the "Principal", and Vigilant Insurance Company, 15 Mountain View Road, Warren, NJ 07059

and The Ohio Casualty Insurance Company, 62 Maple Avenue Keene, NH 03431

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

Two Million Nine Hundred Eight Thousand and 00/100

(\$2,908,000.00) 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 121 Plymouth Paint Warehouse Relocation to 424 Wythe Building Construction. Construction of One Story CMU

Storage Building on Grade. 424 Wythe Avenue, Brooklyn, NY 11211. E-PIN: 85014B0134/DDC PIN:

8502013TR0006C. Contract No. 1 - General Construction Work. Project ID: HWKF029B

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

Payment Bond (Pages 98 to 101): Use for any contract for which a Payment Bond is required.

PAYMENT BOND (Page 2)

engaged who perform the work of laborers or mechanics at or in the vicinity of the site 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 placed 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 98 to 101): 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 8th day of October, 2014.

(Seal)
TJM Construction Corp.
By: [Signature]

TJM Construction Corp. / Long Island Concrete, Inc. A Joint Venture (L.S.)

Principal Long Island Concrete, Inc.
By: [Signature] By: [Signature]

(Seal)

Vigilant Insurance Company
Surety
By: [Signature]
Susan Lupski, Attorney-In-Fact

(Seal)

The Ohio Casualty Insurance Company
Surety
By: [Signature]
Susan Lupski, Attorney-In-Fact

(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.

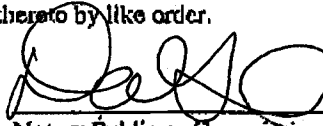
Payment Bond (Pages 98 to 101): Use for any contract for which a Payment Bond is required.

PAYMENT BOND (Page 4)

ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION

State of New York County of Nassau ss:

On this 10th day of October, 2014 before me personally came Robert S. Schaver to me known, who, being by me duly sworn did depose and say that he resides at Nassau County, New York 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.


Notary Public or Commissioner of Deeds

DANA GRANICE
Notary Public, State of New York
No. 01GR6099128
Qualified in Nassau County
Commission Expires September 22, 2015

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

RECEIVED
MAY 10 1964
U.S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C.

Payment Bond (Pages 98 to 101): Use for any contract for which a Payment Bond is required.

PAYMENT BOND (Page 4)

ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION

State of _____ County of _____ ss:

On this _____ day of _____, _____ before me personally came to me known, who, being by me duly sworn did depose and say that he resides at _____ that he is the _____ of the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it was so affixed by order of the directors of said corporation, and that he signed his name thereto by like order.

Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT OF PRINCIPAL, IF A PARTNERSHIP

State of New York County of Queens ss:

On this 10th day of October 2014 before me personally appeared James Perol to me known, and known to me to be one of the members of the firm of Long Island Concrete 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

VICTORIA AYO-VAUGHAN
Notary Public, State of New York
Registration #01AY5014042
Qualified in Queens County
Commission Expires July 15, 2015

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

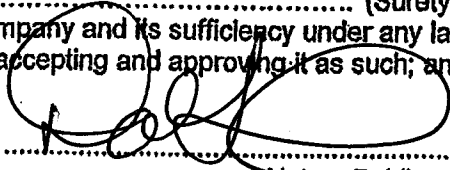
ACKNOWLEDGMENT OF SURETY COMPANY

STATE OF NEW YORK }
COUNTY OF NASSAU } SS

On this October 8, 2014, before me personally came Susan Lupski

to me known, who, being by me duly sworn, did depose and say; that he/she resides in Nassau County, State of New York, that he/she is the Attorney-in-Fact of the Vigilant Insurance Company

the corporation described in which executed the above instrument; that he/she knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order; and the affiant did further depose and say that the Superintendent of Insurance of the State of New York, has, pursuant to Section 1111 of the Insurance Law of the State of New York, issued to Vigilant Insurance Company (Surety) his/her certificate of qualification evidencing the qualification of said Company and its sufficiency under any law of the State of New York as surety and guarantor, and the propriety of accepting and approving it as such; and that such certificate has not been revoked.


Notary Public

NY acknowledgement

DANA GRANICE
Notary Public, State of New York
No. 01GR6099128
Qualified in Nassau County
Commission Expires September 22, 2015



**Chubb
Surety**

**POWER
OF
ATTORNEY**

**Federal Insurance Company
Vigilant Insurance Company
Pacific Indemnity Company**

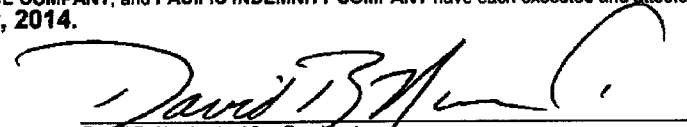
**Attn: Surety Department
15 Mountain View Road
Warren, NJ 07059**

Know All by These Presents, That **FEDERAL INSURANCE COMPANY**, an Indiana corporation, **VIGILANT INSURANCE COMPANY**, a New York corporation, and **PACIFIC INDEMNITY COMPANY**, a Wisconsin corporation, do each hereby constitute and appoint **Thomas Bean, George O. Brewster, Colette R. Chisholm, Susan Lupski, Gerard S. Macholz, Camille Maitland, Robert T. Pearson and Rita Sagistano of Uniondale, New York**

each as their true and lawful Attorney- in- Fact to execute under such designation in their names and to affix their corporate seals to and deliver for and on their behalf as surety thereon or otherwise, bonds and undertakings and other writings obligatory in the nature thereof (other than bail bonds) given or executed in the course of business, and any instruments amending or altering the same, and consents to the modification or alteration of any instrument referred to in said bonds or obligations.

In Witness Whereof, said **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY** have each executed and attested these presents and affixed their corporate seals on this **24th** day of **September, 2014**.


Dawn M. Chloros, Assistant Secretary


David B. Norris, Jr., Vice President



STATE OF NEW JERSEY
County of Somerset

ss.

On this **24th** day of **September, 2014** before me, a Notary Public of New Jersey, personally came Dawn M. Chloros, to me known to be Assistant Secretary of **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY**, the companies which executed the foregoing Power of Attorney, and the said Dawn M. Chloros, being by me duly sworn, did depose and say that she is Assistant Secretary of **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY** and knows the corporate seals thereof, that the seals affixed to the foregoing Power of Attorney are such corporate seals and were thereto affixed by authority of the By- Laws of said Companies; and that she signed said Power of Attorney as Assistant Secretary of said Companies by like authority; and that she is acquainted with David B. Norris, Jr., and knows him to be Vice President of said Companies; and that the signature of David B. Norris, Jr., subscribed to said Power of Attorney is in the genuine handwriting of David B. Norris, Jr., and was thereto subscribed by authority of said By- Laws and in deponent's presence.

Notarial Seal



**KATHERINE J. ADELAAR
NOTARY PUBLIC OF NEW JERSEY
No. 2316885
Commission Expires July 16, 2019**


Notary Public

CERTIFICATION

Extract from the By- Laws of **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY**:

"All powers of attorney for and on behalf of the Company may and shall be executed in the name and on behalf of the Company, either by the Chairman or the President or a Vice President or an Assistant Vice President, jointly with the Secretary or an Assistant Secretary, under their respective designations. The signature of such officers may be engraved, printed or lithographed. The signature of each of the following officers: Chairman, President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary and the seal of the Company may be affixed by facsimile to any power of attorney or to any certificate relating thereto appointing Assistant Secretaries or Attorneys- in- Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such power of attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached."

I, Dawn M. Chloros, Assistant Secretary of **FEDERAL INSURANCE COMPANY, VIGILANT INSURANCE COMPANY, and PACIFIC INDEMNITY COMPANY** (the "Companies") do hereby certify that

- (i) the foregoing extract of the By- Laws of the Companies is true and correct.
- (ii) the Companies are duly licensed and authorized to transact surety business in all 50 of the United States of America and the District of Columbia and are authorized by the U.S. Treasury Department; further, Federal and Vigilant are licensed in the U.S. Virgin Islands, and Federal is licensed in American Samoa, Guam, Puerto Rico, and each of the Provinces of Canada except Prince Edward Island; and
- (iii) the foregoing Power of Attorney is true, correct and in full force and effect.

Given under my hand and seals of said Companies at Warren, NJ this **October 8, 2014**




Dawn M. Chloros, Assistant Secretary

IN THE EVENT YOU WISH TO NOTIFY US OF A CLAIM, VERIFY THE AUTHENTICITY OF THIS BOND OR NOTIFY US OF ANY OTHER MATTER, PLEASE CONTACT US AT ADDRESS LISTED ABOVE, OR BY Telephone (908) 903- 3493 Fax (908) 903- 3656 e-mail: surety@chubb.com

VIGILANT INSURANCE COMPANY

STATEMENT OF ASSETS, LIABILITIES AND SURPLUS TO POLICYHOLDERS

Statutory Basis

DECEMBER 31, 2013

(in thousands of dollars)

<i>ASSETS</i>		<i>LIABILITIES AND SURPLUS TO POLICYHOLDERS</i>	
Cash and Short Term Investments	\$ 3,964	Outstanding Losses and Loss Expenses	\$ 80,847
United States Government, State and Municipal Bonds	78,124	Unearned Premiums	23,521
Other Bonds	246,433	Ceded Reinsurance Premiums Payable	65,766
Stocks	26,285	Provision for Reinsurance	299
Other Invested Assets	<u>411</u>	Other Liabilities	<u>32,630</u>
TOTAL INVESTMENTS	<u>355,217</u>	TOTAL LIABILITIES	<u>203,063</u>
Premiums Receivable	98,372	Capital Stock	4,500
Other Assets	<u>14,357</u>	Paid-In Surplus	25,169
		Unassigned Funds	<u>235,214</u>
		SURPLUS TO POLICYHOLDERS	<u>264,883</u>
TOTAL ADMITTED ASSETS	<u>\$ 467,946</u>	TOTAL LIABILITIES AND SURPLUS TO POLICYHOLDERS	<u>\$ 467,946</u>

Investments are valued in accordance with requirements of the National Association of Insurance Commissioners. At December 31, 2013, investments with a carrying value of \$10,300,338 were deposited with government authorities as required by law.

State, County & City of New York, - ss;

Yvonne Baker, Assistant Secretary of the Vigilant Insurance Company being duly sworn, deposes and says that the foregoing Statement of Assets, Liabilities and Surplus to Policyholders of said Vigilant Insurance Company on December 31, 2013 is true and correct and is a true abstract of the Annual Statement of said Company as filed with the Secretary of the Treasury of the United States for the 12 months ending December 31, 2013.

Subscribed and sworn to before me this March 11, 2014.

Jeanette Shipsey
Notary Public

JEANETTE SHIPSEY
Notary Public, State of New York
No. 02SH5074142
Qualified in Nassau County
Commission Expires March 10, 2015

Yvonne Baker
Assistant Secretary

ACKNOWLEDGMENT OF SURETY COMPANY

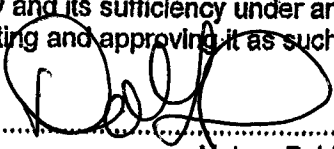
STATE OF New York }
COUNTY OF Nassau } SS

On this October 8, 2014, before me personally came Susan Lupski

to me known, who, being by me duly sworn, did depose and say; that he/she resides in Nassau County

....., State of New York....., that he/she is the Attorney-in-Fact of the The Ohio Casualty Insurance Company the corporation described in which executed the

above instrument; that he/she knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order; and the affiant did further depose and say that the Superintendent of Insurance of the State of New York, has, pursuant to Section 1111 of the Insurance Law of the State of New York, issued to The Ohio Casualty Insurance Company (Surety) his/her certificate of qualification evidencing the qualification of said Company and its sufficiency under any law of the State of New York as surety and guarantor, and the propriety of accepting and approving it as such; and that such certificate has not been revoked.


.....
Notary Public

NY acknowledgement

DANA GRANICE
Notary Public, State of New York
No. 01GR6099128
Qualified in Nassau County
Commission Expires September 22, 2015

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Certificate No. 6627669

American Fire and Casualty Company
The Ohio Casualty Insurance Company

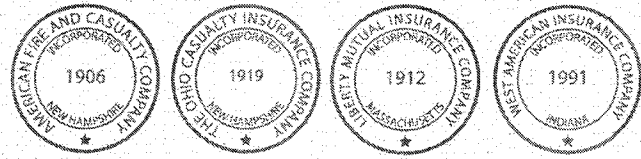
Liberty Mutual Insurance Company
West American Insurance Company

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That American Fire & Casualty Company and The Ohio Casualty Insurance Company are corporations duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Camille Maitland; Colette R. Chisholm; Desiree Cardlin; George O. Brewster; Gerard S. Macholz; Lee Ferrucci; Nelly Renchiwich; Peter F. Jones; Rita Sagistano; Robert T. Pearson; Susan Lupski; Thomas Bean; Vincent A. Walsh; Virginia M. Lovett

all of the city of Uniondale, state of NY each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 30th day of June, 2014.



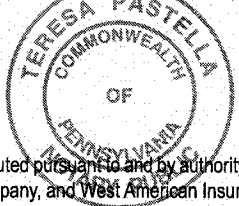
American Fire and Casualty Company
The Ohio Casualty Insurance Company
Liberty Mutual Insurance Company
West American Insurance Company

By: David M. Carey
David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 30th day of June, 2014, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of American Fire and Casualty Company, Liberty Mutual Insurance Company, The Ohio Casualty Insurance Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.



COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Plymouth Twp., Montgomery County
My Commission Expires March 28, 2017
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of American Fire and Casualty Company, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS – Section 12. Power of Attorney. Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts – SECTION 5. Surety Bonds and Undertakings. Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Gregory W. Davenport, the undersigned, Assistant Secretary, of American Fire and Casualty Company, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this OCT 08 2014 day of _____, 20_____.



By: Gregory W. Davenport
Gregory W. Davenport, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.



THE OHIO CASUALTY INSURANCE COMPANY
 FINANCIAL STATEMENT — DECEMBER 31, 2013

Assets		Liabilities	
Cash and Bank Deposits	\$46,964,847	Unearned Premiums	\$950,468,970
*Bonds — U.S Government	540,744,808	Reserve for Claims and Claims Expense.....	2,768,804,762
*Other Bonds.....	3,007,256,906	Funds Held Under Reinsurance Treaties.....	0
*Stocks	483,417,169	Reserve for Dividends to Policyholders.....	196,198
Real Estate.....	26,823,784	Additional Statutory Reserve	0
Agents' Balances or Uncollected Premiums.....	763,252,695	Reserve for Commissions, Taxes and	
Accrued Interest and Rents.....	33,017,928	Other Liabilities	<u>536,009,637</u>
Other Admitted Assets.....	<u>738,119,911</u>	Total	<u>\$4,255,479,567</u>
		Special Surplus Funds.....	\$ 8,909,896
		Capital Stock.....	4,500,000
		Paid in Surplus.....	738,183,897
		Unassigned Surplus.....	632,524,688
		Surplus to Policyholders	<u>1,384,118,481</u>
Total Admitted Assets.....	<u>\$5,639,598,048</u>	Total Liabilities and Surplus	<u>\$5,639,598,048</u>



* Bonds are stated at amortized or investment value; Stocks at Association Market Values.
 The foregoing financial information is taken from The Ohio Casualty Insurance Company's financial statement filed with the state of Ohio Department of Insurance.

I, TIM MIKOLAJEWSKI, Assistant Secretary of The Ohio Casualty Insurance Company, do hereby certify that the foregoing is a true, and correct statement of the Assets and Liabilities of said Corporation, as of December 31, 2013, to the best of my knowledge and belief.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said Corporation at Seattle, Washington, this 20th day of March, 2013.

T. Mikolajewski

Assistant Secretary

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.

Contracting agencies anticipating doing work which requires the employment of a trade or classification not included in this schedule must request the Comptroller to establish a proper classification for the work pursuant to Labor Law §220 (3-a) (a). The prevailing rate schedule as promulgated by the Comptroller, must, in compliance with law, be annexed to and form part of the contract.

Contractors are solely responsible for maintaining original payroll records which delineate, among other things, the hours each employee worked within a given classification. Contractors using rates and/or classifications not promulgated by the Comptroller do so at their own risk. Additionally, prior to bid, Agency Chief Contracting Officers must contact the Bureau of Labor Law when the need arises for a work classification not published in this schedule.

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 for work performed during the effective period, unless otherwise noted. You will be notified of any changes to this schedule by addenda published on our web site at www.comptroller.nyc.gov. The rate of wages and supplemental benefits to be paid or provided are those that prevail at the time the work is being performed. Preliminary schedules for future one-year periods are published annually in the City Record on or about June 1st of each succeeding year. Final schedules are published on or about July 1st in the City Record and on our web site at 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.

Answers to questions concerning prevailing trade practices may be obtained from the Classification Unit by calling (212) 669-7974. Please direct all other compliance issues to: Bureau of Labor Law, Attn: Wasyi Kinach, P.E., Office of the Comptroller, 1 Centre Street, Room 1122, New York, N.Y. 10007; Fax (212) 669-4002.

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.

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

Contractors are advised to review the applicable Collective Bargaining Agreements and the Comptroller's Prevailing Wage Schedule before bidding on Public Work. If there are any questions concerning prevailing wages, benefits, overtime, Holiday pay, shift differentials or any prevailing practice, please contact this office.

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.

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.

In order to meet their obligation to provide prevailing supplemental benefits to each covered employee, employers must either:

- 1) Provide bona-fide 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 benefits and wage supplements which cost the employer no less than the prevailing supplemental benefits rate in total.

Particular attention should be given to the supplemental benefits requirement. Although in most instances the payment or provision for supplemental benefits is for each hour worked, some classifications require the payment or provision of supplemental benefits for each hour paid. Consequently, some prevailing practices require benefits to be purchased at the overtime, shift differential, Holiday, Saturday, Sunday or other premium time rate.

Benefits are paid for EACH HOUR WORKED unless otherwise noted.

Wasył Kinach, P.E.
Director of Classifications
Bureau of Labor Law

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

220 SCHEDULE OF PREVAILING WAGES AND SUPPLEMENTAL BENEFITS ADDENDUM
EFFECTIVE PERIOD JANUARY 20, 2014 THROUGH JUNE 30, 2014

List of Amended Classifications

1. ASBESTOS HANDLER
2. BRICKLAYER
3. CARPENTER - BUILDING COMMERCIAL
4. CEMENT & CONCRETE WORKER
5. CORE DRILLER
6. ELECTRICIAN
7. FLOOR COVERER
8. HEAT AND FROST INSULATOR
9. HOUSE WRECKER
10. IRON WORKER - ORNAMENTAL
11. IRON WORKER - STRUCTURAL
12. MARBLE MECHANIC
13. MASON TENDER
14. MASON TENDER (INTERIOR DEMOLITION WORKER)
15. MOSAIC MECHANIC
16. PAINTER - STRUCTURAL STEEL
17. PLASTERER
18. PLASTERER - TENDER
19. PLUMBER
20. PLUMBER (MECHANICAL EQUIPMENT AND SERVICE)
21. PLUMBER (RESIDENTIAL RATES FOR 1, 2 AND 3 FAMILY HOME CONSTRUCTION)
22. PLUMBER: PUMP & TANK
23. ROOFER
24. STEAMFITTER
25. STEAMFITTER - REFRIGERATION AND AIR CONDITIONER
26. STONE MASON - SETTER
27. TILE FINISHER
28. TILE LAYER - SETTER

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

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

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

ASBESTOS HANDLER

(Hazardous Material; Disturbs, removes, encapsulates, repairs, or encloses friable asbestos material)

Asbestos Handler

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$35.90

Supplemental Benefit Rate per Hour: \$15.05

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$36.00

Supplemental Benefit Rate per Hour: \$15.45

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)

BLASTER

Blaster

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$44.40

Supplemental Benefit Rate per Hour: \$38.44

Blaster (Hydraulic)

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

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$45.17
Supplemental Benefit Rate per Hour: \$38.44

Blaster - Trac Drill Hydraulic

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$40.04
Supplemental Benefit Rate per Hour: \$38.44

Blaster - Wagon: Air Trac: Quarry Bar: Drillrunners

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$39.30
Supplemental Benefit Rate per Hour: \$38.44

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: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$38.32
Supplemental Benefit Rate per Hour: \$38.44

Blaster - Powder Carriers

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$34.66
Supplemental Benefit Rate per Hour: \$38.44

Blaster - Hydraulic Trac Drill Chuck Tender

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$33.46
Supplemental Benefit Rate per Hour: \$38.44

Blaster - Chuck Tender & Nipper

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$32.75
Supplemental Benefit Rate per Hour: \$38.44

Blaster - Magazine Keepers: (Watch Person)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$19.76
Supplemental Benefit Rate per Hour: \$38.44

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 eight hours of work on Saturday and for Make-up Time. Double time for all hours over eight Monday through Friday (except make-up hours) and for all hours worked on Sunday and Holidays.

Overtime

Double time 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

Presidential Election 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)

BOILERMAKER

Boilermaker

Effective Period: 7/1/2013 - 12/31/2013

Wage Rate per Hour: \$49.47

Supplemental Benefit Rate per Hour: \$39.78

Supplemental Note: For time and one half overtime - \$59.08; For double overtime - \$78.37.

Effective Period: 1/1/2014 - 6/30/2014

Wage Rate per Hour: \$50.45

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

Supplemental Benefit Rate per Hour: \$41.31

Supplemental Note: For time and one half overtime - \$61.37; For double overtime - \$81.43.

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)

BRICKLAYER

Bricklayer

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$46.44

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

Supplemental Benefit Rate per Hour: \$27.53

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$47.78

Supplemental Benefit Rate per Hour: \$28.03

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

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)

CARPENTER - BUILDING COMMERCIAL

Building Commercial

Effective Period: 7/1/2013 – 1/19/2014

Wage Rate per Hour: \$48.08

Supplemental Benefit Rate per Hour: \$41.10

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$48.88

Supplemental Benefit Rate per Hour: \$42.70

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.

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
Washington's Birthday
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)

CARPENTER - HEAVY CONSTRUCTION WORK (Construction of Engineering Structures and Building Foundations)

Heavy Construction Work

Effective Period: 7/1/2013 - 7/17/2013

Wage Rate per Hour: \$46.74

Supplemental Benefit Rate per Hour: \$42.37

Effective Period: 7/18/2013 - 6/30/2014

Wage Rate per Hour: \$46.82

Supplemental Benefit Rate per Hour: \$44.97

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

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§220 PREVAILING WAGE SCHEDULE

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)

CEMENT & CONCRETE WORKER

Cement & Concrete Worker

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: **\$42.33**

Supplemental Benefit Rate per Hour: **\$26.17**

Supplemental Note: \$28.92 on Saturdays; \$31.67 on Sundays & Holidays

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: **\$42.38**

Supplemental Benefit Rate per Hour: **\$26.17**

Supplemental Note: \$28.92 on Saturdays; \$31.67 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

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§220 PREVAILING WAGE SCHEDULE

Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays

1/2 day before Christmas Day
1/2 day before New Year's Day

Shift Rates

On shift work extending over a twenty-four hour period, all shifts are paid at straight time.

(Cement Concrete Workers District Council)

CEMENT MASON

Cement Mason

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$38.63

Supplemental Benefit Rate per Hour: \$39.05

Supplemental Note: Overtime supplemental benefit rate per hour: \$57.55

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.

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§220 PREVAILING WAGE SCHEDULE

(Local #780)

CORE DRILLER

Core Driller

Effective Period: 7/1/2013 - 1/19/2014
Wage Rate per Hour: **\$35.44**
Supplemental Benefit Rate per Hour: **\$19.75**

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: **\$35.71**
Supplemental Benefit Rate per Hour: **\$21.69**

Core Driller Helper

Effective Period: 7/1/2013 - 1/19/2014
Wage Rate per Hour: **\$28.60**
Supplemental Benefit Rate per Hour: **\$19.75**

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: **\$28.60**
Supplemental Benefit Rate per Hour: **\$21.69**

Core Driller Helper(Third year in the industry)

Effective Period: 7/1/2013 - 1/19/2014
Wage Rate per Hour: **\$25.74**
Supplemental Benefit Rate per Hour: **\$19.75**

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: **\$25.74**
Supplemental Benefit Rate per Hour: **\$21.69**

Core Driller Helper (Second year in the industry)

Effective Period: 7/1/2013 - 1/19/2014
Wage Rate per Hour: **\$22.88**
Supplemental Benefit Rate per Hour: **\$19.75**

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: **\$22.88**
Supplemental Benefit Rate per Hour: **\$21.69**

Core Driller Helper (First year in the industry)

Effective Period: 7/1/2013 - 1/19/2014
Wage Rate per Hour: **\$20.02**

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Supplemental Benefit Rate per Hour: \$19.75

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$20.02

Supplemental Benefit Rate per Hour: \$21.69

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

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)

DERRICKPERSON AND RIGGER

Derrick Person & Rigger

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$41.00

Supplemental Benefit Rate per Hour: \$46.07

Supplemental Note: The above supplemental rate applies for work performed in Manhattan, Bronx, Brooklyn and Queens. \$47.49 - For work performed in Staten Island.

Derrick Person & Rigger - Site Work

For site work where no rigging is involved.

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$30.00

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Supplemental Benefit Rate per Hour: \$31.32

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
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.

(Local #197)

DIVER

Diver (Marine)

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$59.40

Supplemental Benefit Rate per Hour: \$44.97

Diver Tender (Marine)

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$42.05

Supplemental Benefit Rate per Hour: \$44.97

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

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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

When three shifts are utilized each shift shall work seven and one half-hours (7 1/2 hours) and paid for 8 hours, allowing for one half hour for lunch.

(Carpenters District Council)

DOCKBUILDER - PILE DRIVER

Dockbuilder - Pile Driver

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$46.82

Supplemental Benefit Rate per Hour: \$44.97

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

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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)

DRIVER: TRUCK (TEAMSTER)

Driver - Automobile Chauffeur (Dump Truck)

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$38.11

Supplemental Benefit Rate per Hour: \$40.20

Driver - Heavy Equipment Trailer Driver

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$39.61

Supplemental Benefit Rate per Hour: \$40.20

Note: For time and one half overtime Wage Rate - \$57.16; for double time overtime Wage Rate - \$76.21

Driver - Euclid & Turnapull Operator

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$38.67

Supplemental Benefit Rate per Hour: \$40.20

Driver - Six Wheeler(3 Axle) Tractors & Trailers

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$39.11

Supplemental Benefit Rate per Hour: \$40.20

Note: For time and one half overtime Wage Rate - \$58.01; for double time overtime Wage Rate - \$77.34

Driver - Boom Truck

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$39.36

Supplemental Benefit Rate per Hour: \$40.20

Note: For time and one half overtime Wage Rate - \$58.01; for double time overtime Wage Rate - \$77.34

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

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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.

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
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Driver - Redi-Mix Driver (Sand & Gravel)

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$35.71

Supplemental Benefit Rate per Hour: \$37.27

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

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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
Election Day
Thanksgiving Day
Christmas Day

(Local #282)

ELECTRICIAN

(Including all low voltage cabling carrying data; video; and voice in combination with data and or video.)

Electrician "A" (Regular Day)

Effective Period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$52.00
Supplemental Benefit Rate per Hour: \$46.13

Effective Period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$53.00
Supplemental Benefit Rate per Hour: \$47.54

Electrician "A" (Regular Day Overtime)

Effective Period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$78.00
Supplemental Benefit Rate per Hour: \$49.39

Effective Period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$79.50
Supplemental Benefit Rate per Hour: \$50.86

Electrician "A" (Day Shift)

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Effective Period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$52.00
Supplemental Benefit Rate per Hour: \$46.13

Effective Period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$53.00
Supplemental Benefit Rate per Hour: \$47.54

Electrician "A" (Day Shift Overtime After 8 hours)

Effective Period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$78.00
Supplemental Benefit Rate per Hour: \$49.39

Effective Period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$79.50
Supplemental Benefit Rate per Hour: \$50.86

Electrician "A" (Swing Shift)

Effective Period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$61.01
Supplemental Benefit Rate per Hour: \$52.47

Effective Period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$62.19
Supplemental Benefit Rate per Hour: \$54.07

Electrician "A" (Swing Shift Overtime After 7.5 hours)

Effective Period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$91.52
Supplemental Benefit Rate per Hour: \$56.30

Effective Period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$93.29
Supplemental Benefit Rate per Hour: \$57.97

Electrician "A" (Graveyard Shift)

Effective Period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$68.34
Supplemental Benefit Rate per Hour: \$57.83

Effective Period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$69.66
Supplemental Benefit Rate per Hour: \$59.59

Electrician "A" (Graveyard Shift Overtime After 7 hours)

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Effective Period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$102.51
Supplemental Benefit Rate per Hour: \$62.11

Effective Period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$104.49
Supplemental Benefit Rate per Hour: \$63.96

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

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 \$22.86 effective 1/20/2014 and \$23.63 effective 5/14/2014.

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: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$26.50
Supplemental Benefit Rate per Hour: \$19.56
First and Second Year "M" Wage Rate Per Hour - Hired on or before 5/10/07: \$25.80
First and Second Year "M" Supplemental Rate- Hired on or before 5/10/07: \$19.21
First and Second Year "M" Wage Rate Per Hour - Hired after 5/10/07: \$22.00

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First and Second Year "M" Supplemental Rate- Hired after 5/10/07: \$17.30

Effective Period: 5/14/2014 - 6/30/2014

Wage Rate per Hour: \$27.00

Supplemental Benefit Rate per Hour: \$20.32

First and Second Year "M" Wage Rate Per Hour - Hired on or before 5/10/07: \$26.30

First and Second Year "M" Supplemental Rate- Hired on or before 5/10/07: \$19.96

First and Second Year "M" Wage Rate Per Hour - Hired after 5/10/07: \$22.50

First and Second Year "M" Supplemental Rate- Hired after 5/10/07: \$18.06

Electrician "M" (Overtime After First 8 hours)

"M" rated work shall be defined as jobbing: electrical work of limited duration and scope, also consisting of repairs and/or replacement of electrical and tele-data equipment. Includes all work necessary to retrofit, service, maintain and repair all kinds of lighting fixtures and local lighting controls and washing and cleaning of foregoing fixtures.

Effective Period: 7/1/2013 - 5/13/2014

Wage Rate per Hour: \$39.75

Supplemental Benefit Rate per Hour: \$21.23

First and Second Year "M" Wage Rate Per Hour - Hired on or before 5/10/07: \$38.70

First and Second Year "M" Supplemental Rate- Hired on or before 5/10/07: \$20.83

First and Second Year "M" Wage Rate Per Hour - Hired after 5/10/07: \$33.00

First and Second Year "M" Supplemental Rate- Hired after 5/10/07: \$18.68

Effective Period: 5/14/2014 - 6/30/2014

Wage Rate per Hour: \$40.50

Supplemental Benefit Rate per Hour: \$21.01

First and Second Year "M" Wage Rate Per Hour - Hired on or before 5/10/07: \$39.45

First and Second Year "M" Supplemental Rate- Hired on or before 5/10/07: \$21.61

First and Second Year "M" Wage Rate Per Hour - Hired after 5/10/07: \$33.75

First and Second Year "M" Supplemental Rate- Hired after 5/10/07: \$19.47

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

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§220 PREVAILING WAGE SCHEDULE

(Local #3)

ELECTRICIAN - ALARM TECHNICIAN

(Scope of Work - Inspect, test, repair, and replace defective, malfunctioning, or broken devices, components and controls of Fire, Burglar and Security Systems)

Alarm Technician

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$30.40

Supplemental Benefit Rate per Hour: \$13.90

Supplemental Note: \$12.40 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
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

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Plus one Personal Day per year

Sick Days:
One day per Year

(Local #3)

ELECTRICIAN-STREET LIGHTING WORKER

Electrician - Electro Pole Electrician

Effective Period: 7/1/2013 - 5/20/2014

Wage Rate per Hour: **\$52.00**

Supplemental Benefit Rate per Hour: **\$47.90**

Effective Period: 5/21/2014 - 6/30/2014

Wage Rate per Hour: **\$53.00**

Supplemental Benefit Rate per Hour: **\$49.34**

Electrician - Electro Pole Foundation Installer

Effective Period: 7/1/2013 - 5/20/2014

Wage Rate per Hour: **\$39.42**

Supplemental Benefit Rate per Hour: **\$36.46**

Effective Period: 5/21/2014 - 6/30/2014

Wage Rate per Hour: **\$40.18**

Supplemental Benefit Rate per Hour: **\$37.73**

Electrician - Electro Pole Maintainer

Effective Period: 7/1/2013 - 5/20/2014

Wage Rate per Hour: **\$33.75**

Supplemental Benefit Rate per Hour: **\$32.83**

Effective Period: 5/21/2014 - 6/30/2014

Wage Rate per Hour: **\$34.40**

Supplemental Benefit Rate per Hour: **\$34.00**

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

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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)

ELEVATOR CONSTRUCTOR

Elevator Constructor

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$57.01

Supplemental Benefit Rate per Hour: \$34.48

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

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

Employer contributes 8% of regular basic hourly rate as vacation pay for employees with more than 15 years of service, and 6% for employees with 5 to 15 years of service, and 4% for employees with less than 5 years of service.

(Local #1)

ELEVATOR REPAIR & MAINTENANCE

Elevator Service/Modernization Mechanic

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$45.14

Supplemental Benefit Rate per Hour: \$33.02

Overtime Description

For Service Work: Double time - all work 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

For Modernization Work (4pm to 12:30am) - regularly hourly rate plus a (15%) fifteen percent differential.

Vacation

Employer contributes 8% of regular basic hourly rate as vacation pay for employees with more than 15 years of service, and 6% for employees with 5 to 15 years of service, and 4% for employees with less than 5 years of service.

(Local #1)

ENGINEER

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

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: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$61.05

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 on overtime

Shift Wage Rate: \$97.68

Engineer - Heavy Construction Operating Engineer II

Backhoes, Basin Machines, Groover, Mechanical Sweepers, Bobcat, Boom Truck, Barrier Transport (Barrier Mover) & machines of similar nature. Operation of Churn Drills and machines of a similar nature, Stetco Silent Hoist and machines of similar nature, Vac-Alls, Meyers Machines, John Beam and machines of a similar nature, Ross Carriers and Travel Lifts and machines of a similar nature, Bulldozers, Scrapers and Turn-a-Pulls: Tugger Hoists (Used exclusively for handling excavated material); Tractors with attachments, Hyster and Roustabout Cranes, Cherry pickers. Austin Western, Grove and machines of a similar nature, Scoopmobiles, Monorails, Conveyors, Trenchers: Loaders-Rubber Tired and Tractor: Barber Greene and Eimco Loaders and Eimco Backhoes; Mighty Midget and similar breakers and Tampers, Curb and Gutter Pavers and Motor Patrol, Motor Graders and all machines of a similar nature. Locomotives 10 Tons or under. Mini-Max, Break-Tech and machines of a similar nature; Milling machines, robotic and demolition machines and machines of a similar nature, shot blaster, skid steer machines and machines of a similar nature including bobcat, pile rig rubber-tired excavator (37,000 lbs. and under), 2 man auger.

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$59.24

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 on overtime

Shift Wage Rate: \$94.78

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: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$56.22

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 on overtime

Shift Wage Rate: \$89.95

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

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

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: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$58.97

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 on overtime

Shift Wage Rate: \$94.35

Engineer - Heavy Construction Maintenance Engineer II

On Base Mounted Tower Cranes

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$77.30

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 on overtime

Shift Wage Rate: \$123.68

Engineer - Heavy Construction Maintenance Engineer III

On Generators, Light Towers

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$39.10

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 on overtime

Shift Wage Rate: \$62.56

Engineer - Heavy Construction Maintenance Engineer IV

On Pumps and Mixers including mud sucking

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$40.11

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 on overtime

Shift Wage Rate: \$64.18

Engineer - Heavy Construction Oilers I

Gradalls, Cold Planer Grader, Concrete Pumps, Driving Truck Cranes, Driving and Operating Fuel and Grease Trucks.

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$53.22

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 on overtime

Shift Wage Rate: \$85.15

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

Engineer - Heavy Construction Oilers II

All gasoline, electric, diesel or air operated Shovels, Draglines, Backhoes; Keystones, Pavers, Gunitite Machines, Battery of Compressors, Crawler Cranes, two-person Trenching Machines.

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$36.97

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 on overtime

Shift Wage Rate: \$59.15

Engineer - Steel Erection Maintenance Engineers

Derrick, Travelers, Tower, Crawler Tower and Climbing Cranes

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$57.05

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 on overtime

Shift Wage Rate: \$91.28

Engineer - Steel Erection Oiler I

On a Truck Crane

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$53.43

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 on overtime

Shift Wage Rate: \$85.49

Engineer - Steel Erection Oiler II

On a Crawler Crane

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$40.84

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 on overtime

Shift Wage Rate: \$65.34

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.

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

Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
Lincoln's Birthday
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Employees must work at least one day in the payroll week in which the holiday occurs to receive the paid holiday

Engineer - Building Work Maintenance Engineers I

Installing, repairing, maintaining, dismantling (of all equipment including: Steel Cutting and Bending Machines, Mechanical Heaters, Mine Hoists, Climbing Cranes, Tower Cranes, Linden Peine, Lorain, Liebherr, Mannes, or machines of a similar nature, Well Point Systems, Deep Well Pumps, Concrete Mixers with loading Device, Concrete Plants, Motor Generators when used for temporary power and lights), skid steer machines of a similar nature including bobcat.

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$54.04

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 on overtime

Engineer - Building Work Maintenance Engineers II

On Pumps, Generators, Mixers and Heaters

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$42.10

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 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: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$51.40

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 on overtime

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§220 PREVAILING WAGE SCHEDULE

Engineer - Building Work Oilers II

Oilers on Crawler Cranes, Backhoes, Trenching Machines, Guniting Machines, Compressors (three or more in Battery).

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$38.31

Supplemental Benefit Rate per Hour: \$31.93

Supplemental Note: \$57.46 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)

ENGINEER - CITY SURVEYOR AND CONSULTANT

Party Chief

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$35.55

Supplemental Benefit Rate per Hour: \$17.65

Instrument Person

Effective Period: 7/1/2013 - 6/30/2014

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§220 PREVAILING WAGE SCHEDULE

Wage Rate per Hour: \$29.41

Supplemental Benefit Rate per Hour: \$17.65

Rodperson

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$25.54

Supplemental Benefit Rate per Hour: \$17.65

Overtime Description

Overtime Benefit Rate - \$23.63 per hour (time & one half) \$29.95 per hour (double time).

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)

ENGINEER - FIELD (BUILDING CONSTRUCTION)

(Construction of Building Projects, Concrete Superstructures, etc.)

Field Engineer - BC Party Chief

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$55.40

Supplemental Benefit Rate per Hour: \$30.62

Supplemental Note: Overtime Benefit Rate - \$42.73 per hour (time & one half) \$54.84 per hour (double time).

Field Engineer - BC Instrument Person

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$43.10

Supplemental Benefit Rate per Hour: \$30.62

Supplemental Note: Overtime Benefit Rate - \$42.73 per hour (time & one half) \$54.84 per hour (double time).

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\$220 PREVAILING WAGE SCHEDULE

Field Engineer - BC Rodperson

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$27.96

Supplemental Benefit Rate per Hour: \$30.62

Supplemental Note: Overtime Benefit Rate - \$42.73 per hour (time & one half) \$54.84 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)

**ENGINEER - FIELD (HEAVY CONSTRUCTION)
(Construction of Roads, Tunnels, Bridges, Sewers, Building Foundations,
Engineering Structures etc.)**

Field Engineer - HC Party Chief

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$62.61

Supplemental Benefit Rate per Hour: \$30.62

Supplemental Note: Overtime benefit rate - \$42.73 per hour (time & one half), \$54.84 per hour (double time).

Field Engineer - HC Instrument Person

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$46.00

Supplemental Benefit Rate per Hour: \$30.62

Supplemental Note: Overtime benefit rate - \$42.73 per hour (time & one half), \$54.84 per hour (double time).

Field Engineer - HC Rodperson

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§220 PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$38.61

Supplemental Benefit Rate per Hour: \$30.62

Supplemental Note: Overtime benefit rate - \$42.73 per hour (time & one half), \$54.84 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)

ENGINEER - FIELD (STEEL ERECTION)

Field Engineer - Steel Erection Party Chief

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$58.50

Supplemental Benefit Rate per Hour: \$30.62

Supplemental Note: Overtime benefit rate - \$42.73 per hour (time & one half), \$54.84 per hour (double time).

Field Engineer - Steel Erection Instrument Person

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$45.53

Supplemental Benefit Rate per Hour: \$30.62

Supplemental Note: Overtime benefit rate - \$42.73 per hour (time & one half), \$54.84 per hour (double time).

Field Engineer - Steel Erection Rodperson

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$30.43

Supplemental Benefit Rate per Hour: \$30.62

Supplemental Note: Overtime benefit rate - \$42.73 per hour (time & one half), \$54.84 per hour (double time).

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§220 PREVAILING WAGE SCHEDULE

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)

ENGINEER - OPERATING

Operating Engineer - Road & Heavy Construction I

Back Filling Machines, Cranes, Mucking Machines and Dual Drum Paver.

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$67.70

Supplemental Benefit Rate per Hour: \$28.60

Supplemental Note: \$51.75 overtime hours

Shift Wage Rate: \$108.32

Operating Engineer - Road & Heavy Construction II

Backhoes, Power Shovels, Hydraulic Clam Shells, Steel Erection, Moles and machines of a similar nature.

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$70.10

Supplemental Benefit Rate per Hour: \$28.60

Supplemental Note: 51.75 overtime hours

Shift Wage Rate: \$112.16

Operating Engineer - Road & Heavy Construction III

Mine Hoists, Cranes, etc. (Used as Mine Hoists)

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Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$72.34
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
Shift Wage Rate: \$115.74

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: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$70.63
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
Shift Wage Rate: \$113.01

Operating Engineer - Road & Heavy Construction V

Pile Drivers & Rigs (employing Dock Builder foreperson): Derrick Boats, Tunnel Shovels.

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$69.23
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
Shift Wage Rate: \$110.77

Operating Engineer - Road & Heavy Construction VI

Mixers (Concrete with loading attachment), Concrete Pavers, Cableways, Land Derricks, Power Houses (Low Air Pressure Units).

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$65.76
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
Shift Wage Rate: \$105.22

Operating Engineer - Road & Heavy Construction VII

Barrier Movers , Barrier Transport and Machines of a Similar Nature.

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$53.08
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
Shift Wage Rate: \$84.93

Operating Engineer - Road & Heavy Construction VIII

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Utility Compressors

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$41.18
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
Shift Wage Rate: \$51.93

Operating Engineer - Road & Heavy Construction IX

Horizontal Boring Rig

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$62.53
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
Shift Wage Rate: \$100.05

Operating Engineer - Road & Heavy Construction X

Elevators (manually operated as personnel hoist).

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$57.46
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
Shift Wage Rate: \$91.94

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: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$44.63
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
Shift Wage Rate: \$71.41

Operating Engineer - Road & Heavy Construction XII

All Drills and Machines of a similar nature.

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$66.45
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
Shift Wage Rate: \$106.32

Operating Engineer - Road & Heavy Construction XIII

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Concrete Pumps, Concrete Plant, Stone Crushers, Double Drum Hoist, Power Houses (other than above).

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$64.34

Supplemental Benefit Rate per Hour: \$28.60

Supplemental Note: \$51.75 overtime hours

Shift Wage Rate: \$102.94

Operating Engineer - Road & Heavy Construction XIV

Concrete Mixer

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$61.53

Supplemental Benefit Rate per Hour: \$28.60

Supplemental Note: \$51.75 overtime hours

Shift Wage Rate: \$98.45

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: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$41.44

Supplemental Benefit Rate per Hour: \$28.60

Supplemental Note: \$51.75 overtime hours

Shift Wage Rate: \$66.30

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: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$58.74

Supplemental Benefit Rate per Hour: \$28.60

Supplemental Note: \$51.85 overtime hours

Shift Wage Rate: \$93.98

Operating Engineer - Road & Heavy Construction XVII

On-Site concrete plant engineer, On-site Asphalt Plant Engineer, and Vibratory console.

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$59.21

Supplemental Benefit Rate per Hour: \$28.60

Supplemental Note: \$51.75 overtime hours

Shift Wage Rate: \$94.74

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§220 PREVAILING WAGE SCHEDULE

Operating Engineer - Road & Heavy Construction XVIII

Tower Crane

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$85.00
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
Shift Wage Rate: \$136.00

Operating Engineer - Paving I

Asphalt Spreaders, Autogrades (C.M.I.), Roto/Mil

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$65.76
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
Shift Wage Rate: \$105.22

Operating Engineer - Paving II

Asphalt Roller

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$64.04
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
Shift Wage Rate: \$102.46

Operating Engineer - Paving III

Asphalt Plants

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$54.17
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
Shift Wage Rate: \$86.67

Operating Engineer - Concrete I

Cranes

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$70.32
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours

Operating Engineer - Concrete II

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Compressors

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: **\$41.76**
Supplemental Benefit Rate per Hour: **\$28.60**
Supplemental Note: **\$51.75** overtime hours

Operating Engineer - Concrete III

Micro-traps (Negative Air Machines), Vac-All Remediation System.

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: **\$56.16**
Supplemental Benefit Rate per Hour: **\$28.60**
Supplemental Note: **\$51.75** overtime hours

Operating Engineer - Steel Erection I

Three Drum Derricks

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: **\$73.37**
Supplemental Benefit Rate per Hour: **\$28.60**
Supplemental Note: **\$51.75** overtime hours
Shift Wage Rate: **\$117.39**

Operating Engineer - Steel Erection II

Cranes, 2 Drum Derricks, Hydraulic Cranes, Fork Lifts and Boom Trucks.

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: **\$70.50**
Supplemental Benefit Rate per Hour: **\$28.60**
Supplemental Note: **\$51.75** overtime hours
Shift Wage Rate: **\$112.80**

Operating Engineer - Steel Erection III

Compressors, Welding Machines.

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: **\$41.84**
Supplemental Benefit Rate per Hour: **\$28.60**
Supplemental Note: **\$51.75** overtime hours
Shift Wage Rate: **\$66.94**

Operating Engineer - Steel Erection IV

Compressors - Not Combined with Welding Machine.

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Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$39.85
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
Shift Wage Rate: \$63.76

Operating Engineer - Building Work I

Forklifts, Plaster (Platform machine), Plaster Bucket, Concrete Pump and all other equipment used for hoisting material.

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$57.82
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 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: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$43.28
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours

Operating Engineer - Building Work III

Double Drum

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$65.83
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours

Operating Engineer - Building Work IV

Stone Derrick, Cranes, Hydraulic Cranes Boom Trucks.

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$69.74
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours

Operating Engineer - Building Work V

Dismantling and Erection of Cranes, Relief Engineer.

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$64.26

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

Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours

Operating Engineer - Building Work VI

4 Pole Hoist, Single Drum Hoists.

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$63.58
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours

Operating Engineer - Building Work VII

Rack & Pinion and House Cars

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$50.53
Supplemental Benefit Rate per Hour: \$28.60
Supplemental Note: \$51.75 overtime hours
For New House Car projects started after 7/1/11 only: Wage Rate per Hour \$40.31

Overtime Description

On jobs of more than one shift, if an Employee fails to report for work through any cause over which the Employer has no control, the Employee on duty will continue to work at the rate of single time.

For House Cars and Rack & Pinion only: Overtime paid at time and one-half for all hours in excess of eight hours in a day, Saturday, Sunday and Holidays worked.

Overtime

Double time the regular rate after an 8 hour day.
Double time the regular time rate for Saturday.
Double time the regular rate for Sunday.
Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
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.

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

(Operating Engineer Local #14)

FLOOR COVERER

(Interior vinyl composition tile, sheath vinyl linoleum and wood parquet tile including site preparation and synthetic turf not including site preparation)

Floor Coverer

Effective Period: 7/1/2013 – 1/19/2014

Wage Rate per Hour: \$46.15

Supplemental Benefit Rate per Hour: \$38.50

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$48.88

Supplemental Benefit Rate per Hour: \$42.70

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

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)

GLAZIER
(New Construction, Remodeling, and Alteration)

Glazier

Effective Period: 7/1/2013 - 10/31/2013

Wage Rate per Hour: \$42.00

Supplemental Benefit Rate per Hour: \$33.24

Supplemental Note: Supplemental Benefit Overtime Rate: \$41.24

Effective Period: 11/1/2013 - 6/30/2014

Wage Rate per Hour: \$42.00

Supplemental Benefit Rate per Hour: \$34.09

Supplemental Note: Supplemental Benefit Overtime Rate: \$42.59

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

Paid 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)

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

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 \$105,000. 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: 7/1/2013 - 4/30/2014

Wage Rate per Hour: **\$23.50**

Supplemental Benefit Rate per Hour: **\$18.54**

Effective Period: 5/1/2014 - 6/30/2014

Wage Rate per Hour: **\$23.60**

Supplemental Benefit Rate per Hour: **\$19.04**

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)

HEAT AND FROST INSULATOR

Heat & Frost Insulator

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: **\$56.48**

Supplemental Benefit Rate per Hour: **\$33.31**

Effective Period: 1/20/2014 - 6/30/2014

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

Wage Rate per Hour: \$56.98

Supplemental Benefit Rate per Hour: \$34.81

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)

HOUSE WRECKER (TOTAL DEMOLITION)

House Wrecker - Tier A

On all work sites the first, second, eleventh and every third House Wrecker thereafter shall be Tier A House Wreckers (i.e. 1st, 2nd, 11th, 14th etc). The 10th and 20th House Wrecker shall be apprentices. Other House Wreckers shall be Tier B House Wreckers.

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

Effective Period: 7/1/2013 – 1/19/2014
Wage Rate per Hour: \$34.01
Supplemental Benefit Rate per Hour: \$25.14

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: \$34.51
Supplemental Benefit Rate per Hour: \$25.59

House Wrecker - Tier B

On all work sites the first, second, eleventh and every third House Wrecker thereafter shall be Tier A House Wreckers (i.e. 1st, 2nd, 11th, 14th etc). The 10th and 20th House Wrecker shall be apprentices. Other House Wreckers shall be Tier B House Wreckers.

Effective Period: 7/1/2013 – 1/19/2014
Wage Rate per Hour: \$23.75
Supplemental Benefit Rate per Hour: \$18.62

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: \$24.02
Supplemental Benefit Rate per Hour: \$19.12

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

None

(Mason Tenders District Council)

IRON WORKER - ORNAMENTAL

Iron Worker - Ornamental

Effective Period: 7/1/2013 – 1/19/2014

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

Wage Rate per Hour: \$42.30

Supplemental Benefit Rate per Hour: \$43.54

Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$42.70

Supplemental Benefit Rate per Hour: \$44.57

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)

IRON WORKER - STRUCTURAL

Iron Worker - Structural

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$46.75

Supplemental Benefit Rate per Hour: \$62.48

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

Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$47.25

Supplemental Benefit Rate per Hour: \$64.43

Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

Overtime Description

Monday through Friday- the first eight hours are paid at straight time, the 9th and 10th hours are paid at time and one-half the regular rate, all additional weekday overtime is paid at double the regular rate. Saturdays- the first eight hours are paid at time and one-half the regular rate, double time thereafter. Sunday-all shifts are paid at double time.

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

Good Friday

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.

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)

LABORER

(Foundation, Concrete, Excavating, Street Pipe Layer and Common)

Laborer

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

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: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$39.25

Supplemental Benefit Rate per Hour: \$33.25

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).

New Year's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

Labor Day

Thanksgiving Day

Shift Rates

When two shifts are employed, single time rate shall be paid for each shift. When three shifts are found necessary, each shift shall work seven and one half hours (7 ½), but shall be paid for eight (8) hours of labor, and be permitted one half hour for lunch.

(Local #731)

LANDSCAPING

(Landscaping tasks, 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: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$24.25

Supplemental Benefit Rate per Hour: \$12.30

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

Landscaper (3 - 6 years experience)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$23.25
Supplemental Benefit Rate per Hour: \$12.30

Landscaper (up to 3 years experience)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$20.75
Supplemental Benefit Rate per Hour: \$12.30

Groundperson

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$20.75
Supplemental Benefit Rate per Hour: \$12.30

Tree Remover / Pruner

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$29.25
Supplemental Benefit Rate per Hour: \$12.30

Landscaper Sprayer (Pesticide Applicator)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$19.25
Supplemental Benefit Rate per Hour: \$12.30

Watering - Plant Maintainer

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$14.25
Supplemental Benefit Rate per Hour: \$12.30

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

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

Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Shift Rates

Work performed on a 4pm to 12am shift has a 15% differential. Work performed on a 12am to 8am shift has a 20% differential.

(Local #175)

MARBLE MECHANIC

Marble Setter

Effective Period: 7/1/2013 – 1/19/2014

Wage Rate per Hour: \$49.19

Supplemental Benefit Rate per Hour: \$32.24

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$50.57

Supplemental Benefit Rate per Hour: \$33.82

Marble Finisher

Effective Period: 7/1/2013 – 1/19/2014

Wage Rate per Hour: \$39.05

Supplemental Benefit Rate per Hour: \$31.43

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$39.71

Supplemental Benefit Rate per Hour: \$33.10

Marble Polisher

Effective Period: 7/1/2013 – 1/19/2014

Wage Rate per Hour: \$34.73

Supplemental Benefit Rate per Hour: \$24.60

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$35.64

Supplemental Benefit Rate per Hour: \$25.64

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.

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

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
Christmas Day

Paid Holidays

None

(Local #7)

MASON TENDER

Mason Tender

Effective Period: 7/1/2013 – 1/19/2014
Wage Rate per Hour: \$35.00
Supplemental Benefit Rate per Hour: \$25.74

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: \$35.53
Supplemental Benefit Rate per Hour: \$26.31

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

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

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)

MASON TENDER (INTERIOR DEMOLITION WORKER)

(The erection, building, moving, servicing and dismantling of enclosures, scaffolding, barricades, protection and site safety structures etc., on Interior Demolition jobs.)

Mason Tender Tier A

Effective Period: 7/1/2013 – 1/19/2014

Wage Rate per Hour: **\$34.07**

Supplemental Benefit Rate per Hour: **\$19.77**

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: **\$34.59**

Supplemental Benefit Rate per Hour: **\$20.75**

Mason Tender Tier B

On Interior Demolition job sites 33 1/3 % of the employees shall be classified as Tier A Interior Demolition Workers and 66 2/3 % shall be classified as Tier B Interior Demolition Workers; provided that the employer may employ more than 33 1/3 % Tier A Interior Demolition Workers on the job site. Where the number of employees on a job site is not divisible by 3, the first additional employee (above the number of employees divisible by three) shall be a Tier B Interior Demolition Worker, and the second additional employee shall be a Tier A Interior Demolition Worker.

Effective Period: 7/1/2013 – 1/19/2014

Wage Rate per Hour: **\$23.27**

Supplemental Benefit Rate per Hour: **\$14.08**

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: **\$23.78**

Supplemental Benefit Rate per Hour: **\$15.07**

Overtime

Time and one half the regular rate after an 8 hour day.

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

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)

METALLIC LATHER

Metallic Lather

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$41.43

Supplemental Benefit Rate per Hour: \$40.15

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
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.

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

1/2 day on New Year's Eve if work is performed in the A.M.

Shift Rates

There shall be either two (2) or three (3) shifts, each shift shall be eight (8) hours with nine (9) hours pay, including one half (½) hour for lunch. Off-Hour Start shall commence after 3:30 P.M. and shall conclude by 6:00 A.M. The first consecutive seven (7) hours shall be at straight time with a differential of twelve dollars (\$12.00) per hour. Fringes shall be paid at the straight time rate.

(Local #46)

MILLWRIGHT

Millwright

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$47.69

Supplemental Benefit Rate per Hour: \$48.87

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

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.

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

(Local #740)

MOSAIC MECHANIC

Mosaic Mechanic - Mosaic & Terrazzo Mechanic

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$44.39

Supplemental Benefit Rate per Hour: \$35.11

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of \$46.08 per hour.

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$44.64

Supplemental Benefit Rate per Hour: \$35.83

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of \$46.80 per hour.

Mosaic Mechanic - Mosaic & Terrazzo Finisher

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$42.78

Supplemental Benefit Rate per Hour: \$35.11

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of \$46.08 per hour.

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$43.03

Supplemental Benefit Rate per Hour: \$35.82

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of \$46.79 per hour.

Mosaic Mechanic - Machine Operator Grinder

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$42.78

Supplemental Benefit Rate per Hour: \$35.11

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of \$46.08 per hour.

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$43.03

Supplemental Benefit Rate per Hour: \$35.82

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of \$46.79 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

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

Good Friday
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

(Local #7)

PAINTER

Painter - Brush & Roller

Effective Period: 7/1/2013 - 4/30/2014

Wage Rate per Hour: \$37.50

Supplemental Benefit Rate per Hour: \$25.62

Supplemental Note: \$30.25 on overtime

Effective Period: 5/1/2014 - 6/30/2014

Wage Rate per Hour: \$39.50

Supplemental Benefit Rate per Hour: \$26.12

Supplemental Note: \$30.75 on overtime

Spray & Scaffold / Decorative / Sandblast

Effective Period: 7/1/2013 - 4/30/2014

Wage Rate per Hour: \$40.50

Supplemental Benefit Rate per Hour: \$25.62

Supplemental Note: \$30.25 on overtime

Effective Period: 5/1/2014 - 6/30/2014

Wage Rate per Hour: \$42.50

Supplemental Benefit Rate per Hour: \$26.12

Supplemental Note: \$30.75 on overtime

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

President's Day

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

Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays

None

(District Council of Painters #9)

PAINTER - SIGN

Designer

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$36.15
Supplemental Benefit Rate per Hour: \$9.66

Journey person

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$33.62
Supplemental Benefit Rate per Hour: \$9.66

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.
Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Shift Rates

All work performed outside the regular 8 hour work day (either 7:00 A.M to 3:30 P.M or 8:00 A.M. to 4:30 P.M) shall be paid at time and one half the regular hourly rate.

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

(Local #8A-28A)

PAINTER - STRIPER

Striper (paint)

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: **\$33.50**

Supplemental Benefit Rate per Hour: **\$11.62**

Supplemental Note: Overtime Supplemental Benefit rate - \$7.42; New Hire Rate (0-3 months) - \$0.00

Lineperson (thermoplastic)

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: **\$37.50**

Supplemental Benefit Rate per Hour: **\$11.62**

Supplemental Note: Overtime Supplemental Benefit rate - \$7.42; New Hire Rate (0-3 months) - \$0.00

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

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)

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

PAINTER - STRUCTURAL STEEL

Painters on Structural Steel

Effective Period: 7/1/2013 – 1/19/2014
Wage Rate per Hour: \$47.00
Supplemental Benefit Rate per Hour: \$32.08

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: \$47.00
Supplemental Benefit Rate per Hour: \$33.58

Painter - Power Tool

Effective Period: 7/1/2013 – 1/19/2014
Wage Rate per Hour: \$53.00
Supplemental Benefit Rate per Hour: \$32.08

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: \$53.00
Supplemental Benefit Rate per Hour: \$33.58

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)

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

PAPERHANGER

Paperhanger

Effective Period: 7/1/2013 - 4/30/2014

Wage Rate per Hour: \$39.00

Supplemental Benefit Rate per Hour: \$29.23

Supplemental Note: Supplemental benefits are to be paid at the appropriate straight time and overtime rate.

Effective Period: 5/1/2014 - 6/30/2014

Wage Rate per Hour: \$41.08

Supplemental Benefit Rate per Hour: \$29.23

Supplemental Note: Supplemental benefits are to be paid at the appropriate straight time and overtime rate.

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

Shift Rates

Evening shift - 4:30 P.M. to 12:00 Midnight (regular rate of pay); any work performed before 7:00 A.M. shall be at time and one half the regular base rate of pay.

(District Council of Painters #9)

PAVER AND ROADBUILDER

Paver & Roadbuilder - Formsetter

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$43.54

Supplemental Benefit Rate per Hour: \$33.55

Paver & Roadbuilder - Laborer

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

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: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$39.67
Supplemental Benefit Rate per Hour: \$33.55

Production Paver & Roadbuilder - Screed Person

(Production paving is asphalt paving when using a paving machine or on a project where a paving machine is traditionally used)

Adjustment of paving machinery on production paving jobs.

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$45.12
Supplemental Benefit Rate per Hour: \$33.55

Production Paver & Roadbuilder - Raker

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$44.61
Supplemental Benefit Rate per Hour: \$33.55

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: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$41.32
Supplemental Benefit Rate per Hour: \$33.55

Overtime Description

Veteran's Day is a Paid Holiday for employees working on production paving.

If an employee works New Year's Day or Christmas Day, they receive the single time rate plus 25%.

Employees who work on a holiday listed below receive the straight time rate plus one day's pay for the holiday.

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Paid Holidays

Memorial Day

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

Independence Day
Labor Day
Presidential Election 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 20% over the single time rate for the screed person, rakers and shovelers directly involved only. 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.

(Local #1010)

PLASTERER

Plasterer

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: **\$41.13**

Supplemental Benefit Rate per Hour: **\$24.95**

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: **\$41.78**

Supplemental Benefit Rate per Hour: **\$27.95**

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

Martin Luther King Jr. Day

President's Day

Good Friday

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

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 #530)

PLASTERER - TENDER

Plasterer - Tender

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: **\$35.00**

Supplemental Benefit Rate per Hour: **\$25.74**

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: **\$35.53**

Supplemental Benefit Rate per Hour: **\$26.31**

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

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

When work commences outside regular work hours, workers receive an hour additional (differential) wage and supplement payment. Eight hours pay for seven hours work or nine hours pay for eight hours work.

(Mason Tenders District Council)

PLUMBER

Plumber

Effective Period: 7/1/2013 – 1/19/2014

Wage Rate per Hour: **\$52.36**

Supplemental Benefit Rate per Hour: **\$37.34**

Supplemental Note: Overtime supplemental benefit rate per hour: **\$74.40**

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: **\$64.87**

Supplemental Benefit Rate per Hour: **\$25.18**

Supplemental Note: Overtime supplemental benefit rate per hour: **\$50.08**

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.

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

(Plumbers Local #1)

PLUMBER (MECHANICAL EQUIPMENT AND SERVICE)
(Mechanical Equipment and Service work shall include any repair and/or replacement of the present plumbing system.)

Effective Period: 7/1/2013 - 1/19/2014
Wage Rate per Hour: **\$33.46**
Supplemental Benefit Rate per Hour: **\$16.93**

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: **\$38.27**
Supplemental Benefit Rate per Hour: **\$12.84**

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.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).
New Year's Day
President's Day
Memorial Day
Independence Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

(Plumbers Local # 1)

PLUMBER (RESIDENTIAL RATES FOR 1, 2 AND 3 FAMILY HOME CONSTRUCTION)

Effective Period: 7/1/2013 - 1/19/2014
Wage Rate per Hour: **\$37.11**
Supplemental Benefit Rate per Hour: **\$25.56**

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: **\$44.91**
Supplemental Benefit Rate per Hour: **\$18.37**

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

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

30% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shifts Monday to Friday.
50% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shift work performed on weekends. For shift work on holidays, double time wages and fringe benefits shall be paid.

(Plumbers Local #1)

**PLUMBER: PUMP & TANK
(Installation and Maintenance)**

Plumber - Pump & Tank

Effective Period: 7/1/2013 – 1/19/2014

Wage Rate per Hour: \$53.01

Supplemental Benefit Rate per Hour: \$31.86

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$62.83

Supplemental Benefit Rate per Hour: \$21.37

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

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

Time and one half the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

Shift Rates

All work outside the regular workday (8:00 A.M. to 3:30 P.M.) is to be paid at time and one half the regular hourly rate

(Plumbers Local #1)

POINTER - WATERPROOFER, CAULKER MECHANIC (EXTERIOR BUILDING RENOVATION)

Pointer - Waterproofer, Caulker Mechanic

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$45.41

Supplemental Benefit Rate per Hour: \$23.29

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

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

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)

ROOFER

Roofer

Effective Period: 7/1/2013 – 1/19/2014

Wage Rate per Hour: **\$39.00**

Supplemental Benefit Rate per Hour: **\$27.37**

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: **\$40.00**

Supplemental Benefit Rate per Hour: **\$27.87**

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

Presidential Election 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)

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

**SANDBLASTER - STEAMBLASTER
(Exterior Building Renovation)**

Sandblaster / Steamblaster

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: **\$45.41**

Supplemental Benefit Rate per Hour: **\$23.29**

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)

SHEET METAL WORKER

Sheet Metal Worker

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: **\$45.96**

Supplemental Benefit Rate per Hour: **\$43.19**

Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Sheet Metal Worker - Duct Cleaner

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

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$12.90
Supplemental Benefit Rate per Hour: \$8.07

Sheet Metal Worker - Fan Maintenance

(The temporary operation of fans or blowers in new or existing buildings for heating and/or ventilation, and/or air conditioning prior to the completion of the project.)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$36.77
Supplemental Benefit Rate per Hour: \$43.19

Overtime

Time and one half the regular rate after a 7 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
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 (seven 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. No journey person engaged in fan maintenance shall work in excess of forty (40) hours in any work week.

(Local #28)

**SHEET METAL WORKER - SPECIALTY
(Decking & Siding)**

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

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: 7/1/2013 - 7/31/2013

Wage Rate per Hour: \$41.28

Supplemental Benefit Rate per Hour: \$22.88

Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Effective Period: 8/1/2013 - 6/30/2014

Wage Rate per Hour: \$40.78

Supplemental Benefit Rate per Hour: \$23.38

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)

SIGN ERECTOR

(Sheet Metal, Plastic, Electric, and Neon)

Sign Erector

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$42.80

Supplemental Benefit Rate per Hour: \$42.17

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

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)

STEAMFITTER

Steamfitter I

Effective Period: 7/1/2013 – 1/19/2014
Wage Rate per Hour: **\$52.50**
Supplemental Benefit Rate per Hour: **\$50.54**
Supplemental Note: Overtime supplemental benefit rate: **\$100.34**

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: **\$53.25**
Supplemental Benefit Rate per Hour: **\$51.04**
Supplemental Note: Overtime supplemental benefit rate: **\$101.34**

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

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

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.

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: 7/1/2013 – 1/19/2014

Wage Rate per Hour: **\$52.50**

Supplemental Benefit Rate per Hour: **\$50.54**

Supplemental Note: Overtime supplemental benefit rate: **\$100.34**

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: **\$53.25**

Supplemental Benefit Rate per Hour: **\$51.04**

Supplemental Note: Overtime supplemental benefit rate: **\$101.34**

Overtime

Double time the regular rate after an 8 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Paid Holidays

None

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

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

STEAMFITTER - REFRIGERATION AND AIR CONDITIONER (Maintenance and Installation Service Person)

Refrigeration and Air Conditioner Mechanic

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$38.05

Supplemental Benefit Rate per Hour: \$12.26

Effective Period: 1/20/2014 – 6/30/2014

Wage Rate per Hour: \$38.30

Supplemental Benefit Rate per Hour: \$12.76

Refrigeration and Air Conditioner Service Person V

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$31.26

Supplemental Benefit Rate per Hour: \$11.13

Effective Period: 1/20/2014 – 6/30/2014

Wage Rate per Hour: \$31.47

Supplemental Benefit Rate per Hour: \$11.55

Refrigeration and Air Conditioner Service Person IV

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$25.90

Supplemental Benefit Rate per Hour: \$10.16

Effective Period: 1/20/2014 – 6/30/2014

Wage Rate per Hour: \$26.07

Supplemental Benefit Rate per Hour: \$10.52

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

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: 7/1/2013 - 1/19/2014
Wage Rate per Hour: \$22.23
Supplemental Benefit Rate per Hour: \$9.44

Effective Period: 1/20/2014 – 6/30/2014
Wage Rate per Hour: \$22.38
Supplemental Benefit Rate per Hour: \$9.76

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: 7/1/2013 - 1/19/2014
Wage Rate per Hour: \$18.44
Supplemental Benefit Rate per Hour: \$8.78

Effective Period: 1/20/2014 – 6/30/2014
Wage Rate per Hour: \$18.56
Supplemental Benefit Rate per Hour: \$9.06

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: 7/1/2013 - 1/19/2014
Wage Rate per Hour: \$13.48
Supplemental Benefit Rate per Hour: \$8.10

Effective Period: 1/20/2014 – 6/30/2014
Wage Rate per Hour: \$13.57
Supplemental Benefit Rate per Hour: \$8.30

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
Independence Day
Labor Day
Veteran's Day
Thanksgiving Day

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

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)

STONE MASON - SETTER

Stone Mason - Setters

Effective Period: 7/1/2013 – 1/19/2014

Wage Rate per Hour: \$47.72

Supplemental Benefit Rate per Hour: \$35.28

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$46.56

Supplemental Benefit Rate per Hour: \$36.40

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
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

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

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.

Shift Rates

For all work outside the regular workday (8:00 A.M. to 3:30 P.M. Monday through Friday), the pay shall be straight time plus a ten percent (10%) differential.

(Bricklayers District Council)

TAPER

Drywall Taper

Effective Period: 7/1/2013 - 12/31/2013

Wage Rate per Hour: **\$44.32**

Supplemental Benefit Rate per Hour: **\$21.66**

Effective Period: 1/1/2014 - 6/24/2014

Wage Rate per Hour: **\$44.82**

Supplemental Benefit Rate per Hour: **\$21.66**

Effective Period: 6/25/2014 - 6/30/2014

Wage Rate per Hour: **\$45.32**

Supplemental Benefit Rate per Hour: **\$21.66**

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.

Shift Rates

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

Time and one half the regular rate outside the regular work hours (8:00 A.M. through 3:30 P.M.)

(Local #1974)

TELECOMMUNICATION WORKER
(Voice Installation Only)

Telecommunication Worker

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: **\$35.94**

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

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

Shift Rates

For any workday that starts before 8A.M. or ends after 6P.M. there is a 10% differential for the applicable worker's hourly rate.

Vacation

After 6 months.....one week.
After 12 months but less than 7 years.....two weeks.
After 7 or more but less than 15 years.....three weeks.
After 15 years or more but less than 25 years.....four weeks.

(C.W.A.)

TILE FINISHER

Tile Finisher

Effective Period: 7/1/2013 – 1/19/2014

Wage Rate per Hour: \$38.49

Supplemental Benefit Rate per Hour: \$27.40

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$38.80

Supplemental Benefit Rate per Hour: \$28.03

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.

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

(Local #7)

TILE LAYER - SETTER

Tile Layer - Setter

Effective Period: 7/1/2013 – 1/19/2014

Wage Rate per Hour: \$48.35

Supplemental Benefit Rate per Hour: \$31.44

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$49.25

Supplemental Benefit Rate per Hour: \$31.82

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)

TIMBERPERSON

Timberperson

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$42.63

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

Supplemental Benefit Rate per Hour: \$44.54

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)

TUNNEL WORKER

Blasters, Mucking Machine Operators (Compressed Air Rates)

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$54.20

Supplemental Benefit Rate per Hour: \$48.20

Tunnel Workers (Compressed Air Rates)

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$52.31

Supplemental Benefit Rate per Hour: \$46.59

Top Nipper (Compressed Air Rates)

Effective Period: 7/1/2013 - 6/30/2014

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

Wage Rate per Hour: \$51.35
Supplemental Benefit Rate per Hour: \$45.78

Outside Lock Tender, Outside Gauge Tender, Muck Lock Tender (Compressed Air Rates)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$50.42
Supplemental Benefit Rate per Hour: \$44.91

Bottom Bell & Top Bell Signal Person: Shaft Person (Compressed Air Rates)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$50.42
Supplemental Benefit Rate per Hour: \$44.92

Changehouse Attendant: Powder Watchperson (Compressed Air Rates)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$43.94
Supplemental Benefit Rate per Hour: \$42.55

Blasters (Free Air Rates)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$51.72
Supplemental Benefit Rate per Hour: \$46.03

Tunnel Workers (Free Air Rates)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$49.48
Supplemental Benefit Rate per Hour: \$44.06

All Others (Free Air Rates)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$45.73
Supplemental Benefit Rate per Hour: \$40.75

Microtunneling (Free Air Rates)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$39.58
Supplemental Benefit Rate per Hour: \$35.25

Overtime Description

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.

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

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)

WELDER

**TO BE PAID AT THE RATE OF THE JOURNEYPERSON IN THE TRADE
PERFORMING THE WORK.**

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.

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

APPRENTICESHIP SCHEDULE OF PREVAILING WAGES AND SUPPLEMENTAL BENEFITS
ADDENDUM

EFFECTIVE PERIOD JANUARY 20, 2014 THROUGH JUNE 30, 2014

List of Amended Classifications

1. ASBESTOS HANDLER
2. BRICKLAYER
3. FLOOR COVERER
4. HOUSE WRECKER
5. IRONWORKER – ORNAMENTAL
6. IRON WORKER - STRUCTURAL
7. MASON TENDER
8. PLASTERER
9. PLUMBER

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

ASBESTOS HANDLER

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

Asbestos Handler (First 1000 Hours)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 78% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$15.05
Effective 1/20/2014 – Supplemental Benefits Per Hour: 15.45

Asbestos Handler (Second 1000 Hours)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$15.05
Effective 1/20/2014 – Supplemental Benefits Per Hour: 15.45

Asbestos Handler (Third 1000 Hours)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 83% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$15.05
Effective 1/20/2014 – Supplemental Benefits Per Hour: 15.45

Asbestos Handler (Fourth 1000 Hours)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 89% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$15.05
Effective 1/20/2014 – Supplemental Benefits Per Hour: 15.45

(Local #78)

BOILERMAKER

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

Boilermaker (First Year)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$28.75

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate Per Hour: 65% of Journeyperson's rate

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

Supplemental Benefit Rate Per Hour: \$29.74

Boilermaker (Second Year: 1st Six Months)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate Per Hour: 70% of Journey person's rate
Supplemental Benefit Rate Per Hour: \$30.33

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate Per Hour: 75% of Journey person's rate
Supplemental Benefit Rate Per Hour: \$31.40

Boilermaker (Second Year: 2nd Six Months)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate Per Hour: 75% of Journey person's rate
Supplemental Benefit Rate Per Hour: \$31.91

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate Per Hour: 75% of Journey person's rate
Supplemental Benefit Rate Per Hour: \$33.05

Boilermaker (Third Year: 1st Six Months)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate Per Hour: 80% of Journey person's rate
Supplemental Benefit Rate Per Hour: \$33.49

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate Per Hour: 80% of Journey person's rate
Supplemental Benefit Rate Per Hour: \$34.69

Boilermaker (Third Year: 2nd Six Months)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate Per Hour: 85% of Journey person's rate
Supplemental Benefit Rate Per Hour: \$35.05

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate Per Hour: 85% of Journey person's rate
Supplemental Benefit Rate Per Hour: \$36.34

Boilermaker (Fourth Year: 1st Six Months)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate Per Hour: 90% of Journey person's rate
Supplemental Benefit Rate Per Hour: \$36.63

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate Per Hour: 90% of Journey person's rate
Supplemental Benefit Rate Per Hour: \$38.00

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

Boilermaker (Fourth Year: 2nd Six Months)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate Per Hour: 95% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$38.19

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate Per Hour: 95% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$39.65

(Local #5)

BRICKLAYER

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

Bricklayer (First 750 Hours)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$16.60
Effective 1/20/2014 – Supplemental Benefits Per Hour: 17.10

Bricklayer (Second 750 Hours)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 60% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$16.60
Effective 1/20/2014 – Supplemental Benefits Per Hour: 17.10

Bricklayer (Third 750 Hours)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 70% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$16.60
Effective 1/20/2014 – Supplemental Benefits Per Hour: 17.10

Bricklayer (Fourth 750 Hours)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 80% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$16.60
Effective 1/20/2014 – Supplemental Benefits Per Hour: 17.10

Bricklayer (Fifth 750 Hours)

Effective Period: 7/1/2013 - 6/30/2014

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

Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$16.60
Effective 1/20/2014 – Supplemental Benefits Per Hour: 17.10

Bricklayer (Sixth 750 Hours)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 95% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$16.60
Effective 1/20/2014 – Supplemental Benefits Per Hour: 17.10

(Bricklayer District Council)

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

Carpenter (First Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$30.29

Carpenter (Second Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$30.29

Carpenter (Third Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$30.29

Carpenter (Fourth Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$30.29

(Carpenters District Council)

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

CEMENT MASON

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

Cement Mason (First Year)

Effective Period: 7/1/2013 - 6/30/2014

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

Cement Mason (Second Year)

Effective Period: 7/1/2013 - 6/30/2014

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

Cement Mason (Third Year)

Effective Period: 7/1/2013 - 6/30/2014

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

(Local #780)

CEMENT AND CONCRETE WORKER

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

Cement & Concrete Worker (0 - 500 hours)

Effective Period: 7/1/2013 - 6/30/2014

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

Supplemental Benefit Rate Per Hour: \$18.04

Cement & Concrete Worker (501 - 1000 hours)

Effective Period: 7/1/2013 - 6/30/2014

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

Supplemental Benefit Rate Per Hour: \$18.87

Cement & Concrete Worker (1001 - 2000 hours)

Effective Period: 7/1/2013 - 6/30/2014

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

Supplemental Benefit Rate Per Hour: \$24.25

Cement & Concrete Worker (2001 - 4000 hours)

Effective Period: 7/1/2013 - 6/30/2014

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

Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$25.07

(Cement Concrete Workers District Council)

DERRICKPERSON & RIGGER (STONE)
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Derrickperson & Rigger (stone) - First Year

Effective Period: 7/1/2013 - 6/30/2014
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: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

Derrickperson & Rigger (stone) - Second Year: 2nd Six Months

Effective Period: 7/1/2013 - 6/30/2014
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: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: 75% of Journeyperson's rate

(Local #197)

DOCKBUILDER/PILE DRIVER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Dockbuilder/Pile Driver (First Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 40% of Journeyperson's rate

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

Supplemental Benefit Rate Per Hour: \$30.29

Dockbuilder/Pile Driver (Second Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$30.29

Dockbuilder/Pile Driver (Third Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$30.29

Dockbuilder/Pile Driver (Fourth Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$30.29

(Carpenters District Council)

ELECTRICIAN

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

Electrician (First Term: 0-6 Months)

Effective period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$12.50
Supplemental Benefit Rate per Hour: \$10.86
Overtime Supplemental Rate per Hour: \$11.68

Effective period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$12.50
Supplemental Benefit Rate per Hour: \$11.10
Overtime Supplemental Rate per Hour: \$11.93

Electrician (First Term: 7-12 Months)

Effective period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$13.50
Supplemental Benefit Rate per Hour: \$11.37
Overtime Supplemental Rate per Hour: \$12.26

Effective period: 5/14/2014 - 6/30/2014

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

Wage Rate per Hour: \$13.50
Supplemental Benefit Rate per Hour: \$11.62
Overtime Supplemental Rate per Hour: \$12.51

Electrician (Second Term: 0-6 Months)

Effective period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$14.50
Supplemental Benefit Rate per Hour: \$11.88
Overtime Supplemental Rate per Hour: \$12.83

Effective period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$14.50
Supplemental Benefit Rate per Hour: \$12.13
Overtime Supplemental Rate per Hour: \$13.08

Electrician (Second Term: 7-12 Months)

Effective period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$15.50
Supplemental Benefit Rate per Hour: \$12.39
Overtime Supplemental Rate per Hour: \$13.41

Effective period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$15.50
Supplemental Benefit Rate per Hour: \$12.64
Overtime Supplemental Rate per Hour: \$13.66

Electrician (Third Term: 0-6 Months)

Effective period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$16.50
Supplemental Benefit Rate per Hour: \$12.90
Overtime Supplemental Rate per Hour: \$13.98

Effective period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$16.50
Supplemental Benefit Rate per Hour: \$13.15
Overtime Supplemental Rate per Hour: \$14.23

Electrician (Third Term: 7-12 Months)

Effective period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$17.50
Supplemental Benefit Rate per Hour: \$13.40
Overtime Supplemental Rate per Hour: \$14.56

Effective period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$17.50
Supplemental Benefit Rate per Hour: \$13.65

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

Overtime Supplemental Rate per Hour: \$14.81

Electrician (Fourth Term: 0-6 Months - Hired on or after 5/10/07)

Effective period: 7/1/2013 - 5/13/2014

Wage Rate per Hour: \$18.50

Supplemental Benefit Rate per Hour: \$13.91

Overtime Supplemental Rate per Hour: \$15.13

Effective period: 5/14/2014 - 6/30/2014

Wage Rate per Hour: \$18.50

Supplemental Benefit Rate per Hour: \$14.16

Overtime Supplemental Rate per Hour: \$15.38

Electrician (Fourth Term: 7-12 Months - Hired on or after 5/10/07)

Effective period: 7/1/2013 - 5/13/2014

Wage Rate per Hour: \$20.25

Supplemental Benefit Rate per Hour: \$14.80

Overtime Supplemental Rate per Hour: \$16.14

Effective period: 5/14/2014 - 6/30/2014

Wage Rate per Hour: \$20.50

Supplemental Benefit Rate per Hour: \$15.18

Overtime Supplemental Rate per Hour: \$16.53

Electrician (Fifth Term: 0-12 Months - Hired on or after 5/10/07)

Effective period: 7/1/2013 - 5/13/2014

Wage Rate per Hour: \$22.00

Supplemental Benefit Rate per Hour: \$17.30

Overtime Supplemental Rate per Hour: \$18.68

Effective period: 5/14/2014 - 6/30/2014

Wage Rate per Hour: \$22.50

Supplemental Benefit Rate per Hour: \$18.06

Overtime Supplemental Rate per Hour: \$19.47

Electrician (Fifth Term: 13-18 Months - Hired on or after 5/10/07)

Effective period: 7/1/2013 - 5/13/2014

Wage Rate per Hour: \$26.50

Supplemental Benefit Rate per Hour: \$19.56

Overtime Supplemental Rate per Hour: \$21.23

Effective period: 5/14/2014 - 6/30/2014

Wage Rate per Hour: \$27.00

Supplemental Benefit Rate per Hour: \$20.32

Overtime Supplemental Rate per Hour: \$22.01

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

Electrician (Fourth Term: 0-6 Months - Hired before 5/10/07)

Effective period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$22.10
Supplemental Benefit Rate per Hour: \$15.74
Overtime Supplemental Rate per Hour: \$17.20

Effective period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$22.10
Supplemental Benefit Rate per Hour: \$15.99
Overtime Supplemental Rate per Hour: \$17.45

Electrician (Fourth Term: 7-12 Months - Hired before 5/10/07)

Effective period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$23.95
Supplemental Benefit Rate per Hour: \$16.69
Overtime Supplemental Rate per Hour: \$18.26

Effective period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$24.20
Supplemental Benefit Rate per Hour: \$17.06
Overtime Supplemental Rate per Hour: \$18.66

Electrician (Fifth Term: 0-18 Months - Hired before 5/10/07)

Effective period: 7/1/2013 - 5/13/2014
Wage Rate per Hour: \$25.80
Supplemental Benefit Rate per Hour: \$19.21
Overtime Supplemental Rate per Hour: \$20.83

Effective period: 5/14/2014 - 6/30/2014
Wage Rate per Hour: \$26.30
Supplemental Benefit Rate per Hour: \$19.96
Overtime Supplemental Rate per Hour: \$21.61

Overtime Description

Overtime Wage paid at time and one half the regular rate
For "A" rated Apprentices (work in excess of 7 hours per day)
For "M" rated Apprentices (work in excess of 8 hours per day)

(Local #3)

ELEVATOR CONSTRUCTOR

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 2)

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

Elevator (Constructor) - First Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: \$26.87

Elevator (Constructor) - Second Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$27.92

Elevator (Constructor) - Third Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: \$29.38

Elevator (Constructor) - Fourth Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$30.84

(Local #1)

**ELEVATOR REPAIR & MAINTENANCE
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 2)**

Elevator Service/Modernization Mechanic (First Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Per Hour: \$26.79

Elevator Service/Modernization Mechanic (Second Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Benefit Per Hour: \$27.12

Elevator Service/Modernization Mechanic (Third Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 65% of Journeyperson's rate

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

Supplemental Benefit Per Hour: \$28.43

Elevator Service/Modernization Mechanic (Fourth Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Benefit Per Hour: \$29.74

(Local #1)

ENGINEER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 5)

Engineer - First Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$22.49
Supplemental Benefit Rate per Hour: \$20.68

Engineer - Second Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$28.11
Supplemental Benefit Rate per Hour: \$20.68

Engineer - Third Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$20.92
Supplemental Benefit Rate per Hour: \$20.68

Engineer - Fourth Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$33.73
Supplemental Benefit Rate per Hour: \$20.68

(Local #15)

ENGINEER - OPERATING
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 5)

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

Operating Engineer - First Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour 40% of Journeyman's Rate
Supplemental Benefit Per Hour: \$18.60

Operating Engineer - Second Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 50% of Journeyman's Rate
Supplemental Benefit Per Hour: \$18.60

Operating Engineer - Third Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 60% of Journeyman's Rate
Supplemental Benefit Per Hour: \$18.60

(Local #14)

FLOOR COVERER

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

Floor Coverer (First Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 40% of Journeyman's rate
Supplemental Rate Per Hour: \$25.75
Effective 1/20/2014 – Supplemental Benefits Per Hour: 29.55

Floor Coverer (Second Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Rate Per Hour: \$25.75
Effective 1/20/2014 – Supplemental Benefits Per Hour: 29.55

Floor Coverer (Third Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 65% of Journeyman's rate
Supplemental Rate Per Hour: \$25.75
Effective 1/20/2014 – Supplemental Benefits Per Hour: 29.55

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

Floor Coverer (Fourth Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: \$25.75
Effective 1/20/2014 – Supplemental Benefits Per Hour: 29.55

(Carpenters District Council)

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

Glazier (First Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: \$11.97

Glazier (Second Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: \$21.13

Glazier (Third Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: \$23.54

Glazier (Fourth Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: \$28.34

(Local #1281)

HEAT & FROST INSULATOR
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

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

Heat & Frost Insulator (First Year)

Effective Period: 7/1/2013 - 6/30/2014

Wage and Supplemental Rate Per Hour: 40% of Journeyman's rate

Heat & Frost Insulator (Second Year)

Effective Period: 7/1/2013 - 6/30/2014

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

Heat & Frost Insulator (Third Year)

Effective Period: 7/1/2013 - 6/30/2014

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

Heat & Frost Insulator (Fourth Year)

Effective Period: 7/1/2013 - 6/30/2014

Wage and Supplemental Rate Per Hour: 80% of Journeyman's rate

(Local #12)

**HOUSE WRECKER
(TOTAL DEMOLITION)
(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)**

House Wrecker - First Year

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$20.36

Supplemental Benefit Rate per Hour: \$16.35

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$20.52

Supplemental Benefit Rate per Hour: \$16.60

House Wrecker - Second Year

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$21.46

Supplemental Benefit Rate per Hour: \$16.35

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$21.67

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

Supplemental Benefit Rate per Hour: \$16.60

House Wrecker - Third Year

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$23.01

Supplemental Benefit Rate per Hour: \$16.35

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$23.27

Supplemental Benefit Rate per Hour: \$16.60

House Wrecker - Fourth Year

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$25.36

Supplemental Benefit Rate per Hour: \$16.35

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$25.83

Supplemental Benefit Rate per Hour: \$16.60

(Local #79)

IRON WORKER - ORNAMENTAL

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

Iron Worker (Ornamental) - 1st Four Months - Hired on or Before 8/1/08

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate Per Hour: 60% of Journeyperson's rate

Supplemental Rate Per Hour: \$35.78

Iron Worker (Ornamental) 5 - 10 Months - Hired on or Before 8/1/08

Effective Period: 7/1/2013 - 6/30/2014

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

Supplemental Rate Per Hour: \$36.75

Iron Worker (Ornamental) 11 - 16 Months - Hired on or Before 8/1/08

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate Per Hour: 70% of Journeyperson's rate

Supplemental Rate Per Hour: \$37.72

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

Iron Worker (Ornamental) 17 - 22 Months - Hired on or Before 8/1/08

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: \$39.66

Iron Worker (Ornamental) 23 - 28 Months - Hired on or Before 8/1/08

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 85% of Journeyperson's rate
Supplemental Rate Per Hour: \$40.63

Iron Worker (Ornamental) 29 - 36 Months - Hired on or Before 8/1/08

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 95% of Journeyperson's rate
Supplemental Rate Per Hour: \$42.57

Iron Worker (Ornamental) - 1st Ten Months - Hired After 8/1/08

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: \$33.84
Effective 1/20/2014 – Supplemental Benefits Per Hour: 34.55

Iron Worker (Ornamental) - 11 - 16 Months - Hired After 8/1/08

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$34.81
Effective 1/20/2014 – Supplemental Benefits Per Hour: 35.55

Iron Worker (Ornamental) - 17 - 22 Months - Hired After 8/1/08

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: \$35.78
Effective 1/20/2014 – Supplemental Benefits Per Hour: 36.55

Iron Worker (Ornamental) - 23 - 28 Months - Hired After 8/1/08

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$37.72
Effective 1/20/2014 – Supplemental Benefits Per Hour: 38.56

Iron Worker (Ornamental) - 29 - 36 Months - Hired After 8/1/08

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: \$39.66

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

Effective 1/20/2014 – Supplemental Benefits Per Hour: 40.56

(Local #580)

IRON WORKER - STRUCTURAL
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Iron Worker (Structural) - 1st Six Months

Effective Period: 7/1/2013 – 1/19/2014
Wage Rate per Hour: \$24.48
Supplemental Benefit Rate per Hour: \$43.87

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: \$24.73
Supplemental Benefit Rate per Hour: \$45.07

Iron Worker (Structural) - 7- 18 Months

Effective Period: 7/1/2013 – 1/19/2014
Wage Rate per Hour: \$25.08
Supplemental Benefit Rate per Hour: \$43.87

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: \$25.33
Supplemental Benefit Rate per Hour: \$45.07

Iron Worker (Structural) - 19 - 36 months

Effective Period: 7/1/2013 – 1/19/2014
Wage Rate per Hour: \$25.68
Supplemental Benefit Rate per Hour: \$43.87

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: \$25.93
Supplemental Benefit Rate per Hour: \$45.07

(Local #40 and #361)

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

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: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Rate Per Hour: \$33.25

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Second 1000 hours

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 60% of Journeyman's rate
Supplemental Rate Per Hour: \$33.25

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Third 1000 hours

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 75% of Journeyman's rate
Supplemental Rate Per Hour: \$33.25

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Fourth 1000 hours

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 90% of Journeyman's rate
Supplemental Rate Per Hour: \$33.25

(Local #731)

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

Cutters & Setters - First 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 50% of Journeyman's rate

NO BENEFITS PAID DURING THE FIRST TWO MONTHS (PROBATIONARY PERIOD)

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

Cutters & Setters - Second 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 55% of Journeyperson's rate

Cutters & Setters - Third 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 65% of Journeyperson's rate

Cutters & Setters - Fourth 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Cutters & Setters - Fifth 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 85% of Journeyperson's rate

Cutters & Setters - Sixth 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 95% of Journeyperson's rate

Polishers & Finishers - First 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
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: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Polishers & Finishers - Third 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Polishers & Finishers - Fourth 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 90% of Journeyperson's rate

(Local #7)

MASON TENDER

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

Mason Tender - First Year

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$20.63

Supplemental Benefit Rate per Hour: \$17.06

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$20.79

Supplemental Benefit Rate per Hour: \$17.58

Mason Tender - Second Year

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$21.73

Supplemental Benefit Rate per Hour: \$17.06

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$21.94

Supplemental Benefit Rate per Hour: \$17.58

Mason Tender - Third Year

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$23.33

Supplemental Benefit Rate per Hour: \$17.06

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$23.59

Supplemental Benefit Rate per Hour: \$17.58

Mason Tender - Fourth Year

Effective Period: 7/1/2013 - 1/19/2014

Wage Rate per Hour: \$25.93

Supplemental Benefit Rate per Hour: \$17.06

Effective Period: 1/20/2014 - 6/30/2014

Wage Rate per Hour: \$26.25

Supplemental Benefit Rate per Hour: \$17.58

(Local #79)

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

Metallic Lather (First Year -Called Prior to 6/29/11)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$28.11
Supplemental Benefit Rate per Hour: \$22.79

Metallic Lather (Second Year - Called Prior to 6/29/11)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$32.71
Supplemental Benefit Rate per Hour: \$24.44

Metallic Lather (Third Year - Called Prior to 6/29/11)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$37.77
Supplemental Benefit Rate per Hour: \$25.59

Metallic Lather (First Year -Called On Or After 6/29/11)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$17.71
Supplemental Benefit Rate per Hour: \$19.85

Metallic Lather (Second Year - Called On Or After 6/29/11)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$22.81
Supplemental Benefit Rate per Hour: \$19.85

Metallic Lather (Third Year - Called On Or After 6/29/11)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$27.91
Supplemental Benefit Rate per Hour: \$19.85

(Local #46)

MILLWRIGHT

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

Millwright (First Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$26.23
Supplemental Benefit Rate per Hour: \$31.51

Millwright (Second Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$31.00
Supplemental Benefit Rate per Hour: \$34.77

Millwright (Third Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$35.77
Supplemental Benefit Rate per Hour: \$39.19

Millwright (Fourth Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$45.30
Supplemental Benefit Rate per Hour: \$44.63

(Local #740)

PAVER AND ROADBUILDER

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

Paver and Roadbuilder - First Year (Minimum 1000 hours)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$26.19
Supplemental Benefit Rate per Hour: \$16.20

Paver and Roadbuilder - Second Year (Minimum 1000 hours)

Effective Period: 7/1/2013 - 6/30/2014

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

Wage Rate per Hour: \$27.77
Supplemental Benefit Rate per Hour: \$16.20

(Local #1010)

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

Painter - Brush & Roller - First Year

Effective Period: 7/1/2013 - 4/30/2014
Wage Rate per Hour: \$15.00
Supplemental Benefit Rate per Hour: \$11.38

Effective Period: 5/1/2014 - 6/30/2014
Wage Rate per Hour: \$15.80
Supplemental Benefit Rate per Hour: \$11.88

Painter - Brush & Roller - Second Year

Effective Period: 7/1/2013 - 4/30/2014
Wage Rate per Hour: \$18.75
Supplemental Benefit Rate per Hour: \$15.23

Effective Period: 5/1/2014 - 6/30/2014
Wage Rate per Hour: \$19.75
Supplemental Benefit Rate per Hour: \$15.73

Painter - Brush & Roller - Third Year

Effective Period: 7/1/2013 - 4/30/2014
Wage Rate per Hour: \$22.50
Supplemental Benefit Rate per Hour: \$18.14

Effective Period: 5/1/2014 - 6/30/2014
Wage Rate per Hour: \$23.70
Supplemental Benefit Rate per Hour: \$18.64

Painter - Brush & Roller - Fourth Year

Effective Period: 7/1/2013 - 4/30/2014
Wage Rate per Hour: \$30.00
Supplemental Benefit Rate per Hour: \$23.52

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

Effective Period: 5/1/2014 - 6/30/2014
Wage Rate per Hour: \$31.60
Supplemental Benefit Rate per Hour: \$24.02

(District Council of Painters)

PAINTER - STRUCTURAL STEEL
(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 3)

Painters - Structural Steel (First Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 40% of Journeyman's rate

Painters - Structural Steel (Second Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 60% of Journeyman's rate

Painters - Structural Steel (Third Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 80% of Journeyman's rate

(Local #806)

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

Plasterer - First Year: 1st Six Months

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 40% of Journeyman's rate
Supplemental Rate Per Hour: \$12.76
Effective 1/20/2014 – Supplemental Benefits Per Hour: 15.76

Plasterer - First Year: 2nd Six Months

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 45% of Journeyman's rate
Supplemental Rate Per Hour: \$13.24

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

Effective 1/20/2014 – Supplemental Benefits Per Hour: 16.24

Plasterer - Second Year: 1st Six Months

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$15.21
Effective 1/20/2014 – Supplemental Benefits Per Hour: 18.21

Plasterer - Second Year: 2nd Six Months

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: \$16.29
Effective 1/20/2014 – Supplemental Benefits Per Hour: 19.29

Plasterer - Third Year: 1st Six Months

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$18.46
Effective 1/20/2014 – Supplemental Benefits Per Hour: 21.46

Plasterer - Third Year: 2nd Six Months

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$19.54
Effective 1/20/2014 – Supplemental Benefits Per Hour: 22.54

(Local #530)

PLUMBER

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

Plumber - First Year: 1st Six Months

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$14.00
Supplemental Benefit Rate per Hour: \$0.71

Plumber - First Year: 2nd Six Months

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$14.00
Supplemental Benefit Rate per Hour: \$2.96

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

Plumber - Second Year

Effective Period: 7/1/2013 - 1/19/2014
Wage Rate per Hour: \$18.26
Supplemental Benefit Rate per Hour: \$16.32

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: \$23.67
Supplemental Benefit Rate per Hour: \$11.16

Plumber - Third Year

Effective Period: 7/1/2013 - 1/19/2014
Wage Rate per Hour: \$20.36
Supplemental Benefit Rate per Hour: \$16.32

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: \$25.77
Supplemental Benefit Rate per Hour: \$11.16

Plumber - Fourth Year

Effective Period: 7/1/2013 - 1/19/2014
Wage Rate per Hour: \$23.21
Supplemental Benefit Rate per Hour: \$16.32

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: \$28.62
Supplemental Benefit Rate per Hour: \$11.16

Plumber - Fifth Year: 1st Six Months

Effective Period: 7/1/2013 - 1/19/2014
Wage Rate per Hour: \$24.61
Supplemental Benefit Rate per Hour: \$16.32

Effective Period: 1/20/2014 - 6/30/2014
Wage Rate per Hour: \$30.02
Supplemental Benefit Rate per Hour: \$11.16

Plumber - Fifth Year: 2nd Six Months

Effective Period: 7/1/2013 - 1/19/2014
Wage Rate per Hour: \$36.68
Supplemental Benefit Rate per Hour: \$16.32

Effective Period: 1/20/2014 - 6/30/2014

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

Wage Rate per Hour: \$42.09
Supplemental Benefit Rate per Hour: \$11.16

(Plumbers Local #1)

**POINTER - WATERPROOFER, CAULKER MECHANIC (EXTERIOR BUILDING
RENOVATION)**

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

Pointer - Waterproofer, Caulker Mechanic - First Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$25.00
Supplemental Benefit Rate per Hour: \$3.64

Pointer - Waterproofer, Caulker Mechanic - Second Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$27.25
Supplemental Benefit Rate per Hour: \$8.59

Pointer - Waterproofer, Caulker Mechanic - Third Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$32.23
Supplemental Benefit Rate per Hour: \$11.34

Pointer - Waterproofer, Caulker Mechanic - Fourth Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$38.66
Supplemental Benefit Rate per Hour: \$11.34

(Bricklayer District Council)

ROOFER

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 2)

Roofer - First Year

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

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 35% of Journeyperson's Rate

Roofer - Second Year

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's Rate

Roofer - Third Year

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's Rate

Roofer - Fourth Year

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 75% of Journeyperson's Rate

(Local #8)

SHEET METAL WORKER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Sheet Metal Worker - First Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 30% of Journeyperson's rate
Supplemental Rate Per Hour: \$15.37

Sheet Metal Worker - Second Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 35% of Journeyperson's rate
Supplemental Rate Per Hour: \$18.24

Sheet Metal Worker - Third Year (1st Six Months)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: \$20.06

Sheet Metal Worker - Third Year (2nd Six Months)

Effective Period: 7/1/2013 - 6/30/2014

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

Wage Rate Per Hour: 45% of Journeyperson's rate
Supplemental Rate Per Hour: \$21.87

Sheet Metal Worker - Fourth Year (1st Six Months)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: \$23.69

Sheet Metal Worker - Fourth Year (2nd Six Months)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$25.33

Sheet Metal Worker - Fifth Year (1st Six Months)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: \$27.47

Sheet Metal Worker - Fifth Year (2nd Six Months)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$31.23

(Local #28)

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

Sign Erector - First Year: 1st Six Months

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 35% of Journeyperson's rate
Supplemental Rate Per Hour: \$5.96

Sign Erector - First Year: 2nd Six Months

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: \$6.75

Sign Erector - Second Year: 1st Six Months

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

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 45% of Journeyperson's rate
Supplemental Rate Per Hour: \$7.55

Sign Erector - Second Year: 2nd Six Months

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: \$8.34

Sign Erector - Third Year: 1st Six Months

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$9.13

Sign Erector - Third Year: 2nd Six Months

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: \$9.92

Sign Erector - Fourth Year: 1st Six Months

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: \$10.72

Sign Erector - Fourth Year: 2nd Six Months

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$11.51

Sign Erector - Fifth Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$12.30

Sign Erector - Sixth Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: \$12.30

(Local #137)

STEAMFITTER

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

Steamfitter - First Year

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate and Supplemental Per Hour: 40% of Journeyman's rate

Steamfitter - Second Year

Effective Period: 7/1/2013 - 6/30/2014

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

Steamfitter - Third Year

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate and Supplemental Rate per Hour: 65% of Journeyman's rate.

Steamfitter - Fourth Year

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate and Supplemental Rate Per Hour: 80% of Journeyman's rate.

Steamfitter - Fifth Year

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate and Supplemental Rate Per Hour: 85% of Journeyman's rate.

(Local #638)

STONE MASON - SETTER

(Ratio Apprentice of Journeyman: 1 to 1, 1 to 2)

Stone Mason - Setters - First 750 Hours

Effective Period: 7/1/2013 - 6/30/2014

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

Stone Mason - Setters - Second 750 Hours

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate Per Hour: 60% of Journeyman's rate

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

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

Stone Mason - Setters - Third 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
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: 7/1/2013 - 6/30/2014
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: 7/1/2013 - 6/30/2014
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: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 100% of Journeyman's rate
Supplemental Rate Per Hour: 50% of Journeyman's rate

(Bricklayers District Council)

TAPER

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

Drywall Taper - First Year

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 40% of Journeyman's rate

Drywall Taper - Second Year

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 60% of Journeyman's rate

Drywall Taper - Third Year

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 80% of Journeyman's rate

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

(Local #1974)

TILE LAYER - SETTER
(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)

Tile Layer - Setter - First 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 50% of Journeyman's rate

Tile Layer - Setter - Second 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 55% of Journeyman's rate

Tile Layer - Setter - Third 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 65% of Journeyman's rate

Tile Layer - Setter - Fourth 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 75% of Journeyman's rate

Tile Layer - Setter - Fifth 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 85% of Journeyman's rate

Tile Layer - Setter - Sixth 750 Hours

Effective Period: 7/1/2013 - 6/30/2014
Wage and Supplemental Rate Per Hour: 95% of Journeyman's rate

(Local #7)

TIMBERPERSON
(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 6)

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Timberperson - First Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: \$30.04

Timberperson - Second Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: \$30.04

Timberperson - Third Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: \$30.04

Timberperson - Fourth Year

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: \$30.04

(Local #1536)

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

LABOR LAW § 230 PREVAILING WAGE SCHEDULE

Building service employees on public contracts must receive not less than the prevailing rate of wage and supplements for the classification of work performed. In accordance with Labor Law §230 et seq. the Comptroller of the City of New York has promulgated this schedule of prevailing wages and supplemental benefits for building service employees engaged on New York City public building service contracts in excess of \$1,500.00. Prevailing rates are required to be annexed to and form part of the contract pursuant to §231 (4).

Contracting agencies that anticipate doing work that may require building service trades or classifications not included in this schedule may request the Comptroller to establish a proper classification and wage determination for the work. Contractors using trades and/or classifications for which the Comptroller has not promulgated wages and benefits do so at their own risk.

Contractors are advised to review the applicable Comptroller's Prevailing Wage Schedule before bidding on public work. Any Prevailing Wage Rate error made by the Contracting Agency, whether in a contract document or other communication, will not preclude a finding against the contractor of a prevailing-wage violation.

Labor Law § 231 (6) requires contractors to post on the site of the work a current copy of this schedule of wages and supplements.

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. Contractors must pay the wages and supplements in effect when the building service employee 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.

Contractors are solely responsible for maintaining original payroll records delineating, among other things, the hours worked by each employee within a given classification.

Some of the rates in this schedule are based on collective bargaining agreements. 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.

Answers to questions concerning prevailing trade practices may be obtained from the Classification Unit by calling (212) 669-7974. Please direct all other compliance issues to: Bureau of Labor Law, Attn: Wasył Kinach, P.E., Office of the Comptroller, 1 Centre Street, Room 1122, New York, N.Y. 10007; Fax (212) 669-4002.

In order to meet their obligation to provide prevailing supplemental benefits to each covered employee, employers must either:

- 1) Provide bona-fide benefits which cost the employer no less than the prevailing supplemental benefits rate; or

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

- 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 benefits and wage supplements which cost the employer no less than the prevailing supplemental benefits rate in total.

Benefits are paid for **EACH HOUR WORKED** unless otherwise noted.

If you are a Covered Building Service Employee and you have been paid less than the Prevailing Wage and Benefits, please contact us at 212-669-4443 or download our complaint form from our website at WWW.COMPTROLLER.NYC.GOV (click on the Bureau of Labor Law).

Si es un empleado de servicios a edificios elegible y recibió menos del sueldo prevalente y beneficios, por favor contáctenos en 212-669-4443 o descarga un formulario de reclamo del sitio del Internet WWW.COMPTROLLER.NYC.GOV (oprime "Oficina de Derecho Laboral").

Wasył Kinach, P.E.
Director of Classifications
Bureau of Labor Law

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

230 SCHEDULE OF PREVAILING WAGES AND SUPPLEMENTAL BENEFITS ADDENDUM
EFFECTIVE PERIOD JANUARY 20, 2014 THROUGH JUNE 30, 2014

List of Amended Classifications

1. BUILDING CLEANER AND MAINTAINER (OFFICE)
2. BUILDING CLEANER AND MAINTAINER (RESIDENTIAL)
3. BUILDING HVAC SERVICES OPERATOR
4. WINDOW CLEANER

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

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BOILER SERVICEPERSON/TANK CLEANER MECHANIC (LOW PRESSURE)

Boiler Service Person/Tank Cleaner Mechanic (Low Pressure)

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$11.37

Supplemental Benefit Rate per Hour: \$5.57

Overtime Description

Work in excess of 8 hours performed on a Sunday or Holiday shall be paid two and one half times the regular 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.

Double time the regular rate for work on the following holiday(s).

Paid Holidays

- New Year's Day
- Martin Luther King Jr. Day
- President's Day
- Good Friday
- Memorial Day
- Independence Day
- Labor Day
- Columbus Day
- Thanksgiving Day
- Day after Thanksgiving
- Christmas Day
- Employee's Birthday

Vacation

- 1 year service.....five (5) days
- 3 years service or more.....ten (10) days
- 8 years service or more.....fifteen (15) days
- 13 years service or more.....twenty (20) days

SICK LEAVE:

- 1-2 years employment.....4 days
- 2-3 years employment.....5 days
- 3-4 years employment.....6 days
- 4-5 years employment.....8 days
- 6 years or more employment.....10 days

(Local #32 B/J)

BUILDING CLEANER AND MAINTAINER (OFFICE)

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
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Office Building Class "A" Handyperson (Over 280,000 square feet gross area)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate per Hour: \$25.10
Supplemental Benefit Rate per Hour: \$9.51

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate per Hour: \$25.55
Supplemental Benefit Rate per Hour: \$9.91
Supplemental Note: for new employee 0-3 months of employment - \$0.00

Office Building Class "A" Foreperson, Starter (Over 280,000 square feet gross area)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate per Hour: \$24.99
Supplemental Benefit Rate per Hour: \$9.51

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate per Hour: \$25.44
Supplemental Benefit Rate per Hour: \$9.91
Supplemental Note: for new employee 0-3 months of employment - \$0.00

Office Building Class "A" Cleaner/Porter, Elevator Operator, Exterminator, Fire Safety Director (Over 280,000 square feet gross area)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate per Hour: \$22.97
Supplemental Benefit Rate per Hour: \$9.51
Supplemental Note: for new employee 0-12 months of employment - \$6.92; for new employee 13-24 months of employment - \$9.18

NEW HIRE: Cleaner/Porter, Elevator Operator, Exterminator, Fire Safety Director may be paid 75% of the wage rate above for the first 21 months of employment, 85% of the wage rate above for the 22nd through 42nd months of employment, and upon the completion of 42 months of employment employee shall be paid the full wage rate. Note: New Hires hired before January 1, 2012 will continue to receive 80% of the wage rate above for the first 30 months, and upon the completion of 30 months of employment employee shall be paid the full wage rate. Upon completion of two years of employment the new hire receives the full supplemental benefit rate.

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate per Hour: \$23.42
Supplemental Benefit Rate per Hour: \$9.91
Supplemental Note: for new employee 0-3 months of employment - \$0.00; for new employee 4-12 months of employment - \$7.22; for new employee 13-24 months of employment - \$9.58

NEW HIRE: Cleaner/Porter, Elevator Operator, Exterminator, Fire Safety Director may be paid 75% of the wage rate above for the first 21 months of employment, 85% of the wage rate above for the 22nd through 42nd months of employment, and upon the completion of 42 months of employment employee shall be paid the full wage rate. Note: New Hires hired before January 1, 2012 will continue to receive 80% of the wage rate above for the first 30 months, and upon the completion of 30 months of employment employee shall be paid the full wage rate. Upon completion of two years of employment the new hire receives the full supplemental benefit rate.

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

Office Building Class "B" Handyperson (Over 120,000 and less than 280,000 square feet gross area)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate per Hour: \$25.07
Supplemental Benefit Rate per Hour: \$9.51

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate per Hour: \$25.52
Supplemental Benefit Rate per Hour: \$9.91
Supplemental Note: for new employee 0-3 months of employment - \$0.00

Office Building Class "B" Foreperson, Starter (Over 120,000 and less than 280,000 square feet gross area)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate per Hour: \$24.95
Supplemental Benefit Rate per Hour: \$9.51

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate per Hour: \$25.40
Supplemental Benefit Rate per Hour: \$9.91
Supplemental Note: for new employee 0-3 months of employment - \$0.00

Office Building Class "B" Cleaner/Porter, Elevator Operator, Exterminator, Fire Safety Director (Over 120,000 and less than 280,000 square feet gross area)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate per Hour: \$22.94
Supplemental Benefit Rate per Hour: \$9.51
Supplemental Note: for new employee 0-12 months of employment - \$6.92; for new employee 13-24 months of employment - \$9.18

NEW HIRE: Cleaner/Porter, Elevator Operator, Exterminator, Fire Safety Director may be paid 75% of the wage rate above for the first 21 months of employment, 85% of the wage rate above for the 22nd through 42nd months of employment, and upon the completion of 42 months of employment employee shall be paid the full wage rate. Note: New Hires hired before January 1, 2012 will continue to receive 80% of the wage rate above for the first 30 months, and upon the completion of 30 months of employment employee shall be paid the full wage rate. Upon completion of two years of employment the new hire receives the full supplemental benefit rate.

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate per Hour: \$23.39
Supplemental Benefit Rate per Hour: \$9.91
Supplemental Note: for new employee 0-3 months of employment - \$0.00; for new employee 4-12 months of employment - \$7.22; for new employee 13-24 months of employment - \$9.58

NEW HIRE: Cleaner/Porter, Elevator Operator, Exterminator, Fire Safety Director may be paid 75% of the wage rate above for the first 21 months of employment, 85% of the wage rate above for the 22nd through 42nd months of employment, and upon the completion of 42 months of employment employee shall be paid the full wage rate.

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§230 PREVAILING WAGE SCHEDULE

Note: New Hires hired before January 1, 2012 will continue to receive 80% of the wage rate above for the first 30 months, and upon the completion of 30 months of employment employee shall be paid the full wage rate. Upon completion of two years of employment the new hire receives the full supplemental benefit rate.

Office Building Class "C" Handyperson (Less than 120,000 square feet gross area)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate per Hour: \$25.02
Supplemental Benefit Rate per Hour: \$9.51

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate per Hour: \$25.47
Supplemental Benefit Rate per Hour: \$9.91
Supplemental Note: for new employee 0-3 months of employment - \$0.00

Office Building Class "C" Foreperson, Starter (Less than 120,000 square feet gross area)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate per Hour: \$24.91
Supplemental Benefit Rate per Hour: \$9.51

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate per Hour: \$25.36
Supplemental Benefit Rate per Hour: \$9.91
Supplemental Note: for new employee 0-3 months of employment - \$0.00

Office Building Class "C" Cleaner/Porter, Elevator Operator, Exterminator, Fire Safety Director (Less than 120,000 square feet gross area)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate per Hour: \$22.90
Supplemental Benefit Rate per Hour: \$9.51
Supplemental Note: for new employee 0-12 months of employment - \$6.92; for new employee 13-24 months of employment - \$9.18

NEW HIRE: Cleaner/Porter, Elevator Operator, Exterminator, Fire Safety Director may be paid 75% of the wage rate above for the first 21 months of employment, 85% of the wage rate above for the 22nd through 42nd months of employment, and upon the completion of 42 months of employment employee shall be paid the full wage rate.
Note: New Hires hired before January 1, 2012 will continue to receive 80% of the wage rate above for the first 30 months, and upon the completion of 30 months of employment employee shall be paid the full wage rate. Upon completion of two years of employment the new hire receives the full supplemental benefit rate.

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate per Hour: \$23.35
Supplemental Benefit Rate per Hour: \$9.91
Supplemental Note: for new employee 0-3 months of employment - \$0.00; for new employee 4-12 months of employment - \$7.22; for new employee 13-24 months of employment - \$9.58

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
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NEW HIRE: Cleaner/Porter, Elevator Operator, Exterminator, Fire Safety Director may be paid 75% of the wage rate above for the first 21 months of employment, 85% of the wage rate above for the 22nd through 42nd months of employment, and upon the completion of 42 months of employment employee shall be paid the full wage rate. Note: New Hires hired before January 1, 2012 will continue to receive 80% of the wage rate above for the first 30 months, and upon the completion of 30 months of employment employee shall be paid the full wage rate. Upon completion of two years of employment the new hire receives the full supplemental benefit rate.

Months of employment shall be defined as an Employee's length of service with the Employer or at the Facility, whichever is greater.

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for work on a holiday plus the day's pay.
Time and one half the regular hourly rate after 40 hours in any work week.

Paid Holidays

New Year's Day
President's Day
Good Friday
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

Vacation

Less than 6 months of work.....no vacation
6 months of work.....three (3) days
1 year of work.....ten (10) days
5 years of work.....fifteen (15) days
15 years of work.....twenty (20) days
21 years of work.....twenty-one (21) days
22 years of work.....twenty-two (22) days
23 years of work.....twenty-three (23) days
24 years of work.....twenty-four (24) days
25 years or more of work.....twenty-five (25) days
Plus two Personal Days per year.

Sick Leave:

10 sick days per year.
Unused sick leave paid in the succeeding January, one full day pay for each unused sick day.

(Local #32 B/J)

BUILDING CLEANER AND MAINTAINER (RESIDENTIAL)

Residential Building Class "A" Handyperson

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
\$230 PREVAILING WAGE SCHEDULE

Residential Buildings Class "A": buildings where the assessed value of the land and building, based upon the 1935 assessment, divided by the number of rooms in the building, gives an assessed value of over \$4000.00 a room.

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$23.57

Supplemental Benefit Rate per Hour: \$9.43

Supplemental Note: Effective 1/1/2014 - \$9.83, for new employee 0-3 months of employment - \$0.00

Residential Building Class "A" Cleaner/Porter

Residential Buildings Class "A": buildings where the assessed value of the land and building, based upon the 1935 assessment, divided by the number of rooms in the building, gives an assessed value of over \$4000.00 a room.

Effective Period: 7/1/2013 - 12/31/2013

Wage Rate per Hour: \$21.34

Supplemental Benefit Rate per Hour: \$9.43

Supplemental Note: for new employee 0-12 months of employment - \$6.92; for new employee 13-24 months of employment - \$9.18

NEW HIRE: Porter/Cleaner, may be paid a starting rate of 80% of the hourly rate published above. Upon completion of 30 months of employment, the new hire shall be paid the full wage rate. Upon completion of two years of employment the new hire receives the full supplemental benefit rate.

Effective Period: 1/1/2014 - 6/30/2014

Wage Rate per Hour: \$21.34

Supplemental Benefit Rate per Hour: \$9.83

Supplemental Note: for new employee 0-3 months of employment - \$0.00; for new employee 4-12 months of employment - \$7.22; for new employee 13-24 months of employment - \$9.58

NEW HIRE: Porter/Cleaner, may be paid a starting rate of 80% of the hourly rate published above. Upon completion of 30 months of employment, the new hire shall be paid the full wage rate. Upon completion of two years of employment the new hire receives the full supplemental benefit rate.

Residential Building Class "B" Handyperson

Residential Building Class "B": buildings where the assessed value of the land and building, based upon the 1935 assessment, divided by the number of rooms in the building, gives an assessed value of over \$2000.00 a room and not over \$4000.00 a room.

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$23.51

Supplemental Benefit Rate per Hour: \$9.43

Supplemental Note: Effective 1/1/2014 - \$9.83, for new employee 0-3 months of employment - \$0.00

Residential Building Class "B" Cleaner/Porter

Residential Building Class "B": buildings where the assessed value of the land and building, based upon the 1935 assessment, divided by the number of rooms in the building, gives an assessed value of over \$2000.00 a room and not over \$4000.00 a room.

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

Effective Period: 7/1/2013 - 12/31/2013

Wage Rate per Hour: \$21.28

Supplemental Benefit Rate per Hour: \$9.43

Supplemental Note: for new employee 0-12 months of employment - \$6.92; for new employee 13-24 months of employment - \$9.18

NEW HIRE: Porter/Cleaner, may be paid a starting rate of 80% of the hourly rate published above. Upon completion of 30 months of employment, the new hire shall be paid the full wage rate. Upon completion of two years of employment the new hire receives the full supplemental benefit rate.

Effective Period: 1/1/2014 - 6/30/2014

Wage Rate per Hour: \$21.28

Supplemental Benefit Rate per Hour: \$9.83

Supplemental Note: for new employee 0-3 months of employment - \$0.00; for new employee 4-12 months of employment - \$7.22; for new employee 13-24 months of employment - \$9.58

NEW HIRE: Porter/Cleaner, may be paid a starting rate of 80% of the hourly rate published above. Upon completion of 30 months of employment, the new hire shall be paid the full wage rate. Upon completion of two years of employment the new hire receives the full supplemental benefit rate.

Residential Building Class "C" Handyperson

Residential Building Class "C": buildings where the assessed value of the land and building, based upon the 1935 assessment, divided by the number of rooms in the building, gives an assessed value of \$2000.00 or less a room.

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$23.45

Supplemental Benefit Rate per Hour: \$9.43

Supplemental Note: Effective 1/1/2014 - \$9.83, for new employee 0-3 months of employment - \$0.00

Residential Building Class "C" Cleaner/Porter

Residential Building Class "C": buildings where the assessed value of the land and building, based upon the 1935 assessment, divided by the number of rooms in the building, gives an assessed value of \$2000.00 or less a room.

Effective Period: 7/1/2013 - 12/31/2013

Wage Rate per Hour: \$21.23

Supplemental Benefit Rate per Hour: \$9.43

Supplemental Note: for new employee 0-12 months of employment - \$6.92; for new employee 13-24 months of employment - \$9.18

NEW HIRE: Porter/Cleaner, may be paid a starting rate of 80% of the hourly rate published above. Upon completion of 30 months of employment, the new hire shall be paid the full wage rate. Upon completion of two years of employment the new hire receives the full supplemental benefit rate.

Effective Period: 1/1/2014 - 6/30/2014

Wage Rate per Hour: \$21.23

Supplemental Benefit Rate per Hour: \$9.83

Supplemental Note: for new employee 0-3 months of employment - \$0.00; for new employee 4-12 months of employment - \$7.22; for new employee 13-24 months of employment - \$9.58

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

NEW HIRE: Porter/Cleaner, may be paid a starting rate of 80% of the hourly rate published above. Upon completion of 30 months of employment, the new hire shall be paid the full wage rate. Upon completion of two years of employment the new hire receives the full supplemental benefit rate.

Months of employment shall be defined as an Employee's length of service with the Employer or at the Facility, whichever is greater.

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for work on a holiday plus the day's pay.
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
- Memorial Day
- Independence Day
- Labor Day
- Columbus Day
- Election Day
- Thanksgiving Day
- Christmas Day

Vacation

- 6 months.....three (3) days
- 1 year.....ten (10) days
- 5 years.....fifteen (15) days
- 15 years.....twenty (20) days
- 21 years.....twenty-one (21) days
- 22 years.....twenty-two (22) days
- 23 years.....twenty-three (23) days
- 24 years.....twenty-four (24) days
- 25 years.....twenty-five (25) days
- Plus two Personal Days per year.

SICK LEAVE

After 1 year of service.....ten (10) days per year

(Local #32 B/J)

BUILDING HVAC SERVICES OPERATOR

Engineer (Refrigeration)

Effective Period: 7/1/2013 - 12/31/2013

Wage Rate per Hour: \$35.18

Supplemental Benefit Rate per Hour: \$15.78

Effective Period: 1/1/2014 - 6/30/2014

Wage Rate per Hour: \$36.73

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

Supplemental Benefit Rate per Hour: \$16.35

Fireperson

Fireperson (Helper): Assist the Engineer

Effective Period: 7/1/2013 - 12/31/2013

Wage Rate per Hour: \$27.39

Supplemental Benefit Rate per Hour: \$15.41

Effective Period: 1/1/2014 - 6/30/2014

Wage Rate per Hour: \$28.60

Supplemental Benefit Rate per Hour: \$15.97

Please note that the NYC Comptroller's Office does not publish rates for the Stationary Engineer title.

Overtime Description

All hours worked on a holiday shall be paid at two and one half times the regular wage rate in lieu of the paid day off.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Paid Holidays

- New Year's Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Christmas Day
- Plus six (6) floating Holidays

Vacation

6 months	three (3) days
1 year	ten (10) days
5 years	fifteen (15) days
15 years	twenty (20) days
21 years.....	twenty-one (21) days
22 years	twenty-two (22) days
23 years	twenty-three (23) days
24 years	twenty-four (24) days
25 years	twenty-five (25) days

(Local #94)

CLEANER (PARKING GARAGE)

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

Garage Cleaner

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: **\$11.20**
Supplemental Benefit Rate per Hour: **\$1.72**

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular hourly rate after 40 hours in any work week.

(Based on data from NYS Department of Labor Occupational Employment Statistics and US Department of Labor Bureau of Labor Statistics)

FUEL OIL

Fuel Oil, Coal, Fuel Gas, Petroleum Product Chauffeur (5th Year and above)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: **\$30.61**
Supplemental Benefit Rate per Hour: **\$20.42**

Fuel Oil, Coal, Fuel Gas, Petroleum Product Chauffeur (4th Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: **\$28.00**
Supplemental Benefit Rate per Hour: **\$20.42**

Fuel Oil, Coal, Fuel Gas, Petroleum Product Chauffeur (3rd Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: **\$26.00**
Supplemental Benefit Rate per Hour: **\$20.42**

Fuel Oil, Coal, Fuel Gas, Petroleum Product Chauffeur (2nd Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: **\$24.00**
Supplemental Benefit Rate per Hour: **\$20.42**

Fuel Oil, Coal, Fuel Gas, Petroleum Product Chauffeur (1st Year)

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: **\$22.00**
Supplemental Benefit Rate per Hour: **\$20.42**

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
§230 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).

Martin Luther King Jr. Day
Lincoln's Birthday
Washington's Birthday
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Veteran's Day

Triple time the regular rate for work on the following holiday(s).

New Year's Day
Thanksgiving Day
Christmas Day

Paid Holidays

New Year's Day
Martin Luther King Jr. Day
Lincoln's Birthday
Washington's Birthday
Memorial Day
Independence Day
Labor Day
Columbus Day
Election Day
Veteran's Day
Thanksgiving Day
Christmas Day

Vacation

Less than 75 days worked.....no vacation.
75 days worked, but less than 110 days worked in a calendar year.....five (5) days the following year.
110 days or more worked in a calendar year.....ten (10) days the following year.

SICK LEAVE:

1 day sick leave earned for each 40 days worked in the preceding calendar year for a maximum of five (5) days per calendar year.

(Local #553)

GARDENER

Gardener

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

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$17.16
Supplemental Benefit Rate per Hour: \$1.72

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular hourly rate after 40 hours in any work week.

(Based on data from NYS Department of Labor Occupational Employment Statistics and US Department of Labor Bureau of Labor Statistics)

LOCKSMITH

Locksmith

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$19.63
Supplemental Benefit Rate per Hour: \$6.20

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular hourly rate after 40 hours in any work week.

(Based on data from NYS Department of Labor Occupational Employment Statistics and US Department of Labor Bureau of Labor Statistics)

MEDICAL WASTE REMOVAL

Driver

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$18.00
Supplemental Benefit Rate per Hour: \$9.34

Helper

Effective Period: 7/1/2013 - 6/30/2014
Wage Rate per Hour: \$14.25
Supplemental Benefit Rate per Hour: \$9.34

Tractor Trailer Driver

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

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$20.50

Supplemental Benefit Rate per Hour: \$9.34

Overtime Description

Time and one half the regular hourly rate after an 8 hour day or after 40 hours in any work week. The seventh day of work in a workweek is paid at double time the regular hourly rate. Time and one half the regular hourly rate for work on a holiday plus days pay for below paid holidays.

Paid Holidays

President's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Vacation

1 year of service but less than five years.....	ten (10) days
5 years of service but less than ten years.....	fifteen (15) days
10 years of service.....	sixteen (16) days
11 years.....	seventeen (17) days
12 years.....	eighteen (18) days
13 years.....	nineteen (19) days
14 years.....	twenty (20) days
20 years.....	twenty-one (21) days
21 years.....	twenty-two (22) days
22 years.....	twenty-three (23) days
23 years.....	twenty-four (24) days
24 years.....	twenty-five (25) days

Plus 5 Personal Days

(Local #813)

MOVER - OFFICE FURNITURE AND EQUIPMENT

Heavy and Tractor Trailer Truck Driver

Tractor-trailer combination or a truck with a capacity of at least 26,000 pounds Gross Vehicle Weight (GVW)

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$22.57

Supplemental Benefit Rate per Hour: \$4.49

Light Truck Driver

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$19.81

Supplemental Benefit Rate per Hour: \$4.49

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

Laborer and Freight, Stock, and Material Movers, Hand

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$17.51

Supplemental Benefit Rate per Hour: \$4.49

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular hourly rate after 40 hours in any work week.

(Based on data from NYS Department of Labor Occupational Employment Statistics and US Department of Labor Bureau of Labor Statistics)

REFUSE REMOVER

Refuse Remover

Effective Period: 7/1/2013 - 6/30/2014

Wage Rate per Hour: \$29.27

Supplemental Benefit Rate per Hour: \$4.49

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular hourly rate after 40 hours in any work week.

(Based on data from NYS Department of Labor Occupational Employment Statistics and US Department of Labor Bureau of Labor Statistics)

SECURITY GUARD (ARMED)

Security Guard (Armed)

Effective Period: 7/1/2013 - 12/31/2013

Wage Rate per Hour: \$28.00

Supplemental Benefit Rate per Hour: \$4.90

Supplemental Note: for new employee 0-30 days of employment - \$4.26; for new employee 31-120 days of employment - \$4.43; for new employee 121 days - 2 years of employment - \$4.54

Effective Period: 1/1/2014 - 6/30/2014

Wage Rate per Hour: \$28.25

Supplemental Benefit Rate per Hour: \$5.02

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

Supplemental Note: for new employee 0-30 days of employment - \$4.44; for new employee 31-120 days of employment - \$4.61; for new employee 121 days - 2 years of employment - \$4.63

Months of employment shall be defined as an Employee's length of service with the Employer or at the Facility, whichever is greater.

Overtime Description

A guard who works a holiday is paid the regular rate plus receives the paid holiday.
Supplemental Benefits shall be paid for each hour paid, up to forty (40) paid hours per week.

Overtime

Time and one half the regular rate after an 8 hour day.
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
Christmas Day
Personal Day

Vacation

Months on payroll	Vacation with Pay
6	3 days
12	5 days
24	10 days
60	15 days
180	20 days
300	25 days

Sick Leave
Employees accrue paid sick leave at the rate of one (1) sick day for every six (6) months worked, up to a maximum of six (6) days a year.

(Local #32B/J)

SECURITY GUARD (UNARMED)

Security Guard (Unarmed) 0 - 6 months

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate per Hour: **\$12.85**
Supplemental Benefit Rate per Hour: **\$4.54**
Supplemental Note: for new employee 0-30 days of employment - \$4.26; for new employee 31-120 days of employment - \$4.43

Effective Period: 1/1/2014 - 6/30/2014

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

Wage Rate per Hour: \$13.10

Supplemental Benefit Rate per Hour: \$4.63

Supplemental Note: for new employee 0-30 days of employment - \$4.44; for new employee 31-120 days of employment - \$4.61

Security Guard (Unarmed) 7 - 12 months

Effective Period: 7/1/2013 - 12/31/2013

Wage Rate per Hour: \$13.35

Supplemental Benefit Rate per Hour: \$4.54

Effective Period: 1/1/2014 - 6/30/2014

Wage Rate per Hour: \$13.60

Supplemental Benefit Rate per Hour: \$4.63

Security Guard (Unarmed) 13 - 18 months

Effective Period: 7/1/2013 - 12/31/2013

Wage Rate per Hour: \$13.85

Supplemental Benefit Rate per Hour: \$4.54

Effective Period: 1/1/2014 - 6/30/2014

Wage Rate per Hour: \$14.10

Supplemental Benefit Rate per Hour: \$4.63

Security Guard (Unarmed) 19 - 24 months

Effective Period: 7/1/2013 - 12/31/2013

Wage Rate per Hour: \$14.35

Supplemental Benefit Rate per Hour: \$4.54

Effective Period: 1/1/2014 - 6/30/2014

Wage Rate per Hour: \$14.60

Supplemental Benefit Rate per Hour: \$4.63

Security Guard (Unarmed) 25 - 30 months

Effective Period: 7/1/2013 - 12/31/2013

Wage Rate per Hour: \$14.85

Supplemental Benefit Rate per Hour: \$4.90

Effective Period: 1/1/2014 - 6/30/2014

Wage Rate per Hour: \$15.10

Supplemental Benefit Rate per Hour: \$5.02

Security Guard (Unarmed) 31 months or more

Effective Period: 7/1/2013 - 12/31/2013

Wage Rate per Hour: \$15.15

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

Supplemental Benefit Rate per Hour: \$4.90

Effective Period: 1/1/2014 - 6/30/2014

Wage Rate per Hour: \$15.60

Supplemental Benefit Rate per Hour: \$5.02

Months of employment shall be defined as an Employee's length of service with the Employer or at the Facility, whichever is greater.

Overtime Description

A guard who works a holiday is paid the regular rate plus receives the paid holiday.
Supplemental Benefits shall be paid for each hour paid, up to forty (40) paid hours per week.

Overtime

Time and one half the regular rate after an 8 hour day.

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
Christmas Day
Personal Day

Vacation

Months on payroll	Vacation with Pay
6	3 days
12	5 days
24	10 days
60	15 days
180	20 days
300	25 days

Sick Leave

Employees accrue paid sick leave at the rate of one (1) sick day for every six (6) months worked, up to a maximum of six (6) days a year.

(Local #32B/J)

WINDOW CLEANER

Window Cleaner

Effective Period: 7/1/2013 - 12/31/2013

Wage Rate per Hour: \$26.44

Supplemental Benefit Rate per Hour: \$9.51

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

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate per Hour: \$26.90
Supplemental Benefit Rate per Hour: \$9.91

Power Operated Scaffolds, Manual Scaffolds, and Boatswain Chairs

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate per Hour: \$28.69
Supplemental Benefit Rate per Hour: \$9.51

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate per Hour: \$29.27
Supplemental Benefit Rate per Hour: \$9.91

Window Cleaner Apprentice (0 - 3 months)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate per Hour: \$19.59
Supplemental Benefit Rate per Hour: None

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate per Hour: \$19.92
Supplemental Benefit Rate per Hour: None

Window Cleaner Apprentice (4 - 7 months)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate per Hour: \$21.18
Supplemental Benefit Rate per Hour: \$9.51

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate per Hour: \$21.54
Supplemental Benefit Rate per Hour: \$9.91

Window Cleaner Apprentice (8 - 11 months)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate per Hour: \$22.44
Supplemental Benefit Rate per Hour: \$9.51

Effective Period: 1/1/2014 - 6/30/2014
Wage Rate per Hour: \$22.82
Supplemental Benefit Rate per Hour: \$9.91

Window Cleaner Apprentice (12 - 15 months)

Effective Period: 7/1/2013 - 12/31/2013
Wage Rate per Hour: \$23.72

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

Supplemental Benefit Rate per Hour: \$9.51

Effective Period: 1/1/2014 - 6/30/2014

Wage Rate per Hour: \$24.12

Supplemental Benefit Rate per Hour: \$9.91

Window Cleaner Apprentice (16 - 17 months)

Effective Period: 7/1/2013 - 12/31/2013

Wage Rate per Hour: \$25.01

Supplemental Benefit Rate per Hour: \$9.51

Effective Period: 1/1/2014 - 6/30/2014

Wage Rate per Hour: \$25.44

Supplemental Benefit Rate per Hour: \$9.91

Months of employment shall be defined as an Employee's length of service with the Employer or at the Facility, whichever is greater.

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

Martin Luther King Jr. Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Personal Day

Vacation

After 7 months but less than 1 year of service.....five (5) days

1 year but less than 5 years of service.....ten (10) days

5 years of service but less than 15 years of service.....fifteen (15) days

15 years of service but less than 21 years of service.....twenty (20) days

21 years.....twenty-one (21) days

22 years.....twenty-two (22) days

23 years.....twenty-three (23) days

24 years.....twenty-four (24) days

25 years or more of service.....twenty-five (25) days

Plus 1 day per year for medical visit

SICK LEAVE:

10 days after one year worked. Unused sick days to be paid in cash.

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

(Local #32 B/J)

June 01, 2013



NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

**DDC STANDARD GENERAL CONDITIONS
FOR SINGLE CONTRACT PROJECTS**



NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

June 01, 2013

No Text

NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

**DIVISION 01 – DDC STANDARD GENERAL CONDITIONS
SINGLE CONTRACT PROJECTS
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June 01, 2013



NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

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.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 1.4 B

- B. LEED: The City of New York will seek U.S. Green Building Council (USGBC) LEED (Leadership in Energy and Environmental Design) certification for this Project as specified in Section 01 81 13, "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 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 Design 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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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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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 appropriate.Should 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 1.6 herein.
- C. Number of Copies: Submit FOUR (4) copies of LEED submittals, in accordance with procedure described in Sub-Section 1.6 herein, unless otherwise indicated.
 - 1. LEED Submittals shall be clearly marked "LEED".
- 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.



NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

Division 01 – DDC STANDARD GENERAL CONDITIONS
SINGLE CONTRACT PROJECTS
Issue Date - June 01, 2013

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 33 00



SECTION 01 35 03
GENERAL MECHANICAL REQUIREMENTS

REFER TO THE ADDENDUM FOR APPLICABILITY OF THIS SECTION 01 35 03

PART 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.

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 35 03



NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

Division 01 – DDC STANDARD GENERAL CONDITIONS
SINGLE CONTRACT PROJECTS
Issue Date - June 01, 2013

No Text

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 1-1/4 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.



- 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.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.5

3.5 CIRCUIT PROTECTIVE DEVICES:

This Section sets forth the circuit protective devices such as circuit breakers and safety switches, used in connection with Motor Control Equipment, Distribution Centers, Panel boards and Service Entrance.

A. CIRCUIT BREAKERS:

1. CIRCUIT BREAKERS: 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.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.6

3.6 DISTRIBUTION CENTERS:

This Section sets forth the construction and installation procedure for Switchboards, Panel boards and Cabinets.

- A. 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 1/2



- 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: 1/2 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 1/2 horsepower or more, magnetic starters and circuit breakers shall be used. Single phase A.C. motors smaller than 1/2 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.

END OF SECTION 01 35 06



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No Text

GENERAL ELECTRICAL REQUIREMENTS
01 35 06 - 16



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



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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 Landmarks 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



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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 Sub-Section 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



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QUALITY REQUIREMENTS
01 40 00 - 8



**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 adopt 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)



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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)



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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



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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



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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



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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)

REFERENCES
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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



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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 Council (Formerly: WCMA - Window Covering Manufacturers Association)
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association)
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California)
WIC	Woodwork Institute of California (Now WI)
WMMPA	Wood Moulding & Millwork Producers Association
WRI	Wire Reinforcement Institute, Inc.
USEPA	United States Environmental Protection Agency
WSRCA	Western States Roofing Contractors Association
WWPA	Western Wood Products Association

PART II – PRODUCTS (Not Used)

PART III – EXECUTION (Not Used)

END OF SECTION 01 42 00

REFERENCES
01 42 00 -11



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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 permanently installed facility and service while in use during construction 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:

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.2 A

- 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 15th to April 15th.

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:

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.8 A

A. OFFICE SPACE IN EXISTING BUILDING:

1. The Resident Engineer will arrange for office space for sole use in the building where work is in progress. The Contractor 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 1/2"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.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.8 B

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 FEILD 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 Article 3.8 A.14(c).4 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 a complete computer workstation 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, lampposts, 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

- 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
Issue Date - June 01, 2013

No Text

TEMPORARY FACILITIES, SERVICES AND CONTROLS
01 50 00 -28



**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 41st 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

No Text



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 Sub-Section 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) feet 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 Resident Engineer 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 2011 Electrical Code 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.

REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 1.5 C

- 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 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 Site of New York Waste Match, a materials exchange database and service
www.bignyc.org Site of Build It Green NYC, a non-profit outlet for salvaged and surplus building materials
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 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 the applicable credit, 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 and 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. Training. 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



NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

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 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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Division 01 – DDC STANDARD GENERAL CONDITIONS
SINGLE CONTRACT PROJECTS
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No Text

CLOSEOUT PROCEDURES
01 77 00 -8



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 Consultant. 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 Consultant. 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 contain permanently attached labels displaying the following:



1. Heading:
The City of New York
Department of Design and Construction
Division of Public Buildings
 2. Capital Budget Project Number (FMS ID)
 3. Name and Location of Project
 4. Contractor's Name and Address
 5. Subcontractor's Name and Address (where applicable)
 6. Dates of the work covered by the contents of the Project Manual.
 7. Binder spine 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.



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- 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 Orientation 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.



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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



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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



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Division 01 – DDC STANDARD GENERAL CONDITIONS
SINGLE CONTRACT PROJECTS
Issue Date - June 01, 2013

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 orientation indicated in other sections of the Project Specifications

1.4 DEFINITIONS:

- A. Refer to Article 2 of the Contract for definition of terms, words and expressions used in the General Conditions not otherwise defined herein.



- 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 orientation, submit three (3) complete orientation 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 orientation.
- 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 orientation module.
- b. Identification: On each copy, provide an applied label with the following information:
- 1) Project Contract I.D. Number
 - 2) Project Contract Name
 - 3) Name of Contractor
 - 4) Name of Subcontractor as applicable
 - 5) Name of Design Consultant
 - 6) Name of Construction Manager as applicable
 - 7) Date recorded.
 - 8) Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - 9) Table of Contents including list of systems covered.
- c. Transcript: Prepared on 8-1/2-by-11-inch paper, hole-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.

**REFER TO THE ADDENDUM FOR THE APPLICABILITY OF SUB-SECTION 3.2.A or
SUB-SECTION 3.2.B**

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:

1. The Commissioning Authority/Agent (CxA) under separate contract with the City of New York will be responsible for DVD recording of Demonstration and Orientation sessions as described in Section 01 91 13, GENERAL COMMISSIONING REQUIREMENTS.

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 except mechanical and electrical components 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 ($1/2 \times \text{pre-consumer percentage} \times \text{product value} + 1 \times \text{post-consumer percentage} \times \text{product value} = \text{total recycled content value}$).
 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 (1st edition, May 1993)
 - b. Anti-corrosive and Anti-rust paints: refer to Green Seal standard GC-03 (2nd Edition, January 1997)
 - c. Aerosol Adhesives: refer to Green Seal standard GS-36 (1st edition, October 2000)
9. **HIGH ALBEDO PAVING AND WALKWAY MATERIALS:** For paving and walkway materials made from concrete or brick provide published product literature or letter from the manufacturer (on the manufacturer's letterhead) verifying a minimum Solar Reflectance Index (SRI) value of 29. SRI values 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 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 rejecting the submittals of 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



Date: _____
Project Name: _____
Project I.D.: _____
Project Location: _____

Contractor Name: _____
Contractor Contact: _____
Telephone Number: _____

Product/Manufacturer	Recycled Content		Regional ⁴		Rapidly Renewable ⁷		VOC content ⁸		Flooring ⁹		Wood	
	Material Cost ¹	Pre-Consumer (% by wt) ²	Post-Consumer (% by wt) ³	Total % (1/2 Pre + Post)	Location & Distance to Manufacture ⁶	Location & Distance to Manufacture ⁶	Extracted & Manuf. (% by wt)	% by wt listed	*VOC content allowed	*Green Label or FloorScore	*Added urea formaldehyde (Yes/No) ¹⁰	FSC Certified ¹¹ (% by wt)

¹ **Material Cost:** As it appears on the manufacturer's or distributor's invoice to the contractor or subcontractor. Does not include labor or equipment costs associated with installation.

² **Pre-Consumer Recycled Content:** Industrial/manufacturing waste material (e.g., fly-ash and synthetic gypsum, both waste products from coal burning electricity plants) diverted from landfill and incorporated into a finished product. Scrap raw materials that can be reused in the same manufacturing process from which they are recovered are not considered Pre-Consumer Recycled Content.

³ **Post-Consumer Recycled Content:** Material or product that has served its intended consumer use (e.g., an empty plastic bottle) and has been diverted from landfill and incorporated into a finished product.

⁴ **Regional:** Refers to a material/product that is BOTH extracted AND manufactured within 500 miles of the Project site. Record this information ONLY for materials/products meeting BOTH of these criteria.

⁵ **Extraction:** Refers to the location from which the raw resources used in a building product are extracted, harvested, or recovered.

⁶ **Manufacture:** Refers to the location of the final assembly of components into a building product that is furnished and installed by the Contractor.

⁷ **Rapidly Renewable:** Refers to materials/products derived from agricultural products that are typically harvested within a ten-year or shorter cycle.

⁸ **VOC Content:** The quantity of volatile organic compounds contained in adhesives, sealants, paints and architectural coatings. Reported in grams/liter or lbs/gallon, less water.

⁹ **Flooring:** For carpet, indicate Carpet and Rug Institute (CRI) Green Label Plus certification. For carpet cushion, indicate CRI Green Label certification. For all flooring except unfinished/untreated wood and mineral-based flooring (tile, masonry, terrazzo, cut stone) without organic-based coatings or sealants, indicate Resilient Floor Covering Institute FloorScore rating. VOC limits for adhesives, sealants, etc. still apply.

¹⁰ **Added Urea Formaldehyde:** Applies to composite wood and agfiber products only (plywood, particleboard, MDF, OSB, wheatboard, strawboard). Resins or binders with added urea formaldehyde are prohibited.

¹¹ **FSC Certified:** Certification from the Forest Stewardship Council. This column is only applicable to wood products.

* Applies only to materials/products installed within the weather barrier.

Contractor Certification: _____ (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



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
- B. Rule 1113 - “Architectural Coatings”, amended 9 July 2004: South Coast Air Quality Management District (SCAQMD), State of California, www.aqmd.gov
- C. Green Seal Standard GS-11- “Paints”, of Green Seal, Inc., Washington, DC, www.greenseal.org
- D. Green Seal Standard GC-03- “Anti-Corrosive Paints”, of Green Seal, Inc., Washington, DC, www.greenseal.org

1.7 VOC REQUIREMENTS FOR INTERIOR ADHESIVES, SEALANTS, PAINTS AND COATINGS:

- A. GENERAL: Unless otherwise specified herein, the VOC content of all interior adhesives, sealants, paints and coatings (herein referred to as “products”) 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



- 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.
- B. ANSI/ASHRAE 52.2-1999, “Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size”, www.ashrae.org

1.6 LEED BUILDING GENERAL REQUIREMENTS:

- A. Implement practices and procedures as necessary to meet the project’s environmental performance goals as set forth in the specific requirements of this section. Specific project goals that may impact this area of work include: use of recycled-content materials; use of low-emitting materials; construction waste recycling; and the implementation of a construction indoor air quality management plan. Ensure that the requirements related to these goals, as defined in this Section, are implemented to the fullest extent. Substitutions or other changes to the work 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 and implement 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”, Third Edition, 2007.
 - 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 1.7 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 TRAINING
 - 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 Consulting Architect/Engineer 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.



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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

No Text

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

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

Contract for Furnishing all Labor and Material Necessary

Contractor

Dated _____, 20____

Approved as to Form
Certified as to Legal Authority

Acting Corporation Counsel

Dated _____, 20____

Entered in the Comptroller's Office

First Assistant Bookkeeper

Dated _____, 20____





FMS ID: HWKF029B



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

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

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

CONTRACT NO. 1 GENERAL CONSTRUCTION WORK

**121 Plymouth Paint Warehouse
Relocation to 424 Wythe Building
Construction**

LOCATION: 424 Wythe Avenue
BOROUGH: Brooklyn 11211
CITY OF NEW YORK

TJM Construction Corp/Long Island Concrete, Inc.
Contractor A Joint Venture

Dated October 10 , 20 14

Approved as to Form
Certified as to Legal Authority

[Signature]
Acting Corporation Counsel

[Signature] 5/6/14

Dated May 6 , 20 14

Entered in the Comptroller's Office

First Assistant Bookkeeper

Dated _____ , 20 _____





PROJECT ID:

HWKF029B

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

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

VOLUME 3 OF 3

**ADDENDUM TO THE GENERAL
CONDITIONS**

SPECIFICATIONS

FOR FURNISHING ALL LABOR AND MATERIALS
NECESSARY AND REQUIRED FOR:

**121 Plymouth Paint Warehouse
Relocation to 424 Wythe Building
Construction**

LOCATION:
BOROUGH:
CITY OF NEW YORK

424 Wythe Avenue
Brooklyn 11211

CONTRACT NO. 1

GENERAL CONSTRUCTION WORK

DOT

Goldman + Copeland Associates, PC

Date:

April 10, 2014



04-112

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NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

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

ADDENDUM TO THE GENERAL CONDITIONS
FOR SINGLE CONTRACT PROJECTS

The General Conditions are hereby amended in accordance
with the terms and conditions set forth in this Addendum.

I. PROJECT DESCRIPTION

FMS #: **HWKF029B**

PROJECT NAME: **121 Plymouth Relocation to 424 Wythe Avenue Building Construction**

PROJECT DESCRIPTION: ***This Project consists of construction of a one story CMU storage building on grade***

PROJECT LOCATION: **424 Wythe Avenue**
BOROUGH: **Brooklyn**
CITY OF NEW YORK
ZIP CODE: **11211**
COMMUNITY BOARD #: **1**

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: **NO**

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		
01 3591		Historic Treatment Procedures		X	
01 5000	3.2 (A)	Temporary Water Facilities / Temporary Water	X		
	3.2 (B)	Temporary Water Facilities / Temporary Water – Work in Existing Facilities		X	
	3.3 (B)	Temporary Sanitary Facilities / Self-Contained Toilet Units	X		
	3.3 (C)	Temporary Sanitary Facilities / Existing Toilets		X	
	3.4 (B) 1	Temporary Power, Lighting, and Site Lighting / Connection to Utility Lines	X		

<u>Section</u>	<u>Sub-Section</u>	<u>Sub-Section</u>	<u>Applies</u>	<u>Does not Apply</u>	<u>Applies as Amended</u>
01 5000	3.4 (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	
01 5411	3.1 (A-J)	Temporary Use, Operation and Maintenance of Elevators During Construction for New Buildings Up To and Including 15 Stories		X	
	3.2 (A-M)	Temporary Use, Operation and Maintenance of Elevators During Construction for New Buildings Over 15 Stories		X	
	3.3 (A-E)	Temporary Use, Operation and Maintenance of Elevators During Construction for Existing Buildings		X	
01 7300	3.3 (A-I)	Surveys	X		
	3.4 (A-B)	Borings		X	
	3.12 (A-D)	Sleeves and Hangers	X		
	3.13 (A)	Sleeve and Penetration Drawings	X		
	3.15 (A)	Location of Partitions	X		
01 7419	1.5 (C)	Waste Management Performance Requirements / LEED Certification		X	
01 7900		Demonstration and Owner's Pre-Acceptance Orientation	X		
	3.2 (A)	Non-Commissioned Projects	X		
	3.2 (B)	Commissioned Projects		X	
01 8113		Sustainable Design Requirements for LEED Buildings		X	
01 8113.13		VOC Limits for Adhesives, Sealants, Paints and Coatings for LEED Buildings		X	
01 8119		Indoor Air Quality Requirements for LEED Buildings		X	
01 9113		General Commissioning Requirements		X	

VIII. SPECIAL EXPERIENCE REQUIREMENTS FOR THE PROJECT

NOT USED

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)
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 each separate 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 Completion	Consecutive Calendar Days	270
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 less than \$1,000,000 10% 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		See Contract Article 74
Article 75 Contract	Compensation to be Paid to Contractor		See Contract Article 75
Article 78 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
<p>■ Commercial General Liability Art. 22.1.1</p>	<p>The minimum limits shall be \$1,000,000.00 per occurrence and \$2,000,000.00 per project aggregate applicable to this Contract.</p> <p>Additional Insureds:</p> <ol style="list-style-type: none"> 1. City of New York, including its officials and employees, with coverage at least as broad as ISO Forms CG 20 10 and CG 20 37, and 2. All person(s) or organization(s), if any, that Article 22.1.1(b) of the Contract requires to be named as Additional Insured(s), with coverage at least as broad as ISO Form CG 20 26. The Additional Insured endorsement shall either specify the entity's name, if known, or the entity's title (e.g., Project Manager). <ol style="list-style-type: none"> 1. City of New York, including its officials and employees, and 2. NYC DOT
<p>■ Workers' Compensation Art. 22.1.2</p> <p>■ Disability Benefits Insurance Art. 22.1.2</p> <p>■ Employers' Liability Art. 22.1.2</p> <p><input type="checkbox"/> Jones Act Art. 22.1.3</p> <p><input type="checkbox"/> U.S. Longshoremen's and Harbor Workers Compensation Act Art. 22.1.3</p>	<p>Workers' Compensation, Employers' Liability, and Disability Benefits Insurance: Statutory per New York State law without regard to jurisdiction.</p> <p>Note: The following forms are acceptable: (1) New York State Workers' Compensation Board Form No. C-105.2, (2) State Insurance Fund Form No. U-26.3, (3) New York State Workers' Compensation Board Form No. DB-120.1 and (3) Request for WC/DB Exemption Form No. CE-200. The City will not accept an ACORD form as proof of Workers' Compensation or Disability Insurance.</p> <p>Jones Act and U.S. Longshoremen's and Harbor Workers' Compensation Act: Statutory per U.S. law.</p>

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
■ Builders' Risk Art. 22.1.4	100 % of total value of Work Contractor the Named Insured; the City both an Additional Insured and one of the loss payees as its interests may appear. If the Work does not involve construction of a new building or gut renovation work, the Contractor may provide an installation floater in lieu of Builders Risk insurance. Note: Builders Risk Insurance may terminate upon Substantial Completion of the Work in its entirety.
■ Commercial Auto Liability Art. 22.1.5	\$1,000,000.00 per accident combined single limit If vehicles are used for transporting hazardous materials, the Contractor shall provide pollution liability broadened coverage for covered vehicles (endorsement CA 99 48) as well as proof of MCS 90
<input type="checkbox"/> Contractor's Pollution Liability Art. 22.1.6	\$ _____ per occurrence \$ _____ aggregate Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
<input type="checkbox"/> Marine Protection and Indemnity Art. 22.1.7(a)	\$ _____ 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.

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 [Contracting agency to fill in total value of City vessels involved]
[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><input type="checkbox"/> Asbestos Liability _____</p>	<p>Only required of the Contractor or Subcontractor performing any required asbestos removal.</p> <p>\$1,000,000 each occurrence, \$2,000,000 aggregate (Combined Single Limit); only required of the Contractor or Subcontractor performing any required asbestos removal.</p> <p>Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____</p>
<p>[OTHER] Art. 22.1.8</p> <p><input type="checkbox"/> Boiler Insurance _____</p>	<p>\$200,000</p>
<p>[OTHER] Art. 22.1.8</p> <p>■ Professional Liability</p> <p>In the event any section of the Specifications requires the Contractor to engage a Professional Engineer to provide design and/or engineering services, the Engineer engaged by the Contractor, as well as any sub consultant(s) performing professional services, shall provide Professional Liability Insurance.</p>	<p>\$1,000,000 per occurrence</p> <p>The Contractor's Professional Engineer shall maintain and submit evidence of Professional Liability Insurance in the minimum amount of \$1,000,000 per claim. The policy or policies shall include an endorsement to cover the liability assumed by the Contractor under this Agreement arising out of the negligent performance of professional services or caused by an error, omission or negligent act of the Contractor's Professional Engineer or anyone employed by the Contractor's Professional Engineer.</p> <p>Claims-made policies will be accepted for Professional Liability Insurance. All such policies shall have an extended reporting period option or automatic coverage of not less than two (2) years. If available as an option, the Contractor's Professional Engineer shall purchase extended reporting period coverage effective on cancellation or termination of such insurance unless a new policy is secured with a retroactive date, including at least the last policy year.</p>

SCHEDULE A (FOR PUBLICLY BID PROJECTS)

Relating to Article 22 - Insurance

PART IV. Address of Commissioner

Wherever reference is made in Article 7 or Article 22 to documents to be sent to the **Commissioner** (e.g., notices, filings, or submissions), such documents shall be sent to the address set forth below or, in the absence of such address, to the **Commissioner's** address as provided elsewhere in this **Contract**.

ACCO's Office, Insurance Unit

30-30 Thomson Avenue, 4th Floor

Long Island City, New York 11101

SCHEDULE B

Guarantees and Warranties

(Reference: Section 01 7839, Article 2.7 of the DDC Standard General Conditions)

GUARANTY FROM CONTRACTOR

(1) **Contractor's Guaranty Obligation:** The Contractor shall promptly repair, replace, restore or rebuild, as the Commissioner may determine, any finished Work in which defects of materials or workmanship may appear or to which damage may occur because of such defects, during the one (1) year period subsequent to the date of Substantial Completion (or use and occupancy in accordance with the Contract), except for the areas of Work set forth below:

- Roofing, Waterproofing, and Joint Sealant Work. For these types of work, the guarantee period shall be (2) two years.
- Trees and/or Plant Material. For trees and/or plant material furnished and installed, the guarantee period shall be (2) two years. During the guarantee period, the Contractor shall provide all maintenance services set forth in the Specifications.

(2) **Guaranty Period:** The obligation of the Contractor, and its Surety under the Performance Bond, is limited to the period(s) of time specified above.

(3) **Other Provisions Deemed Deleted:** In the event the Specifications and/or the Contract Drawings contain any provisions regarding guaranty requirements, such provisions are deemed deleted and replaced with the guaranty requirements set forth in this Schedule B.

WARRANTY FROM MANUFACTURER

(1) **Contractor's Obligation to Provide Warranties:** The items of material and/or equipment for which manufacturer warranties are required are listed below. For each item of material and/or equipment listed below, the Contractor shall obtain a written warranty from the manufacturer. Such warranty shall provide that the material or equipment is free from defects for the period set forth below and will be replaced or repaired within such specified period. The Contractor shall deliver all required warranties to the Commissioner.

(2) **Required Warranties:**

Specification Number	Material or Equipment	Warranty Period
071326	Sheet Membrane Waterproofing	10 years
075300	Membrane Roofing	15 years
076200	Sheet Metal Flashing	10 years
078100	Spray Applied Fire Resistive Materials	10 years
079200	Joint Sealers	10 years
084550	Translucent Linear Channel Glazing	10 years
086200	Plastic Unit Skylights	5 years

(3) **Application:** The obligations under the warranty for the periods specified above shall apply only to the manufacturer of the material or equipment, and not to the Contractor or its Surety; provided, however, the Contractor retains responsibility for obtaining all required warranties from the manufacturers and delivering the same to the Commissioner.

(4) **Other Provisions:** The warranty requirements set forth in this Schedule B are also included in the Specifications.

- (a) In the event of any conflict between a warranty requirement set forth in the Specifications and a warranty requirement set forth in Schedule B, the warranty requirement set forth in Schedule B shall take precedence.
- (b) In the event a warranty requirement set forth in the Specifications is omitted from Schedule B, such omission from Schedule B shall have no effect and the Contractor's obligation to provide the manufacturer's warranty, as set forth in the Specifications, shall remain in full force and effect
- (c) In the event a warranty requirement for a particular item of material or equipment is omitted from both Schedule B and the Specifications, and the manufacturer of such item actually provides a warranty, the Contractor shall be obligated to obtain and deliver to the Commissioner the highest level of warranty actually provided by that manufacturer.
- (d) In the event a warranty requirement is provided for a particular item of material or equipment, and such requirement specifies a warranty period that is longer than that which is actually provided by any of the specified manufacturers, the Contractor shall be obligated to obtain and deliver to the Commissioner the highest level of warranty actually provided by any of the specified manufacturers, unless otherwise directed in writing by the Commissioner.
- (e) Unless indicated otherwise Warranties are to take effect on the date of Substantial Completion.

SCHEDULE C

Contract Drawings

(Reference: Section 01 1000, Article 1.5 (A) of the DDC Standard General Conditions)

The Schedule set forth below lists all Contract Drawings for the Project.

T-000.00 COVER SHEET
T-001.00 DRAWING LIST & CODE ANALYSIS
T-002.00 CODE ANALYSIS, MATERIAL INVENTORY

ARCHITECTURAL DRAWINGS

A-001.00 ABBREVIATIONS & SYMBOLS
A-003.00 ACCESSIBILITY STANDARDS
A-010.00 ARCHITECTURAL PLAN
A-011.00 SITE ELEVATIONS - FENCE
A-012.00 ARCHITECTURAL SITE DETAILS - FENCE
A-100.00 GENERAL STORAGE CONSTRUCTION PLANS
A-101.00 GENERAL STORAGE CONSTRUCTION PLAN - ROOF
A-200.00 GENERAL STORAGE EXTERIOR ELEVATIONS
A-201.00 GENERAL STORAGE EXTERIOR ELEVATIONS
A-301.00 GENERAL STORAGE BUILDING SECTIONS
A-400.00 GENERAL STORAGE WALL DETAILS
A-401.00 GENERAL STORAGE WALL DETAILS
A-421.00 GENERAL STORAGE DETAILS
A-430.00 GENERAL STORAGE DOOR DETAILS
A-431.00 GENERAL STORAGE WINDOW DETAILS

CIVIL DRAWINGS

C-101.00 NOTES
C-102.00 EXISTING CONDITIONS PLAN
C-103.00 DEMOLITION PLAN
C-104.00 SITE PLAN
C-105.00 GRADING, DRAINAGE AND UTILITY PLAN
C-106.00 EROSION & SEDIMENT CONTROL PLAN
C-107.00 DETAILS I
C-108.00 DETAILS II
C-109.00 DETAILS III
C-110.00 DETAILS IV
C-111.00 DETAILS V

STRUCTURAL DRAWINGS

S-101.00 GENERAL STORAGE STRUCTURAL PLANS
S-201.00 TYPICAL CONCRETE DETAILS
S-202.00 SECTIONS AND DETAILS
S-301.00 GENERAL AND STRUCTURAL NOTES
S-302.00 TYPICAL STRUCTURAL STEEL DETAILS AND NOTES

HVAC DRAWINGS

M-001.00 MECHANICAL SCHEDULES AND DETAILS
M-100.00 MECHANICAL FLOOR & ROOF PLANS

ELECTRICAL DRAWINGS

E-001.00 SITE PLAN
E-100.00 LIGHTING PLAN, SYMBOLS & NOTES
E-200.00 POWER PLAN

DRAWINGS

EN-001.00 ENERGY ANALYSIS GROUND FLOOR – COMCheck - MECHANICAL

EN-002.00 ENERGY ANALYSIS GROUND FLOOR – COMCheck - ELECTRICAL

EN-003.00 ENERGY ANALYSIS GROUND FLOOR – COMCheck – ENVELOPE

FIRE ALARM DRAWINGS

FA-100.00 FIRE ALARM - FLOOR PLAN, NOTES, RISER & OPERATIONS

SCHEDULE D

Electrical Motor Control Equipment

NO TEXT

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: Goldman Copeland
TELEPHONE NUMBER: 212-868-4660
DDC PROJECT MANAGER: Errol Silva
TELEPHONE NUMBER: 718-391-1247

DATE: _____

APPROVED: _____
(DDC RESIDENT ENGINEER/CPM)

SEE FOLLOWING PAGES FOR SCHEDULE

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	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION
			SHOP DWG.	SAMPLE												

01 3526	Safety and Health Program	X															
01 3526	Contractor's Safety Plan	X															
01 5000	Site Plan		X														
01 5000	Reports	X															
01 5423	NYC DOB Scaffold & Sidewalk Shed Permits	X	X														
01 5423	Site Logistics/Site Safety Plan	X															
01 5423	Scaffold & Shed Installation Drawings		X														
01 7419	Waste Management Plan	X															
01 7900	Instruction Program for Demonstration & Orientation	X															
01 7900	Qualification Data	X															
01 8113.13	MSDS			X													
01 8119	Product Cut Sheets				X												

REPORT DATE		FMS ID #/PROJECT ID #: CONTRACT REGISTRATION #: PROJECT NAME:				Contract # - GENERAL CONSTRUCTION										
SPEC. SECT. #	DESCRIPTION	COORD. WITH CONTR.	SUBMITTAL		SUB. DATE	REQ'D DEL.	FABRIC. TIME	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION
			SHOP DWG	SAMPLE	CAT CUTS											
076200	Sheet Metal Flashing	X	X	X	X											
077100	Roof Specialties and Accessories	X	X	X	X											
078100	Sprayed Fire Resistive Materials	X	X		X											
078413	Firestops and Smoke seals	X		X	X											
079200	Joint Sealers	X	X	X	X											
081113	Steel Doors and Frames	X	X		X											
084500	Translucent Linear Channel Glazing System	X	X													
086400	Translucent Skylight System	X	X	X	X											
099000	Painting and Finishing	X		X	X											
311000	Notification of discrepancies in existing site conditions, if applicable.	X														
312100	Provide manufacturer's information on the compaction equipment to be used on each type of material for review. 2. Filter fabric/ Geotextiles	X			X											

Contract 1 - GENERAL CONSTRUCTION

CONTRACT #:
TRADE:
SHOP DRAWING LOG SHEET #

FMS ID #/PROJECT ID #:
CONTRACT REGISTRATION #:
PROJECT NAME:

SPEC. SECT. #	DESCRIPTION	COORD. WITH CONTR.	SUBMITTAL		SUB. DATE	REQ'D DEL.	FABRIC. TIME	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION
			DWG. SHOP	SAMPLE												

312100	Shop drawings and associated calculations for sheeting, shoring, bracing and underpinning. Shop drawings and calculations shall be signed and sealed by a New York State licensed professional engineer.	X															
312100	Engineer's report on dewatering scheme along with associated drawings and calculations.	X															
312100	Erosion and Sediment Control Plan along with a written narrative. Incorporate into the drawings and narrative erosion control measures indicated to be performed as indicated above	X															

REPORT DATE		FMS ID #/PROJECT ID #/ CONTRACT REGISTRATION #/ PROJECT NAME:				CONTRACT # Contract 1 - GENERAL CONSTRUCTION TRADE: SHOP DRAWING LOG SHEET #										
SPEC. SECT. #	DESCRIPTION	COORD. WITH CONTR.	SUBMITTAL		SUB. DATE	REQ'D DEL.	FABRIC. TIME	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION
			SHOP DWG.	SAMPLE												

312100	Provide a 15 pound bag of each material used for imported fill, backfill, aggregate base, gas permeable aggregate, crushed stone, broken stone ballast to Commissioner's testing laboratory.	X															
312100	Provide the following: a. Gradation analysis for fill materials. b. Gradation analysis for aggregate bases. c. Gradation analysis for crushed stone. d. Gradation analysis for broken stone ballast (if required). e. Material composition analysis of recycled concrete material.	X															

REPORT DATE		FMS ID #/PROJECT ID #: CONTRACT REGISTRATION #: PROJECT NAME:				CONTRACT #: TRADE: SHOP DRAWING LOG SHEET #															
SPEC. SECT. #	DESCRIPTION	COORD. WITH CONTR.	SUBMITTAL			FABRIC. TIME	REQ'D DEL.		SUB. DATE	ACTION		REC'D	ACTION		REC'D	ACTION		RET'D	ACTION	REC'D	ACTION
			SHOP DWG.	SAMPLE	CATS		REC'D	RET'D		REC'D	RET'D		REC'D	RET'D		REC'D	RET'D				

312100	Submit existing conditions survey consisting of various data described in Article 3.02 of this Section.																					
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REPORT DATE		FMS ID #/PROJECT ID #: CONTRACT REGISTRATION #: PROJECT NAME:				CONTRACT #: TRADE: SHOP DRAWING LOG SHEET #				Contract 1 - GENERAL CONSTRUCTION						
SPEC. SECT. #	DESCRIPTION	COORD. WITH CONTR.	SUBMITTAL		SUB. DATE	REQ'D DEL.	FABRIC. TIME	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION
			DWG.	SAMPLE												

312100	Provide certificate guaranteeing fill and backfill material conforms to the samples supplied and the requirements of this section. b. Provide certificate guaranteeing aggregate materials used for construction conforms to the gradation supplied and the requirements of this section. c. Provide facility permits, material acceptance requirements, and waste analytical requirements for each proposed off-site disposal facility that conform to the requirements of this section d. Provide letter from each borrow area stating that the																
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REPORT DATE		FMS ID #/PROJECT ID #: CONTRACT REGISTRATION #: PROJECT NAME:				CONTRACT # _____ Contract 1 – GENERAL CONSTRUCTION TRADE: _____ SHOP DRAWING LOG SHEET # _____										
SPEC. SECT. #	DESCRIPTION	COORD. WITH CONTR.	SUBMITTAL			REQ'D DEL.	FABRIC. TIME	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION
			SHOP DWG.	SAMPLE	CATS.											

312100	imported fill and aggregate are environmentally clean and meet requirements of this section. The letter shall also include required information on each borrow area site.																
312100	a. Provide analytical testing of: 1)Existing material to be removed 2)Existing material to be reused on-site. Parameters as defined in paragraph 1.05F. 3)Borrow (imported fill) material. Parameters as defined in paragraph 1.05F.	X															

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	REQD DEL.	FABRIC. TIME	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION
			SHOP DWG.	SAMPLE												

312100	b. Analytical testing shall be performed by a New York State Department of Health Environmental Laboratory Approval Program (ELAP) certified laboratory. Laboratory reporting limits shall be acceptable to the Commissioner (i.e., below the regulatory comparison criteria).	X															
312100	Documentation acceptable to the Commissioner that material removed from the site for disposal has been disposed of at a facility approved by the Commissioner.	X															

REPORT DATE		FMS ID #/PROJECT ID #: CONTRACT REGISTRATION #: PROJECT NAME:				CONTRACT #: TRADE: SHOP DRAWING LOG SHEET #										
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			DWG.	SAMPLE												

312100	Excavated Material Disposal Plan prepared in accordance with Article of "Disposal of Excavated Material" of this Section and good engineering practices.	X															
321216	Provide manufactures' information on the following: 1. Prime coat 2. Tack coat 3. Reflective cracking membrane 4. Pavement Sealer 5. Joint Sealer 6. Herbicide 7. Line Striping Paint	X							X								

REPORT DATE		FMS ID #/PROJECT ID #: CONTRACT REGISTRATION #: PROJECT NAME:				CONTRACT #: TRADE: SHOP DRAWING LOG SHEET #										
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			SHOP DWG.	SAMPLE												

321216	<p>1.Design Data: Submit design mix formulas for plant-mix and surfacing mix and name of producer.</p> <p>2.Certificates: Provide certificates from producer certifying that each material item complies with, or exceeds, the specified requirements.</p> <p>3.Qualifications: Provide proof of Producer and Installer qualifications specified under "Quality Assurance".</p> <p>4.Surveys: Submit survey required under "Field Quality Control".</p>																	

Contract 1 - GENERAL CONSTRUCTION

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	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION
			SHOP DWG.	SAMPLE	CAT CUTS										

321313	A. Product Data Provide manufactures' information for welded steel wire fabric. B. Shop Drawings 1. Steel curb facing C. Certificates and Mixes Provide certificates or certifications for: 1. Concrete design mix 2. Asphaltic concrete job mix formulas for each course. 3. Gradation for aggregate base course & subbase course.															

REPORT DATE		FMS ID #/PROJECT ID #: CONTRACT REGISTRATION #: PROJECT NAME:				CONTRACT #: TRADE: SHOP DRAWING LOG SHEET #				Contract 1 - GENERAL CONSTRUCTION							
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			SHOP DWG.	SAMPLE													CAT CUTS
321416	C. Shop Drawings 1. Immediately after award of Contract, prepare shop drawings showing all fabrication dimensions and locations for placing of the reinforcing steel and accessories. Follow detailing recommendations of ACI 315. Shop Drawings are to be prepared by a rebar detailer D. Quality Control Submittals 1. Design Data: Submit design mixes for concrete, including list of admixtures to be used, to the Testing Laboratory and the Engineer of Record. After approval and prior to placement, send the approved mix to the	X															
Addendum to the General Conditions January 01, 2014																	

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	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION
			SHOP DWG.	SAMPLE												

321416	Commissioner's laboratory. 2. Certificates Concrete producer's Computer Batch Ticket in accordance with Section BC 1905.8.2 of the 2008 NYC Building Code must be presented at site before concrete is placed for every load of concrete delivered. 3. Contractor Qualifications Provide proof of Installer, Producer, and Rebar Detailer qualifications	X																
330513	A. Product Data Submit manufacturer's product data on each of the following: 1. Each type of cast iron cover and frame 2. Each type of step/rung 3. Trap	X																

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			SHOP DWG.	SAMPLE												

330513	<p>4 Butyl Gasket</p> <p>5. Coating</p> <p>6. Non-shrink Grout</p> <p>B. Shop Drawings</p> <p>Before casting units, submit shop drawings of each item to be cast, showing details of all pipe entries, finish grades and other pertinent information. Ensure the orientation of the catch basin properly accounts for the required grating slot direction.</p> <p>C. Quality Control Submittals</p> <p>1. Design Data: Submit design mixes for concrete, including list of admixtures to be used, and preliminary trial mix test results.</p>	X															
Addendum to the General Conditions																	
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REPORT DATE		FMS ID #/PROJECT ID #: CONTRACT REGISTRATION #: PROJECT NAME:				CONTRACT #: TRADE: SHOP DRAWING LOG SHEET #											
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			SHOP DWG	SAMPLE													CATS

330513	<p>2. Test Reports: Daily testing logs.</p> <p>3. Certification: From testing laboratory that construction of the precast units is in compliance with the requirements of NYC DDC and DEP and this specification.</p> <p>4. Contractor Qualifications: Provide proof of Manufacturer and Concrete Laboratory qualifications specified under "Quality Assurance".</p>	X															
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REPORT DATE		FMS ID #/PROJECT ID #: CONTRACT REGISTRATION #: PROJECT NAME:		CONTRACT # Contract 1 - GENERAL CONSTRUCTION														
SPEC. SECT. #	DESCRIPTION	COORD. WITH CONTR.	SUBMITTAL	SHOP DWG.	SAMPLE	CAT CUTS	SUB. DATE	REQ'D DEL.	FABRIC. TIME	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION

334100	A. Product Data Furnish manufacturers' product data and installation instructions for the following: 1. Cast iron pipe and fittings 2. Ductile iron pipe and fittings 3. Reinforced concrete pipe and fittings 4. High Density Polyethylene pipe and fittings B. Quality Control Submittals 1. Certificates Submit certificate stating that pipe materials and fittings meet or exceed the specified requirements. 2. Contractor Qualifications Provide proof of Manufacturer and Pipe Installer qualifications specified under "Quality Assurance".	X																	
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APPENDIX

Phase I Environmental Site Assessment Report
Geotechnical Investigation Report

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121 Plymouth Street Paint Warehouse
Relocation to 424 Wythe Avenue Building Construction
DDC Project ID# HWKF029B

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GENERAL CONSTRUCTION WORK

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SECTION 022100

SELECTIVE REMOVALS & DEMOLITION

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

A. Extent of Work

Removal and demolition of selected items from selected areas of the project site as indicated on the Drawings; items to be removed include, but are not limited to, the following: asphalt pavement, concrete sidewalk, concrete curb, fences, guide rails, vegetation, utilities, fixtures, etc.

1.2 NOT APPLICABLE

1.3 RESPONSIBILITY, PROTECTION, DAMAGES, RESTRICTIONS

A. Condition of Space

The Commissioner assumes no responsibility for actual condition of the space in which removals and demolition Work is performed.

B. Protections

Provide temporary barricades and other forms of protection required to protect Commissioner property and general public from injury due to selective removals and demolition work.

1. Provide protective measures as required to provide free and safe passage of the general public.
2. Protect from damage existing finish work that is to remain in place and which becomes exposed during operations.

C. Damages

Promptly repair any and all damages to all existing property and finishes to remain caused by the removals and demolition work; to the Commissioner's satisfaction and at no extra cost to the Commissioner.

D. Explosives

The use of explosives is prohibited.

1.4 QUALITY ASSURANCE

A. Qualifications

1. Company specializing in performing the Work of this Section shall have a minimum of 3 years experience and shall have worked on 3 projects of similar size.
2. If required, the preparation of details of shoring and bracing and underpinning shall be under the direct supervision of and bear the seal of a Licensed Professional Engineer of the State of New York experienced in the design of such work, who shall also be responsible for construction supervision of such.

B. Regulatory Requirements

1. Work of this Section shall conform to all requirements of the NYC Building Code and all applicable regulations and guidelines of all governmental authorities having jurisdiction, including, but not limited to, safety, health, and anti-pollution regulations. Where more stringent requirements than those contained in the Building Code or other applicable regulations are given in this Section, the requirements of this Section shall govern.
2. Conform to the requirements of "Safety and Health Standards, Subpart P - Excavations, Trenching and Shoring" - OSHA.

PART 2 PRODUCTS – NOT APPLICABLE

PART 3 EXECUTION

3.1 INSPECTION

- A. Prior to commencement of the selective removals and demolition Work, inspect the areas in which the Work will be performed. Determine and list the existing conditions, and obtain photographic documentation of the project area. After the Work in each respective area is completed, determine if adjacent areas or properties have been damaged as a result of the Work; if so, the damage shall be corrected at the Contractor's expense.

3.2 REMOVALS AND DEMOLITION WORK

- A. Perform selective demolition Work in a systematic manner and use such methods as are required to complete the Work indicated, and in accordance with the Specifications and governing City, State, and Federal regulations.

3.3 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove debris, rubbish and other materials resulting from the removals and demolitions from the project site immediately; transport and legally dispose of materials off-site. Disposal method shall be in accordance with City, State, and Federal regulations.
- B. Burning of removed materials is not permitted on the job site.

3.4 CLEAN-UP AND REPAIR

- A. Upon completion of removals and demolition Work, remove tools, equipment and all remaining demolished materials from the site.

- B. Repair all damaged areas caused by the removals and demolition Work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.
- C. All areas in which Work was performed under this Section shall be left "broom-clean" if applicable.

END OF SECTION

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SECTION 033000

CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies cast-in place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
1. Footings.
 2. Foundation/pit walls.
 3. All concrete slabs on metal deck.
 4. Concrete toppings.
- B. Related Sections include the following:
1. Division 05 for structural steel and metal deck

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
1. Indicate amounts of mixing water to be withheld for later addition at Project site.

- C. **Steel Reinforcement Shop Drawings:** Placing drawings that detail fabrication, bending, and placement. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical connections, tie spacing, hoop spacing, and supports for concrete reinforcement.
- D. **Formwork Shop Drawings:** Prepared by or under the supervision of a qualified professional engineer detailing fabrication, assembly, and support of formwork.
- E. **Samples:** For waterstops, vapor retarder.
- F. **Qualification Data:** For Installer, manufacturer, testing agency.
- G. **Material Test Reports:** For the following, from a qualified testing agency, indicating compliance with requirements:
 - 1. **Aggregates.** Include service record data indicating absence of deleterious expansion of concrete due to alkali aggregate reactivity.
- H. **Material Certificates:** For each of the following, signed by manufacturers:
 - 1. Cementitious materials.
 - 2. Admixtures.
 - 3. Form materials and form-release agents.
 - 4. Steel reinforcement and accessories.
 - 5. Waterstops.
 - 6. Curing compounds.
 - 7. Floor and slab treatments.
 - 8. Bonding agents.
 - 9. Adhesives.
 - 10. Vapor retarders.
 - 11. Semirigid joint filler.
 - 12. Joint-filler strips.
 - 13. Repair materials.

- I. Floor surface flatness and levelness measurements to determine compliance with specified tolerances.
- J. Field quality-control test and inspection reports.
- K. Minutes of preinstallation conference.

1.5 QUALITY ASSURANCE

- A. **Installer Qualifications:** A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. **Manufacturer Qualifications:** A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
 - 1. Manufacturer certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities."
- C. **Testing Agency Qualifications:** An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated, as documented according to ASTM E 548.
 - 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-01 or an equivalent certification program.
 - 2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.
- D. **Source Limitations:** Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from one source, and obtain admixtures through one source from a single manufacturer.
- E. **ACI Publications:** Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specification for Structural Concrete," Sections 1 through 5".
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- F. **Concrete Testing Service:** Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- G. **Mockups:** See Section 03 33 00 Architectural concrete for mockup requirements.
- H. **Preinstallation Conference:** Conduct conference at Project site to comply with requirements

in Division 01 Section "Project Management and Coordination."

1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:
 - a. Contractor's superintendent.
 - b. Independent testing agency responsible for concrete design mixtures.
 - c. Ready-mix concrete manufacturer.
 - d. Concrete subcontractor.
 - e. Admixture supplier
2. Review special inspection and testing and inspecting agency procedures for field quality control, concrete finishes and finishing, cold- and hot-weather concreting procedures, curing procedures, construction contraction and isolation joints, and joint-filler strips, semirigid joint fillers, forms and form removal limitations, shoring and reshoring procedures, vapor-retarder installation, embedded items and anchorage device installation tolerances, steel reinforcement installation, floor and slab flatness and levelness measurement, concrete repair procedures, and concrete protection.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.
- B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
 1. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, products specified.
 2. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.

2.2 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
 - 1. Plywood, metal, or other approved panel materials.
 - 2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
 - a. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
- B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.
- C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch minimum.
- D. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.
- E. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
 - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.
- F. Form Ties: Factory-fabricated, removable or snap-off metal or glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 - 1. Furnish units that will leave no corrodible metal closer than 1 inch to the plane of exposed concrete surface.
 - 2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.
 - 3. Furnish ties with integral water-barrier plates to walls indicated to receive dampproofing or waterproofing.

2.3 STEEL REINFORCEMENT

- A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 deformed.
- B. Low-Alloy-Steel Reinforcing Bars: ASTM A 706/A 706M, deformed.

- C. Steel Bar Mats: ASTM A 184/A 184M, fabricated from ASTM A 615/A 615M, Grade 60 deformed bars, assembled with clips.
- D. Plain-Steel Wire: ASTM A 82, as drawn
- E. Deformed-Steel Wire: ASTM A 496.
- F. Plain-Steel Welded Wire Reinforcement: ASTM A 185, plain, fabricated from as-drawn steel wire into flat sheets.

2.4 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut bars true to length with ends square and free of burrs.
- B. Epoxy-Coated Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, ASTM A 775/A 775M epoxy coated.
- C. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
 - 1. For concrete surfaces exposed to view where legs of wire bar supports contact forms, use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.

2.5 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
 - 1. Portland Cement: ASTM C 150, Type II gray Supplement with the following:
 - a. Fly Ash: ASTM C 618, Class F.
 - b. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.
- B. Silica Fume: ASTM C 1240, amorphous silica.
- C. Normal-Weight Aggregates: ASTM C 33, Class 4S or 4M coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 10 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.
 - 1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
- D. Lightweight Aggregate: ASTM C 330.

1. Nominal Maximum Aggregate Size: 3/4 inch

E. Fine Aggregate:

1. Free of materials with deleterious reactivity to alkali in cement.

F. Water: ASTM C 94/C 94M and potable.

2.6 ADMIXTURES

A. Air-Entraining Admixture: ASTM C 260.

B. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
2. Retarding Admixture: ASTM C 494/C 494M, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.

C. Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete and complying with ASTM C 494/C 494M, Type C.

1. Available Products:
 - a. Boral Material Technologies, Inc.; Boral BCN.
 - b. Euclid Chemical Company (The); Eucon CIA.
 - c. Grace Construction Products, W. R. Grace & Co.; DCI.
 - d. Master Builders, Inc.; Rheocrete CNI.
 - e. Sika Corporation; Sika CNI.

- D. **Non-Set-Accelerating Corrosion-Inhibiting Admixture:** Commercially formulated, non-set-accelerating, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete.

1. Available Products:

- a. Axim Concrete Technologies; Catexol 1000CI.
- b. Boral Material Technologies, Inc.; Boral BCN2.
- c. Cortec Corporation; MCI 2000 or 2005NS.
- d. Grace Construction Products, W. R. Grace & Co.; DCI-S.
- e. Master Builders, Inc.; Rheocrete 222+.
- f. Sika Corporation; FerroGard-901.

2.7 WATERSTOPS

- A. **Flexible Rubber Waterstops:** CE CRD-C 513, with factory-installed metal eyelets, for embedding in concrete to prevent passage of fluids through joints. Factory fabricate corners, intersections, and directional changes.

1. Available Manufacturers:

- a. Greenstreak.
- b. Progress Unlimited, Inc.
- c. Williams Products, Inc.

2. Profile: Ribbed without center bulb.

3. Dimensions: 4 inches by 3/16 inch thick

2.8 VAPOR RETARDERS

- A. **Plastic Vapor Retarder:** ASTM E 1745, Class C, or polyethylene sheet, ASTM D 4397, not less than 10 mils thick. Include manufacturer's recommended adhesive or pressure-sensitive joint tape.

1. Available Products:

- a. Fortifiber Corporation; Moistop Plus.
- b. Raven Industries Inc.; Dura Skrim 6.

- c. Reef Industries, Inc.; Griffolyn Type-65.
 - d. Stego Industries, LLC; Stego Wrap, 10 mils.
- B. Bituminous Vapor Retarder: 110-mil thick, semiflexible, 7-ply sheet membrane consisting of reinforced core and carrier sheet with fortified asphalt layers, protective weathercoating, and removable plastic release liner. Furnish manufacturer's accessories including bonding asphalt, pointing mastics, and self-adhering joint tape.
1. Product: Meadows, W. R., Inc.; Premoulded Membrane Vapor Seal.
 2. Water-Vapor Permeance: 0.00 grains/h x sq. ft. x inches Hg ASTM E 154.
 3. Tensile Strength: 140 lbf/in. ASTM E 154.
 4. Puncture Resistance: 90 lbf ; ASTM E 154.
- C. Granular Fill: Clean mixture of crushed stone or crushed or uncrushed gravel; ASTM D 448, Size 57, with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.

2.9 FLOOR AND SLAB TREATMENTS

- A. Slip-Resistive Emery Aggregate Finish: Factory-graded, packaged, rustproof, nonglazing, abrasive, crushed emery aggregate containing not less than 50 percent aluminum oxide and not less than 20 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials with 100 percent passing 3/8-inch No. 4, No. 8 sieve.
1. Available Products:
 - a. Anti-Hydro International, Inc.; Emery.
 - b. Dayton Superior Corporation; Emery Non-Slip.
 - c. Emeri-Crete, Inc.; Emeri-Topcrete.
 - d. Lambert Corporation; EMAG-20.
 - e. L&M Construction Chemicals, Inc.; Grip It.
 - f. Metalcrete Industries; Metco Anti-Skid Aggregate.
- B. Slip-Resistive Aluminum Granule Finish: Factory-graded, packaged, rustproof, nonglazing, abrasive aggregate of not less than 95 percent fused aluminum-oxide granules.
1. Available Products:
 - a. Anti-Hydro International, Inc.; A-H Alox.

- b. L&M Construction Chemicals, Inc.; Grip It AO.
 - c. Sonneborn, Div. of ChemRex; Frictex NS.
- C. Metallic Dry-Shake Floor Hardener: Unpigmented, factory-packaged, dry combination of portland cement, graded metallic aggregate, rust inhibitors, and plasticizing admixture; with metallic aggregate consisting of no less than 65 percent of total aggregate content.

2.10 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

1. Available Products:

- a. Axim Concrete Technologies; Cimfilm.
- b. Burke by Edoco; BurkeFilm.
- c. ChemMasters; Spray-Film.
- d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; Aquafilm.
- e. Dayton Superior Corporation; Sure Film.
- f. Euclid Chemical Company (The); Eucobar.
- g. Kaufman Products, Inc.; Vapor Aid.
- h. Lambert Corporation; Lambco Skin.
- i. L&M Construction Chemicals, Inc.; E-Con.
- j. MBT Protection and Repair, Div. of ChemRex; Confilm.
- k. Meadows, W. R., Inc.; Sealtight Evapre.
- l. Metalcrete Industries; Waterhold.
- m. Nox-Crete Products Group, Kinsman Corporation; Monofilm.
- n. Sika Corporation, Inc.; SikaFilm.
- o. Symons Corporation, a Dayton Superior Company; Finishing Aid.

- p. Unitex; Pro-Film.
 - q. US Mix Products Company; US Spec Monofilm ER.
 - r. Vexcon Chemicals, Inc.; Certi-Vex EnvioAssist.
- B. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.
- C. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- D. Water: Potable.
- E. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.
- 1. Available Products:
 - a. Anti-Hydro International, Inc.; AH Curing Compound #2 DR WB.
 - b. Burke by Edoco; Aqua Resin Cure.
 - c. ChemMasters; Safe-Cure Clear.
 - d. Conspec Marketing & Manufacturing Co., Inc., a Dayton Superior Company; W.B. Resin Cure.
 - e. Dayton Superior Corporation; Day Chem Rez Cure (J-11-W).
 - f. Euclid Chemical Company (The); Kurez DR VOX.
 - g. Kaufman Products, Inc.; Thinfilm 420.
 - h. Lambert Corporation; Aqua Kure-Clear.
 - i. L&M Construction Chemicals, Inc.; L&M Cure R.
 - j. Meadows, W. R., Inc.; 1100 Clear.
 - k. Nox-Crete Products Group, Kinsman Corporation; Resin Cure E.
 - l. Symons Corporation, a Dayton Superior Company; Resi-Chem Clear Cure.
 - m. Tamms Industries, Inc.; Horncure WB 30.
 - n. Unitex; Hydro Cure 309.

- o. US Mix Products Company; US Spec Maxcure Resin Clear.
- p. Vexcon Chemicals, Inc.; Certi-Vex Enviocure 100.

2.11 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self-expanding cork.
- B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, epoxy resin with a Type A shore durometer hardness of 80 per ASTM D 2240.
- C. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- D. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
 - 1. Types I and II, non-load bearing, IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.
- E. Reglets: Fabricate reglets of not less than 0.0217-inch thick, galvanized steel sheet. Temporarily fill or cover face opening of reglet to prevent intrusion of concrete or debris.
- F. Dovetail Anchor Slots: Hot-dip galvanized steel sheet, not less than 0.0336 inch thick, with bent tab anchors. Temporarily fill or cover face opening of slots to prevent intrusion of concrete or debris.

2.12 REPAIR MATERIALS

- A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
 - 1. Cement Binder: ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
 - 2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
 - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
 - 4. Compressive Strength: Not less than **4000 psi** at 28 days when tested according to ASTM C 109/C 109M.

- B. **Repair Overlayment:** Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.
1. **Cement Binder:** ASTM C 150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
 2. **Primer:** Product of topping manufacturer recommended for substrate, conditions, and application.
 3. **Aggregate:** Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.
 4. **Compressive Strength:** Not less than **4000 psi** at 28 days when tested according to ASTM C 109/C 109M.

2.13 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. **Cementitious Materials:** Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
1. Fly Ash: 25 percent.
 2. Combined Fly Ash and Pozzolan: 25 percent.
 3. Ground Granulated Blast-Furnace Slag: 50 percent.
 4. Combined Fly Ash or Pozzolan and Ground Granulated Blast-Furnace Slag: 50 percent portland cement minimum, with fly ash or pozzolan not exceeding 25 percent.
 5. Silica Fume: 10 percent.
 6. Combined Fly Ash, Pozzolans, and Silica Fume: 35 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.
 7. Combined Fly Ash or Pozzolans, Ground Granulated Blast-Furnace Slag, and Silica Fume: 50 percent with fly ash or pozzolans not exceeding 25 percent and silica fume not exceeding 10 percent.
- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.06 percent by weight of cement.

- D. Admixtures: Use admixtures according to manufacturer's written instructions.
1. Use water-reducing, high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
 3. Use water-reducing admixture in pumped concrete, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.
 4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.

2.14 CONCRETE MIXTURES FOR BUILDING ELEMENTS

- A. Footings: Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 4000 psi at 28 days.
 2. Maximum Water-Cementitious Materials Ratio: 0.50
 3. Slump Limit: 4 inches or 8 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture, plus or minus 1 inch.
- B. Foundation Walls: Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 4000 psi at 28 days (except portion of foundation walls that are a part of the shear wall system).
 2. Maximum Water-Cementitious Materials Ratio: 0.45
 3. Slump Limit: 4 inches or 8 inches for concrete with verified slump of 2 to 4 inches before adding high-range water-reducing admixture or plasticizing admixture plus or minus 1 inch.
- C. Slabs-on-Grade: Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 4000 psi at 28 days.
 2. Minimum Cementitious Materials Content: 540 lb/cu. yd.
 3. Slump Limit: 4 inches plus or minus 1 inch .
 4. Air Content: Do not allow air content of troweled finished floors to exceed 3 percent.
- D. Slabs on Metal Decks: Proportion light weight concrete mixture as follows:

1. Minimum Compressive Strength: 4000 psi at 28 days.
 2. Slump Limit: 4, plus or minus 1 inch.
 3. Air Content: Do not allow air content of troweled finished toppings to exceed 3 percent.
- E. Concrete Toppings: Proportion normal-weight concrete mixture as follows:
1. Minimum Compressive Strength: 4000 psi at 28 days.
 2. Minimum Cementitious Materials Content: 540 lb/cu. yd.
 3. Slump Limit: 4 inches plus or minus 1 inch.
 4. Air Content: Do not allow air content of troweled finished toppings to exceed 3 percent.

2.15 FABRICATING REINFORCEMENT

- A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.16 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M, and furnish batch ticket information.
1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F reduce mixing and delivery time to 60 minutes.

PART 3 EXECUTION

3.1 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347R as abrupt or gradual, as follows:
1. Class A, 1/8 inch for smooth-formed finished surfaces.

2. Class B, 1/4 inch for rough-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
1. Install keyways, reglets, recesses, and the like, for easy removal.
 2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. Chamfer exterior corners and edges of permanently exposed concrete.
- I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.2 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
1. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC's "Code of Standard Practice for Steel Buildings and Bridges."
 2. Install reglets to receive waterproofing and to receive through-wall flashings in outer face of concrete frame at exterior walls, where flashing is shown at lintels, shelf

angles, and other conditions.

3. Install dovetail anchor slots in concrete structures as indicated.

3.3 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of beams, walls, columns, and similar parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete, if concrete is hard enough to not be damaged by form-removal operations and curing and protection operations are maintained.
 1. Leave formwork for beam soffits, joists, slabs, and other structural elements that supports weight of concrete in place until concrete has achieved at least 75 percent of its 28-day design compressive strength.
 2. Remove forms only if shores have been arranged to permit removal of forms without loosening or disturbing shores.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Commissioner. .

3.4 SHORES AND RESHORES

- A. Comply with ACI 318 and ACI 301 for design, installation, and removal of shoring and reshoring.
 1. Do not remove shoring or reshoring until measurement of slab tolerances is complete.
- B. In multistory construction, extend shoring or reshoring over a sufficient number of stories to distribute loads in such a manner that no floor or member will be excessively loaded or will induce tensile stress in concrete members without sufficient steel reinforcement.
- C. Plan sequence of removal of shores and reshore to avoid damage to concrete. Locate and provide adequate reshoring to support construction without excessive stress or deflection.

3.5 VAPOR RETARDERS

- A. Plastic Vapor Retarders: Place, protect, and repair vapor retarders according to ASTM E 1643 and manufacturer's written instructions.
 1. Lap joints 6 inches and seal with manufacturer's recommended tape.
- B. Bituminous Vapor Retarders: Place, protect, and repair vapor retarders according to

manufacturer's written instructions.

- C. Granular Course: Cover vapor retarder with fine-graded granular material, moisten, and compact with mechanical equipment to elevation tolerances of plus 0 inch or minus 3/4 inch.

3.6 STEEL REINFORCEMENT

- A. General: Comply with CRSI's "Manual of Standard Practice" for placing reinforcement.
 - 1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that would reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.
- E. Install welded wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction.

3.7 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Commissioner.
 - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints, unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
 - 2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
 - 3. Locate joints for beams, slabs, joists, and girders in the middle third of spans. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
 - 4. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
 - 5. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.

6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
 7. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. **Contraction Joints in Slabs-on-Grade:** Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of concrete thickness as follows:
1. **Grooved Joints:** Form contraction joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch Repeat grooving of contraction joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.
 2. **Sawed Joints (in slabs on grade only):** Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
- D. **Isolation Joints in Slabs-on-Grade:** After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.
1. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface, unless otherwise indicated.
- E. **Doweled Joints:** Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.8 WATERSTOPS

- A. **Flexible Waterstops:** Install in construction joints and at other joints indicated to form a continuous diaphragm. Install in longest lengths practicable. Support and protect exposed waterstops during progress of the Work. Field fabricate joints in waterstops according to manufacturer's written instructions.

3.9 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by Commissioner.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- C. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete will be placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
1. Deposit concrete in horizontal layers of depth to not exceed formwork design pressures and in a manner to avoid inclined construction joints.
 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- D. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 2. Maintain reinforcement in position on chairs during concrete placement.
 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
 4. Slope surfaces uniformly to drains where required.
 5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.
- E. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- F. Hot-Weather Placement: Comply with ACI 301 and as follows:
1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
 2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

3.10 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces not exposed to public view.
- B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, to be covered with a coating or covering material applied directly to concrete.
- C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete where indicated:
1. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.
 2. Grout-Cleaned Finish: Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.
 3. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix one part portland cement and one part fine sand with a 1:1 mixture of bonding agent and water. Add white portland cement in amounts determined by trial patches so color of dry

grout will match adjacent surfaces. Compress grout into voids by grinding surface. In a swirling motion, finish surface with a cork float.

- D. **Related Unformed Surfaces:** At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.11 FINISHING FLOORS AND SLABS

- A. **General:** Comply with ACI 302.1R recommendations for screeding, restraighening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. **Scratch Finish:** While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch in 1 direction.
 - 1. Apply scratch finish to surfaces indicated and to receive concrete floor toppings and to receive mortar setting beds for bonded cementitious floor finishes
- C. **Float Finish:** Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraighening until surface is left with a uniform, smooth, granular texture.
 - 1. Apply float finish to surfaces indicated to receive trowel finish and to be covered with fluid-applied or sheet waterproofing, built-up or membrane roofing, or sand-bed terrazzo.
- D. **Trowel Finish:** After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings.
 - 1. Apply a trowel finish to surfaces indicated exposed to view or to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system.
 - 2. Finish surfaces to the following tolerances, according to ASTM E 1155. for a randomly trafficked floor surface:
 - a. Specified overall values of flatness, F(F) 25; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 17; and of levelness, F(L) 15.
 - b. Specified overall values of flatness, F(F) 35; and of levelness, F(L) 25; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 17; for slabs-on-grade.

- c. Specified overall values of flatness, F(F) 30; and of levelness, F(L) 20; with minimum local values of flatness, F(F) 24; and of levelness, F(L) 15; for suspended slabs.
 - d. Specified overall values of flatness, F(F) 45; and of levelness, F(L) 35; with minimum local values of flatness, F(F) 30; and of levelness, F(L) 24.
- E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated where ceramic or quarry tile is to be installed by either thickset or thin-set method. While concrete is still plastic, slightly scarify surface with a fine broom.
- 1. Comply with flatness and levelness tolerances for trowel finished floor surfaces.
- F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
- 1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Commissioner before application.
- G. Slip-Resistive Finish: Before final floating, apply slip-resistive aggregate finish where indicated and to concrete stair treads, platforms, and ramps. Apply according to manufacturer's written instructions and as follows:
- 1. Uniformly spread 25 lb/100 sq. ft. of dampened slip-resistive aggregate over surface in 1 or 2 applications. Tamp aggregate flush with surface, but do not force below surface.
 - 2. After broadcasting and tamping, apply float finish.
 - 3. After curing, lightly work surface with a steel wire brush or an abrasive stone and water to expose slip-resistive aggregate

3.12 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures, unless otherwise indicated, after work of other trades is in place. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.
- C. Equipment Bases and Foundations: Provide machine and equipment bases and foundations as shown on Drawings. Set anchor bolts for machines and equipment at correct elevations, complying with diagrams or templates from manufacturer furnishing machines and equipment.

- D. **Steel Pan Stairs:** Provide concrete fill for steel pan stair treads, landings, and associated items. Cast-in inserts and accessories as shown on Drawings. Screed, tamp, and trowel-finish concrete surfaces.

3.13 CONCRETE PROTECTING AND CURING

- A. **General:** Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- B. **Evaporation Retarder:** Apply evaporation retarder to unformed concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
- C. **Formed Surfaces:** Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
- D. **Unformed Surfaces:** Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- E. **Cure concrete according to ACI 308.1, by one or a combination of the following methods:**
 - 1. **Moisture Curing:** Keep surfaces continuously moist for not less than seven days with the following materials:
 - a. Water.
 - b. Continuous water-fog spray.
 - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
 - 2. **Moisture-Retaining-Cover Curing:** Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 - a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
 - b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.

- c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies will not interfere with bonding of floor covering used on Project..
- 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
 - a. After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer unless manufacturer certifies curing compound will not interfere with bonding of floor covering used on Project.
- 4. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

3.14 JOINT FILLING

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
 - 1. Defer joint filling until concrete has aged at least one month. Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.
- C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.15 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Commissioner. Remove and replace concrete that cannot be repaired and patched to Commissioner's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
 - 1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more

than 1/2 inch in any dimension in solid concrete, but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area 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. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Commissioner.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
 2. After concrete has cured at least 14 days, correct high areas by grinding.
 3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
 4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
 5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
 6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Commissioner's approval, using epoxy adhesive and patching mortar.
 - F. Repair materials and installation not specified above may be used, subject to Commissioner's approval.

3.16 FIELD QUALITY CONTROL

- A. **Testing and Inspecting:** Commissioner will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.
- B. **Inspections:**
 1. Steel reinforcement placement.
 2. Steel reinforcement welding.
 3. Headed bolts and studs.
 4. Verification of use of required design mixture.
 5. Concrete placement, including conveying and depositing.
 6. Curing procedures and maintenance of curing temperature.
 7. Verification of concrete strength before removal of shores and forms from beams and slabs.
- C. **Concrete Tests:** Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
 1. **Testing Frequency:** Obtain at least one composite sample for each 100 cu. yd. or fraction thereof of each concrete mixture placed each day.
 - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
 2. **Slump:** ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture.

Perform additional tests when concrete consistency appears to change.

3. Air Content: ASTM C 231, pressure method, for normal-weight concrete; ASTM C 173/C 173M, volumetric method, for structural lightweight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31/C 31M.
 - a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
 - b. Cast and field cure two sets of two standard cylinder specimens for each composite sample.
6. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
 - a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
 - b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
7. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
8. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
9. Test results shall be reported in writing to Commissioner, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
10. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Commissioner but will not be used as sole basis for approval or rejection of concrete.

11. **Additional Tests:** Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Architect.
12. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
13. Correct deficiencies in the Work that test reports and inspections indicate dos not comply with the Contract Documents.

END OF SECTION

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SECTION 042000

UNIT MASONRY

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. Work of this Section includes all labor, materials, equipment and services necessary to complete the masonry work as indicated on the drawings and/or specified herein including, but not limited to, the following:
 - 1. Concrete block walls.
 - 2. Ground face concrete walls.
 - 3. Metal joint reinforcing, anchors, ties, weeps, pea gravel and related accessories for masonry.
 - 4. Control joints in masonry, filled with joint fillers.
 - 5. Chases, recesses, pockets and openings in masonry as required for installation of work by others.
 - 6. Building of items furnished by others into masonry, including access doors, door frames, anchors, sleeves and inserts, and other similar items to be embedded in masonry.
 - 7. Grouting in of metal items built into masonry work.
 - 8. Protection, painting and cleaning of masonry.

1.3 RELATED SECTIONS

- A. Joint sealers – Section 079200.

1.4 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product data for each different masonry unit, accessory, and other manufactured product indicated.
- C. Shop drawings for clay units showing type, dimension and location of each unit required.
- D. Shop drawing indicating control joint location and details.

- E. Shop drawings for reinforcing detailing fabrication, bending, and placement of unit masonry reinforcing bars. Comply with ACI 315 "Details and Detailing of Concrete Reinforcing" showing bar schedules, stirrup spacing, diagrams of bent bars, and arrangement of masonry reinforcement.
- F. Samples For Initial Selection Purposes of the Following
1. Unit masonry samples showing full extent of colors and textures available for each different exposed masonry unit required.
 2. Colored masonry mortar samples showing full extent of colors available.
- G. Samples For Verification Purposes of the Following
1. Full-size units for each different exposed masonry unit required showing full range of exposed color, texture, and dimensions to be expected in completed construction.
 2. Colored masonry mortar samples for each color required showing the full range of colors expected in the finished construction. Label samples to indicate type and amount of colorant used.
 3. Joint reinforcing, each type, width and proposed locations (labeled).
 4. Anchors, wedges and ties, each type, width and proposed locations (labeled).
 5. Joint filler, each type.
 6. Flashing, including splice sample, 12" x 12".
- H. Preconstruction Testing: Contractor shall employ and pay a qualified independent testing laboratory to perform the following preconstruction testing indicated as well as other inspecting and testing services required by referenced unit masonry standard or indicated herein for source and field quality control:
1. Concrete Masonry Unit Tests: For each different concrete masonry unit indicated, units will be tested for strength, absorption, and moisture content per ASTM C 140.
 2. Prism Tests: For each type of wall construction indicated, masonry prisms will be tested per ASTM E 447, Method B.
 3. Mortar properties will be tested per property specification of ASTM C 270.
 4. Mortar composition and properties will be evaluated per ASTM C 780.
 5. Grout compressive strength will be tested per ASTM C 1019.
- I. Single-Source Responsibility for Masonry Units: Obtain exposed masonry units of uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one manufacturer for each different product required for each continuous surface of visually related surfaces.

- J. Single-Source Responsibility for Mortar Materials: Obtain mortar ingredients of uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source and producer for each aggregate.
- K. Material certificates for the following signed by manufacturer and Contractor certifying that each material complies with requirements.
 - 1. Each different cement product required for mortar and grout including name of manufacturer, brand, type, and weight slips at time of delivery.
 - 2. Each material and grade indicated for reinforcing bars.
 - 3. Each type and size of joint reinforcement.
 - 4. Each type and size of anchors, ties, and metal accessories.
- L. Material test reports from a qualified independent testing laboratory employed and paid by Contractor indicating and interpreting test results relative to compliance of the following proposed masonry materials with requirements indicated:
 - 1. Mortar complying with property requirements of ASTM C 270.
 - 2. Grout mixes. Include description of type and proportions of grout ingredients.
 - 3. Masonry units.
- M. Cold-weather construction procedures evidencing compliance with requirements specified in referenced unit masonry standard.
- N. Hot-weather construction procedures evidencing compliance with requirements specified in referenced unit masonry standard.
- O. Results from tests and inspections performed by Contractor's Testing Laboratory shall be reported promptly and in writing to the Commissioner.

1.5 QUALITY ASSURANCE

- A. Conform to the following non-cumulative tolerances (any masonry work not meeting these standards shall be re-built at no additional cost to the City of New York).
 - 1. Variations From the Plumb
 - a. In lines and surfaces of columns, wall and arrises:
 - 1). In 10 feet 1/4"
 - 2). In any story of 25 feet maximum 3/8"
 - 3). In 40 feet or more 1/2"
 - 2. Variation from the level or the grades indicated on the drawings; for exposed lintels, sills, parapets, horizontal grooves and other conspicuous lines:
 - a. In any bay or 20 feet maximum 1/4"
 - b. In 40 feet or more 1/2"

3. Variation of the linear building lines from established position in plan related portion of columns and partitions:
 - a. In any bay or 20 feet maximum 1/2"
 - b. In 40 feet or more 3/4"
4. Variations in cross-sectional dimensions of columns and in thickness of walls:
 - a. Minus 1/4"
 - b. Plus 1/2"
5. Variation in dimensions of masonry openings:
 - a. Horizontal dimension +/- 1/8"
 - b. Vertical dimension +/- 1/8"

B. Work of this Section shall conform to the requirements of the following:

1. ACI 530/ASCE 5 Building Code Requirements for Masonry Structures.
2. ACI 530-1/ASCE 6 Specifications for Masonry Structures.

C. Pre-Construction Conference: Prior to installation of masonry and associated work, Contractor shall arrange a meeting with Masonry Subcontractor, installers of related work, and other entities concerned with masonry wall performance, including the Commissioner and City of New York. Contractor shall record discussions and agreements and furnish copy to each participant. Provide at least seventy-two (72) hours' advance notice to participants prior to convening conference. Review methods and procedures related to masonry work, including, but not limited to, the following:

1. Review masonry requirements (drawings, specifications and other Contract Documents).
2. Review required submittals, both completed and yet to be completed.
3. Review and finalize construction schedule related to masonry work and verify availability of materials, installer's personnel, equipment and facilities needed to make progress and avoid delays.
4. Review required inspection, testing, certifying and material usage accounting procedures.
5. Review weather and forecasted weather conditions, and procedures for coping with unfavorable conditions.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver masonry materials to project in undamaged condition.
- B. Store and handle masonry units off the ground, under cover, and in a dry location to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion, and other causes. If units become wet, do not place until units are in an air-dried condition.

- C. Store cementitious materials off the ground, under cover, and in dry location.
- D. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
- E. Store masonry accessories including metal items to prevent corrosion and accumulation of dirt and oil.
- F. Palettes of clay units shall be double plastic wrapped for shipping.

1.7 PROJECT CONDITIONS

- A. Protection of Masonry: During erection, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.
 - 1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.
 - 2. Where one wythe of multi-wythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.
- B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls or columns.
- C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Remove immediately any grout, mortar, and soil that come in contact with such masonry.
 - 1. Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface.
 - 2. Protect sills, ledges, and projections from mortar droppings.
 - 3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes from mortar droppings.
- D. Cold-Weather Construction: Comply with referenced unit masonry standard for cold-weather construction and the following:
 - 1. Do not lay masonry units that are wet or frozen.
 - 2. Remove masonry damaged by freezing conditions.
- E. Hot-Weather Construction: Comply with referenced unit masonry standard.

PART 2 PRODUCTS

2.1 MATERIALS, GENERAL

- A. Comply with referenced unit masonry standard and other requirements specified in this Section applicable to each material indicated.

2.2 CONCRETE MASONRY UNITS (CMU)

- A. General: Comply with requirements indicated below applicable to each form of concrete masonry units required.
1. Provide special shapes where indicated and as follows:
 - a. For lintels, corners, jambs, sash, control joints, headers, bonding, and other special conditions.
 - b. Closed end units for outside corners unless otherwise indicated.
 2. Size: Provide concrete masonry units complying with requirements indicated below for size that are manufactured to specified face dimensions within tolerances specified in the applicable referenced ASTM specification for concrete masonry units.
 - a. Concrete Masonry Units: Manufactured to specified dimensions of 3/8 inch less than nominal widths by nominal heights by nominal lengths indicated on drawings.
 - 1). Standard Modular: 7-5/8 inches high by 15-5/8 inches long widths as shown on drawings.
 3. Provide Type I, moisture-controlled units.
 4. Exposed Faces: Manufacturer's standard color and texture, unless otherwise indicated.
- B. Hollow and Solid Load-Bearing Concrete Masonry Units: ASTM C 90 and as follows:
1. Unit Compressive Strength: Provide units with minimum average net area compressive strength as indicated in General Notes.
 2. Weight Classification: See General Notes.
 3. The producer of the concrete masonry units shall furnish certification from an independent testing laboratory confirming that all 8" or larger masonry units meet all of the UL-618 requirements for two (2) hours or better (as required), referencing full scale fire test reports (ASTM E 119). All 4" and 6" units shall conform to "National Bureau of Standards" and "National Research Council" full scale fire tests.
- C. Specialty Blocks:
1. Ground Face CMU: Trendstone and Trendstone Plus by Trenwyth with integral waterproofing additive and sealers or approved equal by Clayton, Anchor or Fizzano Block.

2.3 MORTAR AND GROUT MATERIALS

- A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce required mortar color.
1. For colored pigmented mortars use premixed colored Portland/Lime cement mortar of formulation required to produce color.

2. All exposed masonry mortar shall be of color selected by Commissioner.
- B. Ready-Mixed Mortar: Cementitious materials, water, and aggregate complying with requirements specified in this article, combined with set-controlling admixtures to produce a ready-mixed mortar complying with ASTM C 1142.
 - C. Hydrated Lime: ASTM C 207, Type S.
 - D. Aggregate for Mortar: ASTM C 144, except for joints less than 1/4 inch use aggregate graded with 100 percent passing the No. 16 sieve.
 1. Colored Mortar Aggregates: Ground marble, granite, or other sound stone, as required to match sample approved by the Commissioner.
 - E. Aggregate for Grout: ASTM C 404.
 - F. Colored Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes. Use only pigments with record of satisfactory performance in masonry mortars.
 - G. Water: Clean and drinkable.
 - H. Products: Subject to compliance with requirements, provide one of the following:
 1. Colored Mortar
 - a. "Colorbond Custom Color Masonry Cement," Centurion.
 - b. "Atlas Custom Color Masonry Cement," Lehigh Portland Cement Co.
 - c. "Colored Mortar", Davis colors
 - d. or approved equal.
 2. Colored Mortar Pigments
 - a. "Centurion Pigments," Centurion.
 - b. "True Tone Mortar Colors," Davis Colors, A Subsidiary of Rockwood Industries, Inc.
 - c. "SGS Mortar Colors," Solomon Grind-Chem Services, Inc.
 - d. or approved equal.

2.4 REINFORCING STEEL

- A. General: Provide reinforcing steel complying with requirements of referenced unit masonry standard and this article.
- B. Steel Reinforcing Bars: Material and grade as follows:
 1. Billet steel complying with ASTM A 615.
 2. Grade 60.
- C. Deformed Reinforcing Wire: ASTM A 496.
- D. Plain Welded Wire Fabric: ASTM A 185.

- E. Deformed Welded Wire Fabric: ASTM A 497.

2.5 JOINT REINFORCEMENT

- A. General: Provide joint reinforcement for concrete block complying with requirements of referenced unit masonry standard and this article, formed from the following:
1. Galvanized carbon steel wire, coating class as required by referenced unit masonry standard for application indicated.
- B. Description: Welded-wire units prefabricated with deformed continuous side rods and plain cross rods into straight lengths of not less than 10 feet, with prefabricated corner and tee units, and complying with requirements indicated below:
1. Wire Diameter for Side Rods: 0.1483 inch (9 gage).
 2. Wire Diameter for Cross Rods: 0.1483 (9 gage).
 3. For single-wythe masonry provide type as follows with single pair of side rods:
 - a. Truss design with continuous diagonal cross rods spaced not more than 16 inches o.c.
- C. Manufacturers: Subject to compliance with requirements, provide joint reinforcement by one of the following:
1. AA Wire Products Co.
 2. Dur-O-Wal, Inc.
 3. Heckman Building Products, Inc.
 4. Hohmann & Barnard, Inc.
 5. Masonry Reinforcing Corp. of America.
 6. National Wire Products Industries.
 7. Southern Construction Products, Inc.
 8. Or approved equal.

2.6 TIES AND ANCHORS, GENERAL

- A. General: Provide ties and anchors specified in subsequent articles that comply with requirements for metal and size of referenced unit masonry standard and of this article.
- B. Galvanized Carbon Steel Wire: ASTM A 82, coating class as required by referenced unit masonry standard for application indicated.
- C. Galvanized Steel Sheet: As follows:

1. ASTM A 526 (commercial quality), Coating Designation G60, steel sheet zinc-coated by hot-dip process on continuous lines prior to fabrication, for sheet metal ties and anchors completely embedded in mortar.
 2. ASTM A 366 (commercial quality) cold-rolled carbon steel sheet hot-dip galvanized after fabrication to comply with ASTM A 153, Class B2 (for unit lengths over 15 inches) and Class B3 (for unit lengths under 15 inches), for sheet metal ties and anchors exposed to the weather and not completely embedded in mortar and grout.
- D. Galvanized Steel Sheet: ASTM A 366 (commercial quality) cold-rolled carbon steel sheet, hot-dip galvanized after fabrication to comply with ASTM A 525, CB2 (for unit lengths over 15 inches) and Class B3 (for unit lengths under 15 inches), for sheet metal ties and anchors.
- E. Galvanized Heavy-Thickness Steel Sheet: ASTM A 635 (commercial quality) hot-rolled carbon steel sheet hot-dip galvanized after fabrication to comply with ASTM A 526, Class B3, for rigid anchors fabricated from steel sheet or strip with a thickness of 0.180 inch and greater.
- F. Steel Plates and Bars: ASTM A 36, hot-dip galvanized to comply with ASTM A 123 or ASTM A 153, Class B3, as applicable to size and form indicated.

2.7 ANCHORS AND TIES

- A. For anchoring clay facing blocks to back-up masonry wall:
1. For horizontal cell facing units provide and install adjustable two wythe wall reinforcement type "Hook-It" made by Hohmann and Barnard or approved equal. Finish to be hot-dip galvanized.
 - a. Inner wythe to be truss box mesh type with 9 gauge rods.
 - b. Outer wythe to be ladder reinforcement type with 9 gauge rods.
 2. For vertical units provide and install dowels and ties made by Hohmann and Barnard or approved equal. All pieces to be stainless steel (Type 302).
 - a. Half bond ties 7-5/8" x 3" x 1/4" diameter in back-up wall.
 - b. Solid 1/4" diameter x 2" long dowels.
 - c. Wire of 3/16" diameter cut to length as required.
- B. For anchoring masonry to cold formed metal framing, provide hot dip galvanized steel anchors with 9 ga. wire equal to "X-Seal Veneer Anchor" with "X-Seal Tape" seals as manufactured by Hohmann & Barnard or equal by Heckman, AA Wire Products or approved equal.

2.8 ADJUSTABLE ANCHORS FOR CONNECTING MASONRY TO STRUCTURAL FRAMEWORK

- A. General: Two-piece assemblies as described below allowing vertical or horizontal differential movement between wall and framework parallel to plane of wall, but resisting tension and compression forces perpendicular to it.

- B. For anchorage to concrete framework, provide manufacturer's standard with dovetail anchor section formed from sheet metal and triangular-shaped wire tie section sized to extend within 1 inch of masonry face.
- C. For anchorage to steel framework provide manufacturer's standard anchors with crimped 1/4-inch-diameter wire anchor section for welding to steel and triangular-shaped wire tie section sized to extend within 1 inch of masonry face and as follows:
 - 1. Wire Diameter: 0.25 inch.

2.9 MISCELLANEOUS ANCHORS

- A. Unit Type Masonry Inserts in Concrete: Cast iron or malleable iron inserts of type and size indicated.
- B. Dovetail Slots: Furnish dovetail slots, with filler strips, of slot size indicated, fabricated from 0.0336-inch (22-gage) sheet metal.
- C. Anchor Bolts: Steel bolts complying with A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153, Class C; of diameter and length indicated and in the following configurations:
 - 1. Headed bolts.

2.10 POST-INSTALLED ANCHORS

- A. Anchors as described below, with capability to sustain, without failure, load imposed within factors of safety indicated, as determined by testing per ASTM E 488, conducted by a qualified independent testing laboratory.
 - 1. Type: Expansion anchors.
 - 2. Corrosion Protection: Carbon steel components zinc-plated to comply with ASTM B 633, Class Fe/Zn 5 (5 microns) for Class SC 1 service condition (mild).
 - 3. For Cast-In-Place and Post-Installed Anchors in Concrete: Capability to sustain, without failure, a load equal to 4 times loads imposed by masonry.
 - 4. For Post-Installed Anchors in Grouted Concrete Masonry Units: Capability to sustain, without failure, a load equal to 6 times loads imposed by masonry.

2.11 MISCELLANEOUS MASONRY ACCESSORIES

- A. Nonmetallic Expansion Joint Strips: Premolded filler strips complying with ASTM D 1056, Type 2 (closed cell), Class A (cellular rubber and rubber-like materials with specific resistance to petroleum base oils), Grade 1 (compression-deflection range of 2-5 psi), compressible up to 35 percent, of width and thickness indicated, formulated from the following material:
 - 1. Neoprene.
 - 2. Urethane.
 - 3. Polyvinyl chloride.

- B. Preformed Control Joint Gaskets: Material as indicated below, designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

- 1. Styrene-Butadiene Rubber Compound: ASTM D 2000, Designation 2AA-805.

- C. Bond Breaker Strips: Asphalt-saturated organic roofing felt complying with ASTM D 226, Type 1 (No. 15 asphalt felt).

2.12 MASONRY CLEANERS

- A. Clean masonry and stone surfaces using high pressure (1500 psi) water. Should contaminants remain on walls provide acidic cleaner as noted below.

- B. Acidic Cleaner: Manufacturer's standard-strength, general-purpose cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry surfaces of type indicated below without discoloring or damaging masonry surfaces; expressly approved for intended use by manufacturer of masonry units being cleaned.

- 1. For masonry not subject to metallic oxidation stains, use formulation consisting of a concentrated blend of surface-acting acids, chelating, and wetting agents.

- 2. For dark colored masonry not subject to metallic oxidation stains, use formulation consisting of a liquid blend of surface-acting acids and special inhibitors.

- 3. For masonry subject to metallic oxidation stains, use formulation consisting of a liquid blend of organic and inorganic acids and special inhibitors.

- 4. Products: Subject to compliance with requirements, provide the following:

- a. "Sure Klean No. 600 Detergent," ProSoCo, Inc.
 - b. "Sure Klean No. 101 Lime Solvent," ProSoCo, Inc.
 - c. "Sure Klean Vana Trol," ProSoCo, Inc.
 - d. or approved equal.

- 5. Completely remove all traces of acid cleaner after cleaning is complete and prior to application of water repellent.

- 6. Test solutions prior to start of cleaning at concealed area as approved by Commissioner.

2.13 MORTAR AND GROUT MIXES

- A. General: Do not add admixtures including coloring pigments, air-entraining agents, accelerators, retarders, water repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated.

- 1. Do not use calcium chloride in mortar or grout.

- B. Mortar for Unit Masonry: Comply with ASTM C 270, for job-mixed mortar and ASTM C 1142 for ready-mixed mortar, of types indicated below:

- 1. Limit cementitious materials in mortar to Portland cement-lime.

2. For masonry below grade and in contact with earth, and where indicated, use type indicated below:
 - a. Type S.
 3. For reinforced masonry, load bearing masonry, and where indicated, use type indicated below:
 - a. Type S.
 4. For exterior, above-grade non-load bearing walls and parapet walls; for interior non-load bearing partitions, and for other applications where another type is not indicated, use type indicated below:
 - a. Type N.
- C. Colored Pigmented Mortar: Select and proportion pigments with other ingredients to produce color required.
- D. Colored Aggregate Mortar: Produce mortar of color required by use of colored aggregates in combination with selected cementitious materials.
1. Mix to match sample approved by the Commissioner.
- E. Grout for Unit Masonry: Comply with ASTM C 476 and referenced unit masonry standard.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine conditions, with Contractor present, for compliance with requirements for installation tolerances and other specific conditions, and other conditions affecting performance of unit masonry.
- B. Examine rough-in and built-in construction to verify actual locations of piping connections prior to installation.
- C. Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. Comply with referenced unit masonry standards and other requirements indicated applicable to each type of installation included in Project.
- B. Thickness: Build cavity and composite walls and other masonry construction to the full thickness shown. Build single-wythe walls to the actual thickness of the masonry units, using units of nominal thickness indicated.
- C. Build chases and recesses as shown or required to accommodate items specified in this and other Sections of the Specifications. Provide not less than 8 inches of masonry between chase or recess and jamb of openings and between adjacent chases and recesses.

- D. Leave openings for equipment to be installed before completion of masonry. After installation of equipment, complete masonry to match construction immediately adjacent to the opening.
- E. Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide continuous pattern and to fit adjoining construction. Use full-size units without cutting where possible.
- F. Built-In Work
1. As the work progresses, build in items specified under this and other Sections of these specifications. Fill in solidly with masonry around built-in items.
 2. Mortar in door frames, access doors, louvers and other metal items embedded or built into masonry work solidly with mortar as the masonry units are laid up.
 3. Grout under lintels, bearing plates, and steel bearing on masonry with solid bed grout.
 4. Sleeves, pipes, ducts and all other items which pass through masonry walls shall be caulked with interior grade sealant meeting requirements of Section 07900, so as to be air tight and prevent air leakage. Refer to Section 07840 for packing of voids in rated masonry walls.
 5. Fill vertical cells of masonry units solid with grout which have anchoring, reinforcing rods, supporting or hanging devices embedded in the cell including stone anchors and window or curtain wall anchors.
 6. Fill vertical cells of masonry units solid with mortar on each side of door frames to sixteen (16) inches beyond.
 7. Unless otherwise noted, fill vertical cells of masonry units solid with grout which are below steel bearing plates, steel beams, and ends of lintels, to eight (8) inches beyond bearing and from floor to bearing.
 8. Place wire mesh in horizontal joint below masonry unit cells to be filled with mortar, to prevent mortar from dropping into unfilled cells below.
 9. Masonry indicated as being reinforced shall have all voids filled solid with grout. Grout shall be consolidated in place by vibration or other methods which insure complete filling of cells. When the least clear dimension of the grouted cell is less than two (2) inches, the maximum height of grout pour shall not exceed twelve (12) inches. When the least clear dimension is two (2) inches or more, maximum height of grout pour shall not exceed forty-eight (48) inches. When grouting is stopped for one (1) hour or longer, the grout pour shall be stopped 1-1/2" below the top of a masonry unit. Vertical bar reinforcing shall be accurately placed and held in position while being grouted, and shall be in place before grouting starts. All such reinforcing shall have a minimum clear cover of 5/8". Lap all bars a minimum of forty (40) bar diameters and provide steel spacer ties (not to exceed 1/2 bar diameter) to secure and position all vertical steel and prevent displacement during grouting. Provide continuous horizontal reinforcement embedded in mortar joints every second course.

G. Cutting and Patching

1. All exposed masonry which requires cutting or fitting shall be cut accurately to size with motorized carborundum or diamond saw, producing cut edges.
2. Do not saw cut any masonry openings in face brick construction without Commissioner's approval and after a procedure has been reviewed and approved.
3. Holes made in exposed masonry units for attachment of handrail brackets and similar items shall be neatly drilled to proper size.
4. All masonry which requires patching in exposed work, if approved by Commissioner, shall be patched neatly with mortar to match appearance of masonry as closely as possible and to the Commissioner's satisfaction. Rake back joints and use pointing mortar to match as required.

3.3 CONSTRUCTION TOLERANCES

- A. Comply with construction tolerances specified herein and referenced standards.

3.4 LAYING MASONRY WALLS

- A. Lay outer walls in advance for accurate spacing of surface bond patterns with uniform joint widths and for accurate locating of openings, movement-type joints, returns, and offsets. Avoid the use of less-than-half-size units at corners, jambs, and where possible at other locations.
- B. Lay up walls to comply with specified construction tolerances, with courses accurately spaced and coordinated with other construction.
- C. Bond Pattern for Exposed Masonry: Lay exposed masonry in the following bond pattern; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
1. One-half running bond with vertical joint in each course centered on units in courses above and below.
 2. As indicated on drawings.
- D. Lay concealed masonry with all units in a wythe in running bond or bonded by lapping not less than 2 inches. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs.
- E. Stopping and Resuming Work: In each course, rack back 1/2-unit length for one-half running bond or 1/3-unit length for one-third running bond; do not tooth. Clean exposed surfaces of set masonry, wet clay masonry units lightly (if required), and remove loose masonry units and mortar prior to laying fresh masonry.
- F. Built-In Work: As construction progresses, build-in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.
1. Fill space between hollow metal frames and masonry solidly with mortar, unless otherwise indicated.

2. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath in the joint below and rod mortar or grout into core.
3. Fill cores in hollow concrete masonry units with grout 3 courses (24 inches) under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated.

3.5 CAVITY WALLS

- A. All exterior masonry walls, unless otherwise indicated, shall be cavity walls of thickness indicated.
- B. Cavity walls shall be securely tied together by horizontal joint reinforcement and ties anchored to reinforcement, as herein specified, spaced every other block course.
 1. Where cavity back-up is concrete use ties specified herein spaced sixteen (16) inches o.c. both directions.
- C. Cavity between facing and backing wall shall be kept clean and clear of all mortar droppings, and no mortar ledges shall project into the cavity. Temporary wood strips, cut to width of cavity and fitted with lift-up wires, shall be laid on the joint reinforcement and carefully lifted out before placement of the next layer of reinforcement. Any projecting mortar shall be spread over the back of the outer wythe immediately following the setting of the masonry unit.
 1. Cavity drainage material shall be installed at the bottom of each cavity over the flashing to protect weep holes.
- D. At cavity and solid walls adjacent to window openings fill block solid with mortar where window anchors are to be located. Coordinate with window subcontractor.
- E. Concrete block back-up at cavity wall construction shall be anchored to slab as indicated in structural drawings.
- F. Anchor CMU back-up with anchors as specified herein.
- G. Refer to Section 072100, "Thermal Insulation," for material and installation of cavity wall insulation and drainage board.

3.6 INTERIOR BLOCK PARTITIONS

- A. Build to full height unless otherwise shown on drawings. At non-rated partitions fill void between CMU and structural deck with continuous neoprene filler conforming to the requirements of Section 079200. At fire rated partitions, fill void with fire stop material meeting the requirements of Section 078413. Fasten to structure at top of partition using steel angles as specified herein.
- B. Provide continuous horizontal joint reinforcing every other block course, except as otherwise noted. Fully embed longitudinal side rods in mortar for their entire length with a minimum cover of 5/8". Lap reinforcement a minimum of six (6) inches at ends of units.
- C. Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bend units as directed by manufacturer for continuity at returns, offsets, column fireproofing, pipe enclosures and other special conditions.

D. Corners

1. Provide bull-nosed units at all exposed outside vertical and horizontal corners.
2. First course above floor to be square-edged corner units to allow for proper base installation.
3. Provide interlocking masonry unit bond in each course at corners.
4. Provide continuity at corners with prefabricated "L" reinforcement units, in addition to masonry bonding.

E. Intersecting and Abutting Walls

1. Unless vertical control joints are shown as part of structural frame, provide interlocking masonry bond. Provide starters and special shapes as shown on the drawings to bond these walls.
2. In addition to masonry bonding, provide horizontal reinforcement using prefabricated "T" units at interior partitions.

3.7 MORTAR BEDDING AND JOINTING

A. Lay hollow concrete masonry units as follows:

1. With full mortar coverage on horizontal and vertical face shells.
2. Bed webs in mortar in starting course on footings and in all courses of piers, columns, and pilasters, and where adjacent to cells or cavities to be filled with grout.
3. For starting course on footings where cells are not grouted, spread out full mortar bed including areas under cells.

B. Cut joints flush for masonry walls to be concealed or to be covered by other materials, unless otherwise indicated.

3.8 HORIZONTAL JOINT REINFORCEMENT

A. General: Provide continuous horizontal joint reinforcement in CMU every other block course unless otherwise indicated. Install longitudinal side rods in mortar for their entire length with a minimum cover of 5/8" on exterior side of walls, 1/2" elsewhere. Lap reinforcing a minimum of 6".

B. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

C. Provide continuity at corners and wall intersections by use of prefabricated "L" and "T" sections. Cut and bend reinforcement units as directed by manufacturer for continuity at returns, off sets, column fireproofing, pipe enclosures, and other special conditions.

3.9 ANCHORING MASONRY TO STRUCTURAL MEMBERS

A. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the following:

1. Provide an open space not less than 1" in width between masonry and structural member, unless otherwise indicated. Keep open space free of mortar or other rigid materials.
2. Anchor masonry to structural members with flexible anchors embedded in masonry joints and attached to structure.
3. Space anchors as indicated, but not more than 24" o.c. vertically and 36" o.c. horizontally.

3.10 MOVEMENT (CONTROL AND EXPANSION) JOINTS

- A. General: Install control and expansion joints in unit masonry where indicated. Build in related items as the masonry progresses. Do not form a continuous span through movement joints unless provisions are made to prevent in plane restraint of wall or partition movement.
- B. Form control joints in concrete masonry as follows:
 1. Fit bond breaker strips into hollow contour in ends of block units on one side of control joint. Fill the resultant core with grout and rake joints in exposed faces.
 2. Install preformed control joint gaskets designed to fit standard sash block.
 3. Install special shapes designed for control joints. Install bond breaker strips at joint. Keep head joints free and clear of mortar or rake joint.
- C. Form expansion joints in clay block made from clay or shale as follows:
 1. Build flanges of metal expansion strips into masonry. Lap each joint 4" in direction of water flow. Seal joints below grade and at junctures with horizontal expansion joints, if any.
 2. Build flanges of factory fabricated expansion joint units into masonry.
 3. Build in joint fillers where indicated.
 4. Form open joint of width indicated but not less than 3/8" for installation of sealant and backer rod specified in Division 7 Section "Joint Sealers". Maintain joint free and clear of mortar.
- D. Build in horizontal pressure relieving joints where indicated; construct joints by either leaving an air space or inserting non-metallic 50% compressible joint filler of width required to permit installation of sealant and backer rod specified in Division 7 Section "Joint Sealers".
 1. Locate horizontal pressure relieving joints beneath shelf angles supporting masonry veneer and attached to structure behind masonry veneer.

3.11 LINTELS

- A. Install steel lintels where indicated.
- B. Provide masonry lintels where shown and wherever openings of more than 1'-0" for brick size units and 2'-0" for block size units are shown without structural steel or other supporting lintels. Provide or formed in place masonry lintels. Cure precast lintels before handling and installation. Temporarily support formed in place lintels.

1. For hollow concrete masonry unit walls, use specially formed bond beam units with reinforcement bars placed as indicated and filled with coarse grout.

- C. Provide minimum bearing of 8" at each jamb, unless otherwise indicated.

3.12 INSTALLATION OF REINFORCED UNIT MASONRY ASSEMBLIES

- A. General: Install reinforced unit masonry to comply with requirements of referenced unit masonry standard.
- B. Temporary Formwork: Construct formwork and shores to support reinforced masonry elements during construction.
 1. Construct formwork to conform to shape, line, and dimensions shown. Make sufficiently tight to prevent leakage of mortar and grout. Brace, tie, and support forms to maintain position and shape during construction and curing of reinforced masonry.
- C. Do not place grout until entire height of masonry to be grouted has attained sufficient strength to resist grout pressure.
- D. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and other temporary loads that may be placed on them during construction.

3.13 FIELD QUALITY CONTROL

- A. Testing Frequency: Tests and evaluations listed in this article will be performed by the Contractor's Independent Testing Agency during construction for each 5000 sq. ft. of wall area or portion thereof.
 1. Mortar properties will be tested per property specifications of ASTM C 270.
 2. Mortar composition and properties will be evaluated per ASTM C 780.
 3. Grout compressive strength will be sampled and tested per ASTM C 1019.
- B. Prism Test Method: For each type of wall construction indicated, masonry prisms will be tested per ASTM E 447, Method B, and as follows:
 1. Prepare one set of prisms for testing at 7 days and one set for testing at 28 days.
- C. Results of test shall be submitted to the Commissioner in writing.
- D. Evaluation of Quality Control Tests: In absence of other indications of non-compliance with requirements, masonry will be considered satisfactory if results from construction quality control tests comply with minimum requirements indicated.

3.14 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or if units do not match adjoining units. Install new units to match adjoining units and in fresh mortar or grout, pointed to eliminate evidence of replacement.

- B. Pointing: During the tooling of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar. Point up all joints including corners, openings, and adjacent construction to provide a neat, uniform appearance, prepared for application of sealants.
- C. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
1. Remove large mortar particles by hand with wooden paddles and non-metallic scrape hoes or chisels.
 2. Test cleaning methods on sample wall panel; leave 1/2 panel uncleaned for comparison purposes. Obtain Commissioner's approval of sample cleaning before proceeding with cleaning of masonry.
 3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film or waterproof masking tape.
 4. If high pressure water cleaning is not adequate, clean brick by means of bucket and brush hand cleaning method described in BIA "Technical Note No. 20 Revised" using the following masonry cleaner:
 - a. Job mixed acidic solution.
 5. Clean concrete masonry by means of cleaning method indicated in NCMA TEK 45 applicable to type of stain present on exposed surfaces.
 6. Completely remove all cleaning agents prior to application of clear water repellent.
- D. Protection: Provide final protection and maintain conditions, in a manner acceptable to installer, that ensure unit masonry is without damage and deterioration at time of Substantial Completion.

END OF SECTION

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SECTION 051200

STRUCTURAL STEEL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes structural steel.
- B. This Section includes structural steel and architecturally exposed structural steel.
- C. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 3 Section "Cast-In-Place Concrete"
 - 2. Division 5 Section "Steel Deck" for field installation of shear connectors.
 - 3. Division 5 section Steel joist for installation of steel joists
 - 4. Division 5 Section "Metal Fabrications" for loose steel bearing plates and miscellaneous steel framing.
 - 5. Division 9 Section "Painting and Finishing" for surface preparation and priming requirements.

1.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Engineer structural steel connections required by the Contract Documents to be selected or completed by the fabricator to withstand design loadings indicated.
- B. Engineering Responsibility: Engage a fabricator who utilizes a qualified professional engineer to prepare calculations, Shop Drawings, and other structural data for structural steel connections.

1.4 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product Data for each type of product specified.
- C. Shop Drawings detailing fabrication of structural steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
 2. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld.
 3. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify high-strength bolted slip-critical, direct-tension, or tensioned shear/bearing connections.
 4. Include Shop Drawings signed and sealed by a qualified professional engineer responsible for their preparation.
- D. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- E. Mill test reports signed by manufacturers certifying that their products, including the following, comply with requirements.
1. Structural steel, including chemical and physical properties.
 2. Bolts, nuts, and washers, including mechanical properties and chemical analysis.
 3. Direct-tension indicators.
 4. Shear stud connectors.
 5. Shop primers.
 6. Nonshrink grout.

1.5 QUALITY ASSURANCE

- A. **Installer Qualifications:** Engage an experienced Installer who has completed structural steel work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- B. **Fabricator Qualifications:** Engage a firm experienced in fabricating structural steel similar to that indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to fabricate structural steel without delaying the Work.
1. Fabricator must participate in the AISC Quality Certification Program and be designated an AISC-Certified Plant as follows:
 - a. Category: Category I, conventional steel structures.
 - b. Category: Category II, complex steel building structures.
 - c. Fabricator shall be registered with and approved by authorities having jurisdiction.
- C. Comply with applicable provisions of the following specifications and documents:
1. AISC's "Specification for Structural Steel Buildings--Allowable Stress Design and Plastic Design."
 2. AISC's "Specification for Allowable Stress Design of Single-Angle Members."
 3. AISC's "Seismic Provisions for Structural Steel Buildings."

4. ASTM A 6 "Specification for General Requirements for Rolled Steel Plates, Shapes, Sheet Piling, and Bars for Structural Use."
 5. Research Council on Structural Connections' (RCSC) "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
 6. Research Council on Structural Connections' (RCSC) "Load and Resistance Factor Design Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
- D. Professional Engineer Qualifications: A professional engineer who is legally authorized to practice in the jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for projects with structural steel framing that are similar to that indicated for this Project in material, design, and extent.
- E. Welding Standards: Comply with applicable provisions of AWS D1.1 "Structural Welding Code--Steel."
1. Present evidence that each welder has satisfactorily passed AWS qualification tests for welding processes involved and, if pertinent, has undergone recertification.
- F. Mockups: Prior to installing architecturally exposed structural steel, construct mockups for each form of construction and finish required to demonstrate aesthetic effects as well as qualities of materials and execution. Build mockups to comply with the following requirements, using materials indicated for final unit of Work.
1. Locate mockups on-site in the location and of the size indicated or, if not indicated, as directed by Commissioner.
 2. Notify Commissioner one week in advance of the dates and times when mockups will be constructed.
 3. Demonstrate the proposed range of aesthetic effects and workmanship of steel surfaces and welded and bolted connections.
 - a. Coordinate finish painting requirements of mockups with Division 9 Section "Painting."
 4. Obtain Commissioner's approval of mockups before start of final unit of Work.
 5. Retain and maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
 - a. When directed, demolish and remove mockups from Project site.
 - b. Approved mockups in an undisturbed condition at the time of Substantial Completion may become part of the completed Work.
- G. Preinstallation Conference: Conduct conference at Project site to comply with requirements of Division 1 Section "Project Meetings."

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver structural steel to Project site in such quantities and at such times to ensure continuity of installation.
- B. Store materials to permit easy access for inspection and identification. Keep steel members off ground by using pallets, platforms, or other supports. Protect steel members and packaged materials from erosion and deterioration.
 - 1. Store fasteners in a protected place. Clean and relubricate bolts and nuts that become dry or rusty before use.
 - 2. Do not store materials on structure in a manner that might cause distortion or damage to members or supporting structures. Repair or replace damaged materials or structures as directed.

1.7 SEQUENCING

- A. Supply anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, templates, instructions, and directions, as required, for installation.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Structural Steel Shapes, Plates, and Bars: As follows:
 - 1. High-Strength, Low-Alloy Columbium-Vanadium Steel: ASTM A 572 Grade 50.
- B. Cold-Formed Structural Steel Tubing: ASTM A 500, Grade B.
- C. Hot-Formed Structural Steel Tubing: ASTM A 501.
- D. Steel Pipe: ASTM A 53, Type E or S, Grade B.
 - 1. Weight Class: Standard.
 - 2. Weight Class: Extra strong.
 - 3. Weight Class: Double-extra strong.
 - 4. Finish: Black.
 - 5. Finish: Galvanized.
 - 6. Finish: Black, except where indicated to be galvanized.
- E. Carbon-Steel Castings: ASTM A 27, Grade 65-35, medium-strength carbon steel.
- F. High-Strength Steel Castings: ASTM A 148, Grade 80-50.

- G. Shear Connectors: ASTM A 108, Grade 1015 through 1020, headed-stud type, cold-finished carbon steel, AWS D1.1, Type B.
- H. Anchor Rods, Bolts, Nuts, and Washers: As follows:
 - 1. Unheaded Rods: ASTM A 572, Grade 50
 - 2. Unheaded Bolts: ASTM A 687, high strength.
 - 3. Anchor Bolts: ASTM A 307, Grade A carbon-steel, hex-head bolts; and carbon-steel nuts.
 - 4. Headed Bolts: ASTM A 325 Type 1, heavy hex steel structural bolts and heavy hex carbon-steel nuts.
 - 5. Headed Bolts: ASTM A 490, Type 1, heavy hex steel structural bolts and heavy hex carbon-steel nuts.
 - 6. Washers: ASTM A 36.
- I. Nonhigh-Strength Bolts, Nuts, and Washers: ASTM A 307, Grade A; carbon-steel, hex-head bolts; carbon-steel nuts; and flat, unhardened steel washers.
 - 1. Finish: Plain, uncoated.
- J. High-Strength Bolts, Nuts, and Washers: ASTM A 325 Type 1, heavy hex steel structural bolts, heavy hex carbon-steel nuts, and hardened carbon-steel washers.
 - 1. Finish: Plain, uncoated.
 - 2. Direct-Tension Indicators: ASTM F 959, Type 325.
 - a. Finish: Plain, uncoated.
- K. High-Strength Bolts, Nuts, and Washers: ASTM A 490, Type 1, heavy hex steel structural bolts, heavy hex carbon-steel nuts, and hardened carbon-steel washers, uncoated.
 - 1. Direct-Tension Indicators: ASTM F 959, Type 490, uncoated.
- L. Welding Electrodes: Comply with AWS requirements.

2.2 PRIMER

- A. Primer: SSPC-Paint 25; red iron oxide, zinc oxide, raw linseed oil and alkyd primer.
- B. Primer: SSPC-Paint 23, latex primer.
- C. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds and repair painting galvanized steel, with dry film containing not less than 93 percent zinc dust by weight, and complying with DOD-P-21035A or SSPC-Paint 20.

2.3 GROUT

- A. Cement Grout: Portland cement, ASTM C 150, Type I; and clean, natural sand, ASTM C 404, Size No. 2. Mix at ratio of 1 part cement to 2-1/2 parts sand, by volume, with minimum water required for placement and hydration.
- B. Metallic, Shrinkage-Resistant Grout: Premixed, factory-packaged, ferrous aggregate grout, complying with ASTM C 1107, of consistency suitable for application, and a 30-minute working time.
- C. Nonmetallic, Shrinkage-Resistant Grout: Premixed, nonmetallic, noncorrosive, nonstaining grout containing selected silica sands, portland cement, shrinkage compensating agents, plasticizing and water-reducing agents, complying with ASTM C 1107, of consistency suitable for application, and a 30-minute working time.

2.4 FABRICATION

- A. Fabricate and assemble structural steel in shop to greatest extent possible. Fabricate structural steel according to AISC specifications referenced in this Section and in Shop Drawings.
 - 1. Camber structural steel members where indicated.
 - 2. Identify high-strength structural steel according to ASTM A 6 and maintain markings until steel has been erected.
 - 3. Mark and match-mark materials for field assembly.
 - 4. Fabricate for delivery a sequence that will expedite erection and minimize field handling of structural steel.
 - 5. Complete structural steel assemblies, including welding of units, before starting shop-priming operations.
 - 6. Comply with fabrication tolerance limits of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for structural steel.
- B. Fabricate architecturally exposed structural steel with exposed surfaces smooth, square, and free of surface blemishes, including pitting, rust and scale seam marks, roller marks, rolled trade names, and roughness.
 - 1. Remove blemishes by filling, grinding, or by welding and grinding, prior to cleaning, treating, and shop priming.
 - 2. Comply with fabrication requirements, including tolerance limits, of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for architecturally exposed structural steel.
- C. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.
 - 1. Plane thermally cut edges to be welded.
- D. Finishing: Accurately mill ends of columns and other members transmitting loads in bearing.

- E. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1 and manufacturer's printed instructions.
- F. Steel Wall Framing: Select true and straight members for fabricating steel wall framing to be attached to structural steel framing. Straighten as required to provide uniform, square, and true members in completed wall framing.
- G. Holes: Provide holes required for securing other work to structural steel framing and for passage of other work through steel framing members, as shown on Shop Drawings.
 - 1. Cut, drill, or punch holes perpendicular to metal surfaces. Do not flame-cut holes or enlarge holes by burning. Drill holes in bearing plates.
 - 2. Weld threaded nuts to framing and other specialty items as indicated to receive other work.

2.5 SHOP CONNECTIONS

- A. Shop install and tighten nonhigh-strength bolts, except where high-strength bolts are indicated.
- B. Shop install and tighten high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
- C. Weld Connections: Comply with AWS D1.1 for procedures, appearance and quality of welds, and methods used in correcting welding work.
 - 1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without warp.
 - 2. Verify that weld sizes, fabrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances. Prevent surface bleeding of back-side welding on exposed steel surfaces. Grind smooth exposed fillet welds 1/2 inch and larger. Grind flush butt welds. Dress exposed welds.

2.6 PREFABRICATED BUILDING COLUMNS

- A. Definition: Prefabricated building columns consist of assemblies composed of load-bearing structural steel members encased in manufacturer's standard insulating material for fire protection and wrapped in outer nonload-bearing steel sheet enclosures.
- B. Fire-Test-Response Characteristics: Provide prefabricated building column assemblies identical to those of assemblies tested for the following fire-resistance ratings per ASTM E 119 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify columns with appropriate markings of applicable testing and inspecting agency.
 - 1. Fire-Resistance Rating: As indicated.

- C. Column Configuration: Provide columns of sizes and shapes indicated. Fabricate connections to comply with details shown or required to suit type of structure indicated.

2.7 SHOP PRIMING

- A. Shop prime steel surfaces, except the following:
 - 1. Surfaces embedded in concrete or mortar. Extend priming of partially embedded members to a depth of 2 inches.
 - 2. Surfaces to be field welded.
 - 3. Surfaces to be high-strength bolted with slip-critical connections.
 - 4. Surfaces to receive sprayed-on fireproofing.
 - 5. Galvanized surfaces.
- B. Surface Preparation: Clean surfaces to be painted. Remove loose rust, loose mill scale, and spatter, slag, or flux deposits. Prepare surfaces according to SSPC specifications as follows:
 - 1. SSPC-SP 2 "Hand Tool Cleaning."
- C. Priming: Immediately after surface preparation, apply primer according to manufacturer's instructions and at rate recommended by SSPC to provide a dry film thickness of not less than 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.
 - 1. Stripe paint corners, crevices, bolts, welds, and sharp edges.
 - 2. Apply 2 coats of shop paint to inaccessible surfaces after assembly or erection. Change color of second coat to distinguish it from first.
- D. Painting: Apply a 1-coat, nonasphaltic primer complying with SSPC's "Painting System Guide No. 7.00" to provide a dry film thickness of not less than 1.5 mils.

2.8 GALVANIZING

- A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel indicated for galvanizing according to ASTM A 123.

2.9 SOURCE QUALITY CONTROL

- A. Commissioner will engage an independent testing and inspecting agency to perform shop inspections and tests and to prepare test reports.
 - 1. Testing agency will conduct and interpret tests and state in each report whether test specimens comply with or deviate from requirements.
 - 2. Provide testing agency with access to places where structural steel Work is being fabricated or produced so required inspection and testing can be accomplished.

- B. Correct deficiencies in or remove and replace structural steel that inspections and test reports indicate do not comply with specified requirements.
- C. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.
- D. Shop-bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
 - 1. Direct-tension indicator gaps will be verified to comply with ASTM F 959, Table 2.
- E. In addition to visual inspection, shop-welded connections will be inspected and tested according to AWS D1.1 and the inspection procedures listed below, at testing agency's option.
 - 1. Liquid Penetrant Inspection: ASTM E 165.
 - 2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
 - 3. Radiographic Inspection: ASTM E 94 and ASTM E 142; minimum quality level "2-2T."
 - 4. Ultrasonic Inspection: ASTM E 164.
- F. In addition to visual inspection, shop-welded shear connectors will be inspected and tested according to requirements of AWS D1.1 for stud welding and as follows:
 - 1. Bend tests will be performed when visual inspections reveal either less than a continuous 360-degree flash or welding repairs to any shear connector.
 - 2. Tests will be conducted on additional shear connectors when weld fracture occurs on shear connectors already tested, according to requirements of AWS D1.1.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Before erection proceeds, and with the steel erector present, verify elevations of concrete and masonry bearing surfaces and locations of anchorages for compliance with requirements.
- B. Do not proceed with erection until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place, unless otherwise indicated.
 - 1. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

3.3 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and according to AISC specifications referenced in this Section.
- B. Base and Bearing Plates: Clean concrete and masonry bearing surfaces of bond-reducing materials and roughen surfaces prior to setting base and bearing plates. Clean bottom surface of base and bearing plates.
 - 1. Set base and bearing plates for structural members on wedges, shims, or setting nuts as required.
 - 2. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of base or bearing plate prior to packing with grout.
 - 3. Pack grout solidly between bearing surfaces and plates so no voids remain. Finish exposed surfaces, protect installed materials, and allow to cure.
 - a. Comply with manufacturer's instructions for proprietary grout materials.
- C. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."
 - 1. Maintain erection tolerances of architecturally exposed structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."
- D. Align and adjust various members forming part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
 - 1. Level and plumb individual members of structure.
 - 2. Establish required leveling and plumbing measurements on mean operating temperature of structure. Make allowances for difference between temperature at time of erection and mean temperature at which structure will be when completed and in service.
- E. Splice members only where indicated.
- F. Remove erection bolts on welded, architecturally exposed structural steel; fill holes with plug welds; and grind smooth at exposed surfaces.
- G. Do not use thermal cutting during erection.
- H. Finish sections thermally cut during erection equal to a sheared appearance.
- I. Do not enlarge unfair holes in members by burning or by using drift pins. Ream holes that must be enlarged to admit bolts.

3.4 FIELD CONNECTIONS

- A. Install and tighten nonhigh-strength bolts, except where high-strength bolts are indicated.
- B. Install and tighten high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
 - 1. Bolts: ASTM A 325 high-strength bolts, unless otherwise indicated.
 - 2. Bolts: ASTM A 490 high-strength bolts, unless otherwise indicated.
 - 3. Connection Type: Snug tightened, unless indicated as slip-critical, direct-tension, or tensioned shear/bearing connections.
 - 4. Connection Type: Slip-critical, direct-tension, or tensioned shear/bearing connections as indicated.
- C. Weld Connections: Comply with AWS D1.1 for procedures, appearance and quality of welds, and methods used in correcting welding work.
 - 1. Comply with AISC specifications referenced in this Section for bearing, adequacy of temporary connections, alignment, and removal of paint on surfaces adjacent to field welds.
 - 2. Assemble and weld built-up sections by methods that will maintain true alignment of axes without warp.
 - 3. Verify that weld sizes, fabrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances. Prevent surface bleeding of back-side welding on exposed steel surfaces. Grind smooth exposed fillet welds 1/2 inch and larger. Grind flush butt welds. Dress exposed welds.

3.5 PREFABRICATED BUILDING COLUMNS

- A. Install prefabricated building columns to comply with AISC specifications referenced in this Section, manufacturer's recommendations, and requirements of the testing and inspecting agency that apply to the fire-resistance rating indicated.

3.6 FIELD QUALITY CONTROL

- A. Commissioner will engage an independent testing and inspecting agency to perform field inspections and tests and to prepare test reports.
 - 1. Testing agency will conduct and interpret tests and state in each report whether tested Work complies with or deviates from requirements.
- B. Correct deficiencies in or remove and replace structural steel that inspections and test reports indicate do not comply with specified requirements.
- C. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.

- D. Field-bolted connections will be tested and inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
- E. Field-bolted connections will be tested and inspected according to RCSC's "Load and Resistance Factor Design Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
 - 1. Direct-tension indicator gaps will be verified to comply with ASTM F 959, Table 2.
- F. In addition to visual inspection, field-welded connections will be inspected and tested according to AWS D1.1 and the inspection procedures listed below, at testing agency's option.
 - 1. Liquid Penetrant Inspection: ASTM E 165.
 - 2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
 - 3. Radiographic Inspection: ASTM E 94 and ASTM E 142; minimum quality level "2-2T."
 - 4. Ultrasonic Inspection: ASTM E 164.
- G. In addition to visual inspection, field-welded shear connectors will be inspected and tested according to requirements of AWS D1.1 for stud welding and as follows:
 - 1. Bend tests will be performed when visual inspections reveal either less than a continuous 360-degree flash or welding repairs to any shear connector.
 - 2. Tests will be conducted on additional shear connectors when weld fracture occurs on shear connectors already tested, according to requirements of AWS D1.1.

3.7 CLEANING

- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint. Apply paint to exposed areas using same material as used for shop painting.
 - 1. Apply by brush or spray to provide a minimum dry film thickness of 1.5 mils
- B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint on structural steel are included in Division 9 Section "Painting."
- C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and apply galvanizing repair paint according to ASTM A 780.

END OF SECTION 05120

SECTION 052100

STEEL JOISTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:

1. Open-web K-series steel joists.
2. LH-series long-span steel joists.
3. DLH-series deep long-span steel joists.
4. Joist accessories.

- B. Related Sections include the following:

1. Division 3 Section "Cast-in-Place Concrete" for installing bearing plates in concrete.
2. Division 4 Section "Unit Masonry Assemblies" for installing bearing plates in unit masonry.
3. Division 5 Section "Metal Fabrications" for furnishing steel bearing plates.
4. Division 9 Section "Painting" for prime painting.

1.3 DEFINITIONS

- A. Special Joists: Joists requiring modification by the manufacturer to support nonuniform, unequal, or special loading conditions that invalidate SJI's "Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders."

1.4 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Provide special joists and connections capable of withstanding design loads within limits and under conditions indicated.

1.5 SUBMITTALS

- A. **Product Data:** For each type of joist, accessory, and product indicated.
- B. **Shop Drawings:** Show layout, mark, number, type, location, and spacings of joists. Include joining and anchorage details, bracing, bridging, accessories; splice and connection locations and details; and attachments to other construction.
 - 1. Indicate locations and details of anchorage devices and bearing plates to be embedded in other construction.
- C. **Welding Certificates:** Copies of certificates for welding procedures and personnel.
- D. **Mill certificates** signed by manufacturers of bolts certifying that their products comply with specified requirements.
- E. **Qualification Data:** For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- F. **Research/Evaluation Reports:** Evidence of steel joists' compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.

1.6 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** A firm experienced in manufacturing joists similar to those indicated for this Project and with a record of successful in-service performance.
 - 1. Manufacturer must be certified by SJI to manufacture joists complying with SJI standard specifications and load tables.
 - 2. Assumes responsibility for engineering special joists to comply with performance requirements. This responsibility includes preparation of Shop Drawings and comprehensive engineering analysis by a qualified professional engineer.
 - 3. **Professional Engineer Qualifications:** A professional engineer who is legally authorized to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of joists that are similar to those indicated for this Project in material, design, and extent.
- B. **SJI Specifications:** Comply with SJI's "Standard Specifications Load Tables and Weight Tables for Steel Joists and Joist Girders" (hereafter, "Specifications"), applicable to types of joists indicated.
- C. **Welding:** Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel"; and AWS D1.3 "Structural Welding Code--Sheet Steel."

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle joists as recommended in SJI's "Specifications."
- B. Protect joists from corrosion, deformation, and other damage during delivery, storage, and handling.

1.8 SEQUENCING

- A. Deliver steel bearing plates and other devices to be built into concrete and masonry construction.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Steel: Comply with SJI's "Specifications" for chord and web members.
- B. Steel Bearing Plates: ASTM A 36/A 36M.
- C. Carbon-Steel Bolts and Threaded Fasteners: ASTM A 307, Grade A carbon-steel; hex-head bolts and threaded fasteners; carbon-steel nuts; and flat, unhardened steel washers.
- D. Finish: Plain, uncoated.
- E. High-Strength Bolts and Nuts: ASTM A 325, Type 1, heavy hex steel structural bolts, heavy hex carbon-steel nuts, and hardened carbon-steel washers.
- F. Finish: Plain, uncoated
- G. Welding Electrodes: Comply with AWS standards.

2.2 PRIMERS

- A. Primer: SSPC-Paint 15, Type I, red oxide; FS TT-P-636, red oxide; or manufacturer's standard shop primer complying with performance requirements of either of these red-oxide primers.

2.3 OPEN-WEB K-SERIES STEEL JOISTS

- A. Manufacture steel joists according to "Standard Specifications for Open Web Steel Joists, K-Series," in SJI's "Specifications," with steel-angle top- and bottom-chord members, underslung ends, and parallel top chord; of joist type indicated.

1. Joist Type: K-series steel joists
- B. Comply with AWS requirements and procedures for shop welding, appearance, quality of welds, and methods used in correcting welding work.
- C. Provide holes in chord members for connecting and securing other construction to joists.
- D. Top-Chord Extensions: Extend top chords of joists with SJI's Type S top-chord extensions where indicated, complying with SJI's "Specifications."
- E. Extended Ends: Extend bearing ends of joists with SJI's Type R extended ends where indicated, complying with SJI's "Specifications."
- F. Do not camber joists.
- G. Camber joists according to SJI's "Specifications"
- H. Equip bearing ends of joists with manufacturer's standard beveled ends or sloped shoes if joist slope exceeds 1/4 inch per 12 inches.

2.4 LONG-SPAN STEEL JOISTS

- A. Manufacture steel joists according to "Standard Specifications for Longspan Steel Joists, LH-Series and Deep Longspan Steel Joists, DLH-Series," in SJI's "Specifications," with steel-angle top- and bottom-chord members; of joist type and end and top-chord arrangements [as follows:] [as indicated.]
 1. Joist Type: LH-series steel joists.
 2. End Arrangement: Square.
 3. Top-Chord Arrangement: Parallel.
- B. Comply with AWS requirements and procedures for shop welding, appearance, quality of welds, and methods used in correcting welding work.
- C. Provide holes in chord members for connecting and securing other construction to joists.
- D. Camber long-span steel joists according to SJI's "Specifications."
- E. Equip bearing ends of joists with manufacturer's standard beveled ends or sloped shoes if joist slope exceeds 1/4 inch per 12 inches

2.5 JOIST ACCESSORIES

- A. Bridging: Provide bridging anchors and number of rows of horizontal or diagonal bridging of material, size, and type required by SJI's "Specifications" for type of joist, chord size, spacing, and span.
- B. Bridging: Detail and fabricate according to SJI's "Specifications."
 - 1. Furnish additional erection bridging if required.
- C. Fabricate steel bearing plates with integral anchorages of sizes and thicknesses indicated. Shop prime paint.
- D. Steel bearing plates with integral anchorages are specified in Division 5 Section "Metal Fabrications."
- E. Supply ceiling extensions, either extended bottom-chord elements or a separate extension unit of enough strength to support ceiling construction. Extend ends to within 1/2 inch of finished wall surface, unless otherwise indicated.
- F. Supply miscellaneous accessories, including splice plates and bolts required by joist manufacturer to complete joist installation.

2.6 CLEANING AND SHOP PAINTING

- A. Clean and remove loose scale, heavy rust, and other foreign materials from fabricated joists and accessories to be primed by hand-tool cleaning, SSPC-SP 2 or power-tool cleaning, SSPC-SP 3.
- B. Apply one shop coat of primer to joists and joist accessories to be primed to provide a continuous, dry paint film not less than 1 mil thick.
- C. Painting of joists and joist accessories is specified in Division 9 Section "Painting."

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine supporting substrates, embedded bearing plates, and abutting structural framing, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Do not install joists until supporting construction is in place and secured.
- B. Install joists and accessories plumb, square, and true to line; securely fasten to supporting construction according to SJI's "Specifications," joist manufacturer's written recommendations, and requirements in this Section.
 - 1. Before installation, splice joists delivered to Project site in more than one piece.
 - 2. Space, adjust, and align joists accurately in location before permanently fastening.
 - 3. Install temporary bracing and erection bridging, connections, and anchors to ensure that joists are stabilized during construction.
 - 4. Delay rigidly connecting bottom-chord extensions to columns or supports until dead loads have been applied.
- C. Field weld joists to supporting steel bearing plates. Coordinate welding sequence and procedure with placement of joists. Comply with AWS requirements and procedures for welding, appearance and quality of welds, and methods used in correcting welding work.
- D. Bolt joists to supporting steel framework using carbon-steel bolts, unless otherwise indicated.
- E. Bolt joists to supporting steel framework using high-strength structural bolts, unless otherwise indicated. Comply with RCSC's "Allowable Stress Design Specification for Structural Joints Using ASTM A 325 or ASTM A 490 Bolts" for high-strength structural bolt installation and tightening requirements.
- F. Install and connect bridging concurrently with joist erection, before construction loads are applied. Anchor ends of bridging lines at top and bottom chords if terminating at walls or beams.

3.3 FIELD QUALITY CONTROL

- A. Testing Agency: Commissioner will engage a qualified independent testing and inspecting agency to inspect field welds and high-strength bolted connections.
- B. Field welds will be visually inspected according to AWS D1.1.
- C. In addition to visual inspection, field welds will be tested according to AWS D1.1 and the following procedures, as applicable:
 - 1. Radiographic Testing: ASTM E 94 and ASTM E 142.
 - 2. Magnetic Particle Inspection: ASTM E 709.
 - 3. Ultrasonic Testing: ASTM E 164.
 - 4. Liquid Penetrant Inspection: ASTM E 165.
- D. Bolted connections will be visually inspected.

- E. High-strength, field-bolted connections will be tested and verified according to procedures in RCSC's "Allowable Stress Design Specification for Structural Joints Using ASTM A 325 or ASTM A 490 Bolts."
- F. Correct deficiencies in Work that inspections and test reports have indicated are not in compliance with specified requirements.
- G. Additional testing will be performed to determine compliance of corrected Work with specified requirements.

3.4 REPAIRS AND PROTECTION

- A. Repair damaged galvanized coatings on galvanized items with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.
- B. Touchup Painting: After installation, promptly clean, prepare, and prime or reprime field connections, rust spots, and abraded surfaces of prime-painted joists and accessories, bearing plates and abutting structural steel.
 - 1. Clean and prepare surfaces by hand-tool cleaning, SSPC-SP 2, or power-tool cleaning, SSPC-SP 3.
 - 2. Apply a compatible primer of the same type as the shop primer used on adjacent surfaces.
- C. Touchup Painting: Cleaning and touchup painting are specified in Division 9 Section "Painting."
- D. Provide final protection and maintain conditions, in a manner acceptable to manufacturer and Installer, that ensure joists and accessories are without damage or deterioration at time of Substantial Completion.

END OF SECTION 05210

121 Plymouth Street Paint Warehouse Relocation to 424 Wythe Avenue
DDC Project No. HWKF029B
January 29, 2014

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052100-8
STEEL JOISTS

SECTION 053100

STEEL DECK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:

1. Roof deck.
2. Composite floor deck.
3. Noncomposite form deck.

- B. Related Sections include the following:

1. Division 3 Section "Cast-in-Place Concrete" for concrete fill and reinforcing steel.
2. Division 5 Section "Structural Steel" for shop-welded shear connectors.
3. Division 5 Section "Metal Fabrications" for framing deck openings with miscellaneous steel shapes.
4. Division 9 Section "Painting and Finishing" for repair painting of painted deck.

1.3 SUBMITTALS

- A. Product Data: For each type of deck, accessory, and product indicated.
- B. Shop Drawings: Show layout and types of deck panels, anchorage details, reinforcing channels, pans, deck openings, special jointing, accessories, and attachments to other construction.
- C. Product Certificates: Signed by steel deck manufacturers certifying that products furnished comply with requirements.
- D. Welding Certificates: Copies of certificates for welding procedures and personnel.
- E. Product Test Reports: From a qualified testing agency indicating that each of the following complies with requirements, based on comprehensive testing of current products:
1. Mechanical fasteners.
 2. Acoustical roof deck.

- F. **Research/Evaluation Reports:** Evidence of steel deck's compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.

1.4 QUALITY ASSURANCE

- A. **Installer Qualifications:** An experienced installer who has completed steel deck similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.
- B. **Testing Agency Qualifications:** An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.
- C. **Welding:** Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code--Steel," and AWS D1.3, "Structural Welding Code--Sheet Steel."
- D. **Fire-Test-Response Characteristics:** Where indicated, provide steel deck units identical to those steel deck units tested for fire resistance per ASTM E 119 by a testing and inspection agency acceptable to authorities having jurisdiction.
 - 1. **Fire-Resistance Ratings:** Indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another testing and inspecting agency.
 - 2. Steel deck units shall be identified with appropriate markings of applicable testing and inspecting agency.
- E. **AISI Specifications:** Calculate structural characteristics of steel deck according to AISI's "Specification for the Design of Cold-Formed Steel Structural Members."
- F. **FM Listing:** Provide steel roof deck evaluated by FM and listed in FM's "Approval Guide, Building Materials" for Class 1 fire rating and Class 1-90 windstorm ratings.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.
- B. Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.

PART 2 - PRODUCTS

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Steel Deck:
 - a. BHP Steel Building Products USA Inc.
 - b. Consolidated Systems, Inc.
 - c. Epic Metals Corp.
 - d. Nucor Corp.; Vulcraft Div.
 - e. Roof Deck, Inc.
 - f. United Steel Deck, Inc.
 - g. Wheeling Corrugating Co.; Div. of Wheeling-Pittsburgh Steel Corp.

2.2 ROOF DECK

- A. Steel Roof Deck: Fabricate panels, without top-flange stiffening grooves, to comply with "SDI Specifications and Commentary for Steel Roof Deck," in SDI Publication No. 29, and the following:
 - 1. Galvanized Steel Sheet: ASTM A 653/A 653M, Structural Steel (SS), Grade 33, G60 zinc coating.
 - 2. Deck Profile: Type NR, narrow rib.
 - 3. Profile Depth: 2 inches.
 - 4. Design Uncoated-Steel Thickness: 0.0358 inch minimum.
 - 5. Span Condition: Triple span or more unless otherwise indicated.
 - 6. Side Laps: Interlocking seam

COMPOSITE FLOOR DECK

- B. Composite Steel Floor Deck: Fabricate panels, with integrally embossed or raised pattern ribs and interlocking side laps, to comply with "SDI Specifications and Commentary for Composite Steel Floor Deck," in SDI Publication No. 29, the minimum section properties indicated, and the following:
 - 1. Galvanized Steel Sheet: ASTM A 653/A 653M, Structural Steel (SS), Grade 33, G60 zinc coating.
 - 2. Profile Depth: 2 inches.
 - 3. Thickness: 0.0358 inch minimum (gage as indicated on drawings).
 - 4. Span Condition: Triple span or more unless otherwise indicated.

2.3 ACCESSORIES

- A. General: Provide manufacturer's standard accessory materials for deck that comply with requirements indicated.
- B. Mechanical Fasteners: Corrosion-resistant, low-velocity, power-actuated or pneumatically driven carbon-steel fasteners; or self-drilling, self-threading screws.
- C. Side-Lap Fasteners: Corrosion-resistant, hexagonal washer head; self-drilling, carbon-steel screws, No. 10 minimum diameter.
- D. Flexible Closure Strips: Vulcanized, closed-cell, synthetic rubber.
- E. Miscellaneous Sheet Metal Deck Accessories: Steel sheet, minimum yield strength of 33,000 psi, not less than 0.0359-inch design uncoated thickness, of same material and finish as deck; of profile indicated or required for application.
- F. Steel Sheet Accessories: Steel sheet, of same material, finish, and thickness as deck, unless otherwise indicated.
- G. Pour Stops and Girder Fillers: Steel sheet, minimum yield strength of 33,000 psi, of same material and finish as deck, and of thickness and profile recommended by SDI Publication No. 29 for overhang and slab depth.
- H. Column Closures, End Closures, Z-Closures, and Cover Plates: Steel sheet, of same material, finish, and thickness as deck, unless otherwise indicated.
- I. Piercing Hanger Tabs: Piercing steel sheet hanger attachment devices for use with floor deck.
- J. Weld Washers: Uncoated steel sheet, shaped to fit deck rib, 0.0598 inch thick, with factory-punched hole of 3/8-inch minimum diameter.
- K. Recessed Sump Pans: Single-piece steel sheet, 0.0747 inch thick, of same material and finish as deck, with 3-inch-wide flanges and level recessed pans of 1-1/2-inch minimum depth. For drains, cut holes in the field.
- L. Flat Sump Plate: Single-piece steel sheet, 0.0747 inch thick, of same material and finish as deck. For drains, cut holes in the field.
- M. Shear Connectors: ASTM A 108, Grades 1010 through 1020 headed stud type, cold-finished carbon steel, AWS D1.1, Type B, with arc shields.
- N. Galvanizing Repair Paint: ASTM A 780 with dry film containing a minimum of 94 percent zinc dust by weight].
- O. Repair Paint: Lead- and chromate-free rust-inhibitive primer complying with performance requirements of FS TT-P-664.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance.

3.2 INSTALLATION, GENERAL

- A. Install deck panels and accessories according to applicable specifications and commentary in SDI Publication No. 29, manufacturer's written instructions, and requirements in this Section.
- B. Install temporary shoring before placing deck panels, if required to meet deflection limitations.
- C. Locate decking bundles to prevent overloading of supporting members.
- D. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing on supporting frame before being permanently fastened. Do not stretch or contract side-lap interlocks.
 - 1. Align cellular deck panels for entire length of cell runs and align cells at ends of abutting panels.
- E. Place deck panels flat and square and fasten to supporting frame without warp or deflection.
- F. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to decking.
- G. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of decking, and support of other work.
- H. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used for correcting welding work.
- I. Mechanical fasteners may be used in lieu of welding to fasten deck. Locate mechanical fasteners and install according to deck manufacturer's written instructions.

3.3 ROOF DECK INSTALLATION

- A. Fasten roof deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated or arc seam welds with an equal perimeter, but not less than 1-1/2 inches long, and as follows:
 - 1. Weld Diameter: 5/8 inch, nominal.
 - 2. Weld Spacing: Weld edge and interior ribs of deck units with a minimum of two welds per deck unit at each support. Space welds 12 inches apart in the field of the roof and 6

inches apart in roof corners and perimeter, based on roof-area definitions of FM Loss Prevention Data Sheet 1-28.

3. Weld Washers: Install weld washers at each weld location.

- B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals not exceeding the lesser of 1/2 of the span or 18 inches , and as follows:
 1. Mechanically fasten with self-drilling No. 10 diameter or larger carbon-steel screws.
 2. Mechanically clinch or button punch.
 3. Fasten with a minimum of 1-1/2-inch long welds.

- C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 1-1/2 inches, with end joints as follows:
 1. End Joints: Lapped 2 inches

- D. Roof Sump Pans and Sump Plates: Install over openings provided in roof decking and weld flanges to top of deck. Space welds not more than 12 inches apart with at least 1 weld at each corner.

- E. Miscellaneous Roof Deck Accessories: Install ridge and valley plates, finish strips, cover plates, end closures, and reinforcing channels according to deck manufacturer's written instructions. Weld to substrate to provide a complete deck installation.

- F. Flexible Closure Strips: Install flexible closure strips over partitions, walls, and where indicated. Install with adhesive according to manufacturer's written instructions to ensure complete closure.

3.4 FLOOR DECK INSTALLATION

- A. Fasten floor deck panels to steel supporting members by arc spot (puddle) welds of the surface diameter indicated and as follows:
 1. Weld Diameter: 3/4 inch, nominal.
 2. Weld Spacing: Weld edge ribs of panels at each support. Space additional welds an average of 12 inches apart, but not more than 18 inches apart.
 3. Weld Spacing: Space and locate welds as indicated.
 4. Weld Washers: Install weld washers at each weld location.

- B. Side-Lap and Perimeter Edge Fastening: Fasten side laps and perimeter edges of panels between supports, at intervals not exceeding the lesser of 1/2 of the span or 36 inches, and as follows:
 1. Mechanically fasten with self-drilling No. 10 diameter or larger carbon-steel screws.
 2. Mechanically clinch or button punch.
 3. Fasten with a minimum of 1-1/2-inch long welds.

- C. End Bearing: Install deck ends over supporting frame with a minimum end bearing of 2 inches, with end joints as follows:
 - 1. End Joints: Lapped.
- D. Shear Connectors: Weld shear connectors through deck to supporting frame according to AWS D1.1 and manufacturer's written instructions. Butt end joints of deck panels; do not overlap. Remove and discard arc shields after welding shear connectors.
- E. Pour Stops and Girder Fillers: Weld steel sheet pour stops and girder fillers to supporting structure according to SDI recommendations, unless otherwise indicated.
- F. Floor Deck Closures: Weld steel sheet column closures, cell closures, and Z-closures to deck, according to SDI recommendations, to provide tight-fitting closures at open ends of ribs and sides of decking. Weld cover plates at changes in direction of floor deck panels, unless otherwise indicated.
- G. Install piercing hanger tabs not more than 14 inches apart in both directions, within 9 inches of walls at ends, and not more than 12 inches from walls at sides, unless otherwise indicated.

3.5 FIELD QUALITY CONTROL

- A. Testing: Commissioner will engage a qualified independent testing agency to perform field quality-control testing.
- B. Field welds will be subject to inspection.
- C. Shear connector stud welds will be inspected and tested according to AWS D1.1 for stud welding and as follows:
 - 1. Shear connector stud welds will be visually inspected.
 - 2. Bend tests will be performed if visual inspections reveal less than a full 360-degree flash or welding repairs to any shear connector stud.
 - 3. Tests will be conducted on additional shear connector studs if weld fracture occurs on shear connector studs already tested according to AWS D1.1.
- D. Testing agency will report test results promptly and in writing to Contractor and Commissioner.
- E. Remove and replace work that does not comply with specified requirements.
- F. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.

3.6 REPAIRS AND PROTECTION

- A. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint according to ASTM A 780 and manufacturer's written instructions.

- B. Repair Painting: Wire brush and clean rust spots, welds, and abraded areas on both surfaces of prime-painted deck immediately after installation, and apply repair paint.
 - 1. Apply repair paint, of same color as adjacent shop-primed deck, to bottom surfaces of deck exposed to view.
 - 2. Wire brushing, cleaning, and repair painting of bottom deck surfaces are included in Division 9 Section
- C. Repair Painting: Wire brushing, cleaning and repair painting of rust spots, welds, and abraded areas of both deck surfaces are included in Division 9 Section
- D. Provide final protection and maintain conditions to ensure that steel deck is without damage or deterioration at time of Substantial Completion.

END OF SECTION 05310

SECTION 055000

MISCELLANEOUS METALS

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the miscellaneous metal work as indicated on the drawings and/or specified herein, including, but not limited to, the following:
1. Rough hardware.
 2. Vertical steel ladders.
 3. Weathering steel.
 4. Steel sheathing
 5. Steel pipe handrails and railings.
 6. Steel picket fencing.
 7. Roof railing.
 8. Loose steel lintels.
 9. Light steel framing and supports, not included as part of work of other trades.
 10. Steel gratings and frames.
 11. Steel channel and angles.
 12. Structural steel door frame and supports at overhead doors.
 13. Cast thresholds.
 14. Miscellaneous steel trim, corner guards, angle guards and channels.
 15. Sleeves in concrete walls and slabs.
 16. Formed aluminum C-Channel.

17. Steel framing, bracing, supports, anchors, bolts, shims, fastenings, and all other supplementary parts indicated on drawings or as required to complete each item of work of this Section.
18. Prime painting, touch-up painting, galvanizing and separation of dissimilar metals for work of this Section.
19. Cutting, fitting, drilling and tapping work of this Section to accommodate work of other Sections and of concrete, masonry or other materials as required for attaching and installing work of this Section.

1.3 RELATED SECTIONS

- A. Painting - Section 099000.

1.4 QUALITY ASSURANCE

- A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting where taking field measurements before fabrication might delay work.
- B. Shop Assembly: Pre-assemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for re-assembly and coordinated installation.
- C. Reference Standards: The work is subject to requirements of applicable portions of the following standards:
 1. "Manual of Steel Construction," American Institute of Steel Construction.
 2. AWS D1-1 "Structural Welding Code," American Welding Society.
 3. SSPC SP-3 "Surface Preparation Specification No. 3, Power Tool Cleaning," Steel Structures Painting Council.
 4. SSPC PA-1 "Painting Application Specification," Steel Structures Painting Council.
 5. "Handbook on Bolt, Nut and Rivet Standards," Industrial Fasteners Institute.
- D. Steel Materials: For steel to be hot dip-galvanized, provide steel chemically suitable for metal coatings complying with the following requirements: carbon below 0.25 percent, silicon below 0.24 percent, phosphorous below 0.05 percent, and manganese below 1.35 percent. Notify galvanizer if steel does not comply with these requirements to determine suitability for processing.
- E. Engage the services of a galvanizer who has demonstrated a minimum of three (3) years' experience in the successful performance of the processes outlined in this specification in the facility where the work is to be done and who will apply the galvanizing and coatings within the same facility as outlined herein. The Commissioner has the right to inspect and approve or reject the galvanizer/galvanizing facility.

- F. The galvanizer/galvanizing facility must have an ongoing Quality Control/Quality Assurance program which has been in effect for a minimum of three (3) years and shall provide the Commissioner with process and final inspection documentation. The galvanizer/galvanizing facility must have an on-premise testing facility capable of measuring the chemical and metallurgical composition of the galvanizing bath and pickling tanks.
- G. Inspection and testing of hot-dip galvanized coating shall be done under the guidelines provided in the American Hot-Dip Galvanizers Association (AGA) publication "Inspection of Products Hot-Dip Galvanized After Fabrication."

1.5 PERFORMANCE STANDARDS

- A. Railings shall be constructed to conform to the following performance standards:
 - 1. Railings shall be designed to resist loads per New York City Building Code.

1.6 SUBMITTALS

- A. Manufacturer's Literature: Submit manufacturer's specifications, load tables, dimension diagrams, anchor details and installation instructions for products to be used in the fabrication of miscellaneous metal work, including paint products.
- B. Shop Drawings: Shop drawings for the fabrication and erection of all assemblies of miscellaneous iron work which are not completely shown by manufacturer's data sheets. Include plans and elevations at not less than 1" to 1'-0" scale, and include details of sections and connections at not less than 3" to 1'-0" scale. Show anchorage and accessory items.
- C. Engineering Data
 - 1. Before any railings are fabricated, submit engineering data drawings to the Commissioner for review indicating how performance standards specified here shall be met. The Contractor is responsible for the structural design and supports for these systems and must show his proposed systems on these drawings.
 - 2. These drawings must show all load conditions and design calculations relative to connections, fastening devices and anchorage, as well as size and gauge of members. Calculations and drawings must be prepared by a Structural Engineer licensed in the State of New York and shall be signed and sealed by this Engineer.
- D. Welding shall be indicated on shop drawings using AWS symbols and showing length, size and spacing (if not continuous). Auxiliary views shall be shown to clarify all welding. Notes such as 1/4" weld, weld and tack weld are not acceptable.
- E. Certification: For items to be hot-dip galvanized, identify each item galvanized and to show compliance of application. The Certificate shall be signed by the galvanizer and shall contain a detailed description of the material processed and the ASTM standard used for the coating and, the weight of the coating. In addition, and as attachment to Certification, submit reports of testing and inspections indicating compliance with the provisions of this Section.

PART 2 PRODUCTS

2.1 MATERIALS

A. Metals

1. Metal Surfaces, General: For fabrication of miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.
 2. Steel Plates, Shapes and Bars: ASTM A 36.
 3. Steel Bar Grating: ASTM A 1011/A or ASTM A 36.
 4. Steel Tubing: Cold formed, ASTM A 500; or hot rolled, ASTM A 501.
 5. Structural Steel Sheet: Hot rolled, ASTM A 570; or cold rolled, ASTM A 611, Class 1; of grade required for design loading.
 6. Galvanized Structural Steel Sheet: ASTM A 924, of grade required for design loading. Coating designation G90.
 7. Steel Pipe: ASTM A 53, type and grade as selected by fabricator and as required for design loading; black finish unless galvanizing is indicated; standard weight (Schedule 40), unless otherwise indicated.
 8. Gray Iron Castings: ASTM A 48, Class 30, unless another class is indicated or required by structural loads.
 9. Malleable Iron Castings: ASTM A 47, grade as selected by fabricator.
 10. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.
 11. Concrete Inserts: Threaded or wedge type; galvanized ferrous castings, either malleable iron, ASTM A 47, or cast steel, ASTM A 27. Provide bolts, washers and shims as required, hot-dip galvanized, ASTM A 153.
- B. Provide weathering architectural steel panels at fence conforming to ASTM A606, ASTM 588 and ASTM A242, in thickness as required by performance criteria but not less than 3/16". Use the specific alloys noted above as required to suit joint lines and panels dimensions as shown on the drawings without deviation in scope and performance.
- #### C. Fasteners
1. General: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.
 2. Bolts and Nuts: Regular hexagon head type, ASTM A 307, Grade A.

3. Anchor Bolts: ASTM F 1554, Grade 36.
4. Lag Bolts: ASME B18.2.1.
5. Machine Screws: ASME B18.6.3.
6. Plain Washers: Round, carbon steel, ASME B18.22.1.
7. Masonry Anchorage Devices: Expansion shields, FS FF-S-325.
8. Toggle Bolts: Tumble-wing type, FS FF-B-588, type, class and style as required.
9. Lock Washers: Helical spring type carbon steel, ASME B18.21.1.

D. Aluminum

1. Comply with the following standards for the forms and types of aluminum for the required items of work.
 - a. Alloy and Temper: Provide alloy and temper as indicated or as otherwise recommended by the aluminum producer or finisher.
 - b. Aluminum Extrusions, Bars and Shapes: Alloy and temper recommended by aluminum producer or finisher for type of use and finish indicated, and with not less than the strength and durability properties specified in ASTM B 221 for 6063-T6.
 - c. Extruded Pipe and Tube: ASTM B 429, alloy 6063-T6.
 - d. Aluminum Plate and Sheet: Alloy and temper recommended by aluminum producer or finisher for type of use and finish indicated, and with not less than the strength and durability properties specified in ASTM B 209, alloy 6061-T6.
 - e. Bars, Rods and Wire: ASTM B 211.
 - f. Drawn Seamless Tube: ASTM B 483, alloy 6063-T832.
 - g. Castings: ASTM B 26; alloy A356-T6.
 - h. Forgings: ASTM B 247, alloy 6061-T6.
- E. Shop Paint: Shop prime all non-galvanized miscellaneous metal items using Series 88 Azeron Primer made by Tnemec, ICI Devoe "Rust Guard" quick dry alkyd shop coat No. 41403, or "Interlac 393" by International Protection Coatings or approved equal.
 1. If steel is to receive high performance coating as noted in Section 099000, shop prime using primer noted in Section 099000.
- F. Bituminous Paint: Cold applied asphalt emulsion complying with ASTM D 1187.
- G. Galvanize Repair Coating: For touching up galvanized surfaces after erection, provide repair coating that is V.O.C. compliant, equal to "Silver Galv" made by Z.R.C. Worldwide or approved equal. Apply to a dry film thickness of 1.5 to 3.0 mils.

2.2 PRIME PAINTING

- A. Scope: All ferrous metal (except galvanized steel) shall be cleaned and shop painted with one coat of specified ferrous metal primer. No shop prime paint required on galvanized steel or aluminum work.
- B. Cleaning: Conform to Steel Structures Painting Council Surface Preparation Specification SP 3 (latest edition) "Power Tool Cleaning" for cleaning of ferrous metals which are to receive shop prime coat.
 - 1. Steel to get high performance coating as noted in Section 099000 shall be cleaned as per SSPC SP.6 "Commercial Blast Cleaning."
- C. Application
 - 1. Apply shop prime coat immediately after cleaning metal. Apply paint in dry weather or under cover. Metal surfaces shall be free from frost or moisture when painted. Paint all metal surfaces including edges, joints, holes, corners, etc.
 - 2. Paint surfaces which will be concealed after shop assembly prior to such assembly. Apply paint in accordance with approved paint manufacturer's printed instructions, and the use of any thinners, adulterants or admixtures shall be only as stated in said instructions.
 - 3. Paint shall uniformly and completely cover the metal surfaces, 2.0 mils minimum dry film thickness. No work shall be shipped until the shop prime coat thereon has dried.
- D. Touch-Up: In the shop, after assembly and in the field, after installation of work of this Section, touch-up damaged or abraded portions of shop prime paint with specified ferrous metal primer.
- E. Apply one shop coat to fabricated metal items, except apply two (2) coats of paint to surfaces inaccessible after assembly or erection. Change color of second coat to distinguish it from the first.

2.3 GALVANIZING

- A. Scope: All ferrous metal exposed to the weather, and all ferrous metals indicated on drawings or in specifications to be galvanized, shall be cleaned and then hot-dipped galvanized after fabrication.
- B. Avoid fabrication techniques that could cause distortion or embrittlement of steel items to be hot-dip galvanized. Fabricator shall consult with hot-dip galvanizer regarding potential warpage problems or handling problems during the galvanizing process that may require adjustment of fabrication techniques or design before finalizing shop drawings and beginning of fabrication.
- C. Cleaning: Thoroughly clean metal surfaces of all mill scale, rust, dirt, grease, oil, moisture and other contaminants prior to galvanizing.

- D. Application: Hot-dip galvanizing shall conform to the following::
1. ASTM A 143: Safeguarding Against Embrittlement of Hot-Dip Galvanized Structural Steel.
 2. ASTM A 123: Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 3. ASTM A 153: Galvanized Coating on Iron and Steel Hardware - Table 1.
 4. ASTM A 384: Practice for Safeguarding Against Warpage and Distortion During Hot-Dip Galvanizing of Steel Assemblies.
 5. ASTM A 385: Practice for Providing High Quality Zinc Coatings.
 6. ASTM A 924: Galvanized Coating on Steel Sheets.
 7. Minimum weight of galvanized coating shall be two (2) oz. per square foot of surface.
- E. Fabricate joints which will be exposed to weather in a manner to exclude water or provide weep holes where water may accumulate.
- F. All galvanized materials must be inspected for compliance with these specifications and marked with a stamp indicating the name of the galvanizer, the weight of the coating, and the appropriate ASTM number.
- G. To minimize surface imperfection (eg: flux inclusions), material to be galvanized shall be dipped into a solution of Zinc Ammonium Chloride (pre-flux) immediately prior to galvanizing. The type of galvanizing process utilizing a flux blanket overlaying the molten zinc will not be permitted.
- H. After galvanizing all materials not exposed to view must be chromated by dipping material in a 0.2% chromic acid solution.
- I. Galvanized surfaces, where exposed to view, must have a smooth, level surface finish. Where this does not occur, piece shall be rejected and replaced to the acceptance of the Commissioner.

2.4 SHOP FINISHING

- A. General
1. Comply with NAAMM "Metal Finishes Manual" for finish designations and application recommendations, except as otherwise indicated.
 2. Provide colors or color matches as indicated on selected samples.
 3. Protect mechanical finishes on exposed surfaces from damage by application of strippable temporary protective covering prior to shipment.

4. Corrosion Protection: Coat concealed surfaces which will be in contact with concrete, masonry, wood or dissimilar metals, in exterior work and work to be built into exterior and below grade walls and decks, with a heavy coat of bituminous paint. Do not extend coating onto exposed surfaces.

B. Aluminum

1. High Performance Coating: AA-C12C42R1x, cleaned with inhibited chemicals, conversion coated with an acid-chromate-fluoride-phosphate treatment, and painted with organic coating specified below. Apply finish in strict compliance with paint manufacturer's instructions using a licensed applicator.
 - a. Fluorocarbon Two-Coat System: Manufacturer's standard two-coat, thermo-cured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2605-98.
 - b. Custom color and gloss as selected by the Commissioner.

2.5 PROTECTIVE COATINGS

- A. Whenever dissimilar metals will be in contact, separate contact surfaces by coating each contact surface prior to assembly or installation with one coat of specified bituminous paint, which shall be in addition to the specified shop prime paint. Mask off those surfaces not required to receive protective coating.

2.6 WORKMANSHIP

A. General

1. Miscellaneous metal work shall be fabricated by an experienced fabricator or manufacturer and installed by an experienced tradesman.
2. Materials, methods of fabrication, fitting, assembly, bracing, supporting, fastening, operating devices, and erection shall be in accordance with drawings and specifications, approved shop drawings, and best practices of the industry, using new and clean materials as specified, having structural properties sufficient to safely sustain or withstand stresses and strains to which materials and assembled work will be subjected.
3. All work shall be accurately and neatly fabricated, assembled and erected.

- B. Shop Assembly: Insofar as practicable, fitting and assembly of work shall be done in shop. Shop assemble work in largest practical sizes to minimize field work. It is the responsibility of the miscellaneous metal subcontractor to assure himself that the shop-fabricated miscellaneous metal items will properly fit the field condition. In the event that shop-fabricated miscellaneous metal items do not fit the field condition, the item shall be returned to the shop for correction.

- C. Cutting: Cut metal by sawing, shearing, or blanking. Flame cutting will be permitted only if cut edges are ground back to clean, smooth edges. Make cuts accurate, clean, sharp and free of burrs, without deforming adjacent surfaces or metals.

- D. Holes: Drill or cleanly punch holes; do not burn.
- E. Connections: Make connections with tight joints, capable of developing full strength of member, flush unless indicated otherwise, formed to exclude water where exposed to weather. Locate joints where least conspicuous. Unless indicated otherwise, weld or bolt shop connections; bolt or screw field connections. Provide expansion and contraction joints to allow for thermal movement of metal at locations and by methods approved by Commissioner.
 - 1. Welding
 - a. Shall be in accordance with AWS D1.1 Structural Welding Code of the American Welding Society, and shall be done with electrodes and/or methods recommended by the manufacturer of the metals being welded.
 - b. Welds shall be continuous, except where spot welding is specifically permitted. Welds exposed to view shall be ground flush and dressed smooth with and to match finish of adjoining surfaces; undercut metal edges where welds are required to be flush.
 - c. All welds on or behind surfaces which will be exposed to view shall be done so as to prevent distortion of finished surface. Remove weld spatter and welding oxides from all welded surfaces.
 - 2. Bolts and Screws: Make threaded connections tight with threads entirely concealed. Use lock nuts. Bolts and screw heads exposed to view shall be flat and countersunk. Cut off projecting ends of exposed bolts and screws flush with nuts or adjacent metal.
- F. Operating Mechanism: Operating devices (i.e. pivots, hinges, etc.) mechanism and hardware used in connection with this work shall be fabricated, assembled, installed and adjusted after installation so that they will operate smoothly, freely, noiselessly and without excessive friction.
- G. Built-In Work: Furnish anchor bolts, inserts, plates and any other anchorage devices, and all other items specified under this Section of the Specifications to be built into concrete, masonry or work of other trades, with necessary templates and instructions, and in ample time to facilitate proper placing and installation.
- H. Supplementary Parts: Provide as necessary to complete each item of work, even though such supplementary parts are not shown or specified.
- I. Coordination: Accurately cut, fit, drill and tap work of this Section to accommodate and fit work of other trades. Furnish or obtain, as applicable, templates and drawings to or from applicable trades for proper coordination of this work.
- J. Exposed Work
 - 1. In addition to requirements specified herein and shown on drawings, all surfaces exposed to view shall be clean and free from dirt, stains, grease, scratches, distortions, waves, dents, buckles, tool marks, burrs, and other defects which mar appearance of finished work.

2. Metal work exposed to view shall be straight and true to line or curve, smooth arrises and angles as sharp as practicable, miters formed in true alignment, profiles accurately intersecting, and with joints carefully matched to produce continuity of line and design.
 3. Exposed fastenings, where permitted, shall be of the same material, color and finish as the metal to which applied, unless otherwise indicated, and shall be of the smallest practicable size.
- K. Preparation for Hot-Dip Galvanizing: Fabricator shall correctly prepare assemblies for galvanizing in consultation with galvanizer and in accordance with applicable Reference Standards and applicable AGA publications for the "Design of Products to be Hot-Dip galvanized After Fabrication." Preparation shall include but not be limited to the following:
1. Remove welding flux.
 2. Drill appropriate vent holes and provide for drainage in inconspicuous locations of hollow sections and semi-enclosed elements. After galvanizing, plug vent holes with shaped lead and grind smooth.

2.7 MISCELLANEOUS METALS ITEMS

A. Rough Hardware

1. Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures. Straight bolts and other stock rough hardware items are specified in Division 6 Sections.
2. Fabricate items to sizes, shapes and dimensions required. Furnish malleable iron washers for heads and nuts which bear on wood connections; elsewhere, furnish steel washers.

B. Steel Pipe Handrails

1. Steel pipe of size shown on Drawings, Schedule 40. Fittings shall be flush type, malleable of cast iron. Brackets shall be malleable iron, design as selected by the Commissioner.
2. Construction: Form direction changes in rails using solid bar stock or elbows. Connections shall be shop welded and ground smooth and flush, except where field connections and expansion joints are required. Field connections may be welded, internal sleeve and plug weld, or internal sleeve and set screw.
3. Secure handrails to walls with wall brackets. Provide brackets of malleable iron castings, with not more than three (3) inches clearance from inside face of handrail to wall surface. Neatly drill wall plate portion of the bracket into concrete or masonry to receive bolts for concealed anchorage. For installation at drywall, Drywall trades shall provide plate to receive wall plate portion of bracket and anchor or bolt wall plate through drywall to supporting steel plate. Locate brackets at not more than 5'-0" o.c. unless otherwise shown.

4. Provide wall return fittings of cast iron, flush type, with the same projection as that specified for wall brackets.
5. Longitudinal members shall be parallel with each other and with floor surface or shape of stair to a tolerance of 1/8" in 10'-0" linear feet. Center line of members within each run of railing shall be in the plane.
6. For steel pipe posts where indicated, anchor posts in concrete by means of pipe sleeves set and anchored into concrete. Provide sleeves of galvanized steel pipe, not less than six (6) inches long and having an inside diameter not less than 1/2" greater than outside diameter of the inserted pipe. Provide steel plate closure secure to bottom of sleeve and of width and length not less than one (1) inch greater than outside diameter of sleeve. After posts have been inserted into sleeves, fill annular space between post and sleeve solid with non-shrink, non-ferrous grout. Cover anchorage joint with a round steel flange welded to post. Posts shall be set plumb within 1/8" vertical tolerance.
7. Steel pipe handrails shall be capable of resisting a two hundred (200) lb. force applied to rail from any direction and a uniformly distributed load of fifty (50) lbs. per linear foot applied downward or horizontally, loads not to act simultaneously.

C. Loose Steel Lintels

1. Provide loose structural steel lintels for openings and recesses in masonry walls and partitions as shown. Weld adjoining members together to form a single unit where indicated. Provide not less than eight (8) inches bearing at each side of openings, unless otherwise indicated.
2. Loose lintels shall conform to the following Schedule:

Opening Width (Maximum)	WALL THICKNESS		
	4 inches	6 inches	8 inches*
2'-0"	3-1/2" x 3-1/2" x 1/4"	6" x 4" x 5/16"	3-1/2" x 3-1/2" x 1/4"
3'-0"	3-1/2" x 3-1/2" x 5/16"	6" x 4" x 5/16"	3-1/2" x 3-1/2" x 5/16"
4'-0"	3-1/2" x 3-1/2" x 5/16"	6" x 4" x 5/16"	3-1/2" x 3-1/2" x 5/16"
5'-0"	4" x 3-1/2" x 3/8"	6" x 4" x 3/8"	4" x 3-1/2" x 5/16"
6'-0"	5" x 3-1/2" x 3/8"	6" x 4" x 3/8"	5" x 3-1/2" x 5/16"
7'-0"	5" x 3-1/2" x 3/8"	5" x 5" x 1/2"	5" x 3-1/2" x 3/8"

8'-0"	5" x 3-1/2" x 3/8"	5" x 5" x 5/8"	5" x 3-1/2" x 3/8"
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* Two angles at all openings in eight (8) inch walls.

3. At columns or vertical surfaces where lintels cannot bear on masonry, provide clip angles sized for structural capacity of lintel.

D. Miscellaneous Light Steel Framing

1. Light steel framing, bracing, supports, framing, clip angles, shelf angles, plates, etc., shall be of such shapes and sizes as indicated on the drawings and details or as required to suit the condition and shall be provided with all necessary supports and reinforcing such as hangers, braces, struts, clip angles, anchors, bolts, nuts, welds, etc., as required to properly support and rigidly fasten and anchor same in place and to steel, concrete, masonry and all other connecting and adjoining work.
2. All light steel framing steel shall be furnished and erected in accordance with the applicable requirements of the "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings" by the American Institute of Steel Construction and as specified herein.

E. Steel Gratings and Frames

1. Provide hot dipped galvanized steel gratings complying with FS RR-G-661 with rectangular cross bars welded to bearing bars. Bars to have plain wearing surface.
2. Manufacturer: Provide gratings manufactured by Reliance, Borden, Irving Subway Grating, or approved equal.
3. Hinged Section: Provide hinged sections in areaway gratings where required by the drawings. Each hinged section up to 4'-0" wide shall be provided with two (2) five knuckle, fast pin, regular weight, plain bearing, wrought bronze butt hinges. Each hinged section over 4'-0" wide shall be provided with three (3) butt hinges. Hinged sections shall have provisions for padlocking on the underside.
4. Furnish grating frames, with corners mitered, welded and ground smooth, and with welded-on straps for secure anchorage into concrete. Frames and anchors to be galvanized.
5. Structural Performance: Provide gratings capable of withstanding the following structural loads without exceeding the allowable design working stress of the materials involved, including anchors and connections:
 - a. Floors: Capable of withstanding a uniform load of 250 lbf/sq. ft. or a concentrated load of 3000 lbf, whichever produces the greater stress.
 - b. Walkways and Elevated Platforms Other Than Exits: Capable of withstanding a uniform load of 60 lbf/sq. ft. Limit deflection to L/360 or 1/4", whichever is less.

- c. Walkways and Elevated Platforms Used as Exits: Capable of withstanding a uniform of 100 lbf/sq. ft. or a concentrated load of 300 lbf on an area of 4 sq. in., whichever produces the greater stress. Limit deflection to $L/360$ or $1/4"$, whichever is less.
 - d. Sidewalks and Vehicular Driveways: Capable of withstanding a uniform load of 250 lbf/sq. ft. or a concentrated load of 8000 lbf, whichever produces the greater stress.
- F. Steel Bollards: Provide six (6) inches O.D. extra strong (Schedule 80) steel pipe, concrete filled, with base of steel plate for mounting to anchor bolts in concrete foundation. Rabbet top of steel pipe and insert $1/4"$ steel plate cap, flush with top of pipe. Weld top of cap to pipe and grind smooth and flush.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions where miscellaneous metal is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 ERECTION

- A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; including threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws, and other connectors as required.
- B. Cutting, Fitting and Placement: Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into concrete, masonry, or similar construction.
- C. Fitting Connections: Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units which have been hot dip galvanized after fabrication, and are intended for bolted or screwed field connections.
- D. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance, and quality of welds made, and methods used in correcting welding work.
- E. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.

- F. Field Touch-Up of Galvanized Surfaces: Touch-up shop applied galvanized coatings damaged during handling and installation. Use galvanizing repair coating specified herein for galvanized surfaces.

END OF SECTION

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SECTION 062000

CARPENTRY

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the carpentry work as shown on the drawings and/or specified herein, including, but not limited to, the following:
 - 1. Blocking and miscellaneous wood, including plywood wall lining.
 - 2. Rough hardware.
 - 3. Installation only of finish hardware.
 - 4. Installation only of doors and hollow metal frames.

1.3 RELATED SECTIONS

- A. Roofing - Section 075300.
- B. Steel doors and frames - Section 081113.

1.4 QUALITY ASSURANCE

- A. Lumber Standard: Comply with PS 20.
- B. Plywood Standard: Comply with PS 1 and American Plywood Assoc. (APA).
- C. Shop fabricate carpentry work to the extent feasible and where shop fabrication will result in better workmanship than feasible for on-site fabrication.
- D. Grade Marks: Identify lumber and plywood by official grade mark.
 - 1. Lumber: Grade stamp to contain symbol of grading agency certified by Board of Review, American Lumber Standards Committee, mill number or name, grade of lumber, species grouping or combination designation, rules under which graded where applicable, and condition of seasoning at time of manufacture.
 - a. S-Dry: Maximum nineteen (19) percent moisture content as per ASTM D 2016.

- E. Installation of doors, frames and hardware shall conform to the minimum standards of "Installation Guides for Doors and Hardware" of the Door and Hardware Institute.

1.5 SUBMITTALS

- A. Pressure Treatment: Include certification by treating plant stating chemicals and process used, net amount of salts retained and conformance with applicable standards.
- B. Fire-Retardant Treatment: Include certification by treating plant that treatment material complies with governing ordinances and that treatment will not bleed through finished surfaces.

1.6 PRODUCT HANDLING

- A. Deliver carpentry materials to the site ready to use with each piece of lumber clearly marked as to grade, type and mill, and place in an area protected from the elements.
- B. Deliver rough hardware in sealed kegs and/or other containers which shall bear labels as to type and kind.
- C. Pile lumber for rough usage, when delivered to the site in stacks to insure drainage and with a minimum clearance of six (6) inches above grade. Cover stacks with tarpaulins or other watertight coverings. Store grounds and similar small sized lumber inside the building as soon as possible after delivery.
- D. Do not store seasoned lumber in wet or damp portions of the building.
- E. Protect fire retardant treated materials against high humidity and moisture during storage and erection.
- F. Remove delivered materials which do not conform to specified grading rules or are otherwise not suitable for installation from the job site and replace with acceptable materials.
- G. Hardware shall be sorted and stored in space assigned by Contractor and shall be kept at all times under lock and key. The safety and preservation of all items delivered will be the responsibility of the Contractor.

1.7 JOB CONDITIONS

- A. Installer must examine the substrates and supporting structure and the conditions under which the carpentry work is to be installed, and notify the Contractor in writing of conditions detrimental to the work. Do not proceed with the installation until unsatisfactory conditions have been corrected in a manner acceptable to the Installer and the Commissioner.
- B. Coordination: Fit carpentry work to other work; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow proper attachment of other work.

PART 2 PRODUCTS

2.1 WOOD MATERIAL

A. General

1. All wood shall be sound, flat, straight, well seasoned, thoroughly dry and free from all defects. Warped or twisted wood shall not be used.
2. For miscellaneous wood blocking, grounds, furring as required, use Utility Grade Coastal Douglas Fir or Southern Pine, free from knots, shakes, rot or other defects, straight, square edges and straight grain, air seasoned with maximum moisture content of nineteen (19) percent. Wood shall be S4S, S-Dry, complying with PS-20.
3. Provide 3/4" thick C-D EXT-APA plywood, fire retardant treated as specified herein.

B. Wood Treatment

1. All interior wood material specified herein shall be fire retardant treated to comply with the AWWA standards (C20 for lumber, C27 for plywood) for pressure impregnation with fire retardant chemical to achieve a flame spread rating of not more than 25 (UL Class "FR-S") when tested in accordance with UL Test 723 or ASTM E 84. The fire retardant chemicals used to treat the lumber must comply with FR-1 of AWWA Standard P17 and be free of halogens, sulfates and ammonium phosphate.
 - a. After treatment, kiln dry to a moisture content of fifteen (15) percent; if wood is to be painted or finished, kiln dry to a moisture content of twelve (12) percent. Treatment shall be equal to "Dricon" made by Arch Wood Protection Inc., Koppers, Hoover or approved equal. Provide UL approved identification on treated materials.
2. For exterior blocking, roofing and sheet metal, pressure treat wood with copper azole, Type B (CA-B); ammoniacal copper quat (ACQ) or similar preservative product that contains no arsenic or chromium. Preservative shall comply with AWWA Standard C-2 for lumber and C-9 for plywood, (.25 lbs./cubic foot of chemical in wood).
 - a. After treatment, kiln dry to a maximum moisture content of fifteen (15) percent. Treatment shall be equal to "Wolmanized Natural Select" made by Arch Wood Protection Inc. or approved equal.
3. Treated wood which is cut or otherwise damaged shall be further treated in accordance with the AWWA Standard M-4.

2.2 HARDWARE

- A. Rough Hardware for Treated Woods and Exterior Use: Hot-dipped galvanized or Type 304 stainless steel.
- B. Nails: Common steel wire, untreated for interior work as per ASTM F 1667.

- C. Bolts: Standard mild steel, square head machine bolts with square nuts and malleable iron or steel plate washers or carriage bolts with square nuts and cut washers conforming to the following:
 - 1. Bolts: ASTM A 307, Grade A.
 - 2. Nuts: ASTM A 563.
 - 3. Lag Screws and Bolts: ASME B 18.2.1.
- D. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
 - 1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
 - 2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2; use stainless steel for treated woods and exterior use.
- E. Wood Screws: ASME B 18.6.1.
- F. Concrete and Masonry Anchors: Standard expansion-shield self-drilling type concrete anchors where so shown or noted on the drawings, or where approved by the Commissioner.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions where carpentry is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 INSTALLATION OF FINISH HARDWARE

- A. Hardware shall be carefully fitted and securely attached, in accordance with these specifications and the instructions of the various manufacturers.
- B. Unless otherwise noted, mount hardware units at heights established in Section 081113.
- C. Install each hardware item in compliance with the manufacturer's instructions and recommendations. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way, install each item completely and then remove and store in a secure place during the finish application. After completion of the finishes, re-install each item. Do not install surface-mounted items until finishes have been completed on the substrate.

- D. Set units level, plumb and true to line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- E. Drill and countersink units which are not factory prepared for anchorage fasteners. Space fasteners and anchors in accordance with industry standards.
- F. Cut and fit threshold and floor covers to profile of door frames, with mitered corners and hair-line joints. Join units with concealed welds or concealed mechanical joints. Cut smooth openings for spindles, bolts and similar items, if any.
- G. All keys used shall be construction keys which are to be tagged with fiber discs as approved, clearly labeled with identifying inscriptions and then neatly arranged in a temporary cabinet. All construction keys shall be returned to the City of New York.
- H. Adjusting and Cleaning
 - 1. Adjust and check each operating item of hardware and each door, to ensure proper operation and function of every unit. Lubricate moving parts with type lubrication recommended by manufacturer (graphite type if no other recommended). Replace units which cannot be adjusted and lubricated to operate freely and smoothly as intended for the application made.
 - 2. Final Adjustment: Wherever hardware installation is made more than one month prior to acceptance or occupancy of a space or area, return to the work during the week prior to acceptance or occupancy, and make a final check and adjustment of all hardware items in such space or area. Clean and re-lubricate operating items as necessary to restore proper function and finish of hardware and doors. Adjust door control devices to compensate for final operation of heating and ventilating equipment.

3.3 INSTALLATION OF DOORS AND FRAMES

A. Preparation

- 1. Remove welded-in shipping spreaders installed at factory.
- 2. Prior to installation and with installation spreaders in place, adjust and securely brace standard steel 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 on a perpendicular line from head to floor.

3. Drill and tap doors and frames to receive non-templated mortised and surface-mounted door hardware.

B. Installation

1. General: Provide doors and frames of sizes, thicknesses, and designs indicated. Install steel doors and frames plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.
2. Set frames accurately in position; plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
 - a. Install frames in accordance with ANSI 250.11-20001, Recommended Erection Instructions for Steel Frames, unless more stringent requirements are specified herein.
 - b. At fire-protection-rated openings, install frames according to NFPA 80.
 - c. Where frames are fabricated in sections due to shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
 - d. Install frames with removable glazing stops located on secure side of opening.
 - e. Frames set in masonry walls shall have door silencers installed in frames before grouting.
 - f. Remove temporary braces necessary for installation only after frames have been properly set and secured.
 - g. Check plumb, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
3. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor and secure with post-installed expansion anchors.
 - a. Floor anchors may be set with powder-actuated fasteners instead of post-installed expansion anchors if so indicated and approved on Shop Drawings.
4. Metal-Stud Partitions: Solidly pack mineral-fiber insulation behind frames conforming to the requirements of Section 072100, "Thermal Insulation."
5. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with mortar; refer to Section 042000 "Unit Masonry" for installation of frames in masonry walls.
6. In-Place Concrete or Masonry Construction: Secure frames in place with post-installed expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
7. In-Place Gypsum Board Partitions: Secure frames in place with post-installed expansion anchors through floor anchors at each jamb. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.

8. Ceiling Struts: Extend struts vertically from top of frame at each jamb to supporting construction above, unless frame is anchored to masonry or to other structural support at each jamb. Bend top of struts to provide flush contact for securing to supporting construction above. Provide adjustable wedged or bolted anchorage to frame jamb members.
 9. Installation Tolerances: Adjust steel door frames for squareness, alignment, twist, and plumb to the tolerance given in HMMA 841 of ANSI/NAAMM, current edition.
 10. Steel Doors: Fit hollow metal doors accurately in frames to the tolerances given in HMMA 841 of ANSI/NAAMM, current edition.
 - a. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
 11. Glazing: Comply with installation requirements in Division 8 Section "Glass and Glazing" and with standard steel door and frame manufacturer's written instructions.
 - a. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c., and not more than 2 inches o.c. from each corner.
- C. Adjustments: Check and readjust operating finish hardware items just prior to final inspection. Leave work in complete and proper operating condition. Remove and replace defective work, including doors or frames which are warped, bowed or otherwise unacceptable.

3.4 BLOCKING AND MISCELLANEOUS WOOD

A. General

1. Erect rough carpentry true to line, levels and dimensions required; squared, aligned, plumbed, and securely fastened in place.
2. Shim where required to true up furring, blocking and the like. Use wood or metal shims only.
3. Do all cutting, fitting, drilling and tapping of other work as required to secure work in place and to perform the work included herein. Do all the cutting and fitting of carpentry work, for the work of other trades as required.

B. Blocking and Miscellaneous Wood

1. Furnish and install all wood grounds, furring, blocking, curbs, bucks, nailers, etc., that may be necessary and required in connection with the carpentry and with the work described for any other trades and including required carpentry for electrical fixtures. All blocking and nailers shall be continuous wherever required, whether or not so indicated.
2. Blocking shall be as required for the proper installation of the finished work and for items in mechanical sections as required. Blocking, edgings, stops, nailing strips, etc., shall be continuous, unless distinctly noted otherwise. Provide blocking as required to install all equipment. Provide blocking and nailers where shown or required to fasten interior sheet metal work.

3. Fastening for wood grounds, furring and blocking shall be of metal and of type and spacing as best suited to conditions. Hardened steel nails, expansion screws, toggle bolts, self-clinching nails, metal plugs, inserts or similar fastenings shall be used, of suitable type and size to draw the members into place and securely hold same.

C. Rough Lumber for Roofing and Sheet Metal

1. Furnish and install all wood nailing strips and wood blocking required in connection with respective types of roofing, fans, flashings, and sheet metal work, using preservative treated wood as herein before specified.
2. Wood blocking shall be of sizes and shapes as indicated on the drawings and/or designed for the reception of curb flashings for roof ventilators and similar items.
3. All nailing strips and blocking shall be carried out in accordance with the printed installation instructions, and/or recommendations of the accepted manufacturer of the roofing materials, and in coordination and cooperation with the sheet metal work trades.
4. All blocking and nailing strips shall be firmly secured in place using counter bored bolt and nut fastenings, or secured by any other proposed flush surfaced fastenings.
5. Wood nailing strips or blocking required to be embedded in concrete work shall be furnished in time due for placing, prior to start of concrete operations. Locations and spacings of nailing strips or blocking shall be performed in coordination with the concrete trades, as required for respective installations.

3.5 ROUGH HARDWARE

- A. Securely fasten rough carpentry together. Nail, spike, lag screw or bolt as required by conditions encountered in the field and the Contract Documents.
- B. Provide rough or framing hardware, such as nails, screws, bolts, anchors, hangers, clips, inserts, miscellaneous fastenings, and similar items of the best quality and of the proper size and kind to adequately secure the work together and in place, in a rigid and substantial manner.
- C. Secure rough carpentry to masonry with countersunk bolts in expansion sleeves or other acceptable manner, with fastenings not more than sixteen (16) inches apart. Secure woodwork to hollow masonry with toggle bolts spaced not more than sixteen (16) inches apart.
- D. Countersink bolts in nailers and other rough woodwork and include washers and nuts. Cut bolts off flush with surfaces and peen as may be required to receive finished work.
- E. Inserts to secure wood nailers to concrete shall be malleable iron threaded inserts with 3/8" diameter bolts of length to allow for countersinking. Locate at end of each nailer and at intervals not exceeding thirty (30) inches o.c.
- F. Furnish to the mason for building into the work, or attaching the work which is to be built in, anchors, bolts, wall plates bolted to masonry, corrugated wall plugs, nailing blocks, etc., which are required for the proper fastening and installation for the work or other items as called for in this Section.

- G. Detailed instructions with sketches of necessary requirements, shall be given to the masonry trade showing the location and other details of such nailing devices.

3.6 CLEANING UP

- A. General: Keep the premises in a neat, safe and orderly condition at all times during execution of this portion of the work, free from accumulation of sawdust, cut-ends and debris.
- B. Sweeping
 - 1. At the end of each working day, or more often if necessary, thoroughly sweep all surfaces where refuse from this portion of the work has settled.
 - 2. Remove the refuse to the area of the job site set aside for its storage.
 - 3. Upon completion of this portion of the work, thoroughly broom clean all surfaces.

END OF SECTION

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SECTION 071326

SHEET MEMBRANE WATERPROOFING

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. The Work of this Section includes all labor, materials, equipment, and services necessary to complete the sheet membrane waterproofing as shown on the drawings and/or specified herein, including, but not necessarily limited to, the following:
 - 1. Sheet membrane waterproofing, for foundation wall surfaces.

1.3 RELATED SECTIONS

- A. Concrete - Section 033000.

1.4 SUBMITTALS

- A. Shop Drawings: Typical installation details, showing details at flashings, at terminations, at joints, at intersection of horizontal and vertical surfaces, and at penetrations in membrane system.
- B. Samples – Submit
 - 1. Membrane, 6" x 6" samples of each membrane.
 - 2. 6" x 6" sample of flashing.
 - 3. 6" x 6" sample of drainage board.
- C. Manufacturer's Literature: Submit manufacturer's technical, safety data sheets, and installation literature for all materials of this Section. Submit Independent Test data indicating that membrane meets properties specified herein.
- D. General Contractor's Certification: Submit per Article 1.7.

1.5 STORAGE OF MATERIALS

- A. All materials shall be stored in their original tightly sealed containers or unopened packages; shall be clearly labeled with the manufacturer's name, brand name and number, and batch number of the material with expiration date where appropriate.

- B. Materials shall be stored in a neat and safe manner so as not to exceed the allowable live load of the storage area.
- C. Material shall be stored out of the weather in a clean, dry area.
- D. Liquid materials, such as adhesives, thinners and primers, shall be stored in areas away from sparks, open flames and excessive heat.

1.6 JOB CONDITIONS

- A. No application of waterproofing shall commence or proceed during inclement weather, or the threat of imminent precipitation.
- B. All surfaces to receive the system shall be thoroughly dry and free of dew or frost.
- C. Materials shall be stored until time of mixing at temperatures above 60 deg. F. to maintain a consistency suitable for mixing. Do no work below 40 deg. F.
- D. Prior to and during application, all dirt and dust shall be removed from surfaces either by vacuuming, sweeping, blowing with compressed air, or similar methods.
- E. Surfaces not designated to receive the system shall be properly masked or otherwise protected against accidental spillage or application of the material to those areas.

1.7 WARRANTY

- A. The manufacturer of the waterproofing system executed under this Section warrants the waterproofing system to be watertight and free from defects in materials for a period often (10) years from date of acceptance of this Contract, and that he, at his own expense, repair and/or replace all other work which may be damaged as a result of such defective work, and which becomes defective during the warranty period.

1.8 QUALITY ASSURANCE

- A. Preinstallation Conference: Approximately 2 weeks prior to scheduled commencement of waterproofing installation, meet at Project site with Waterproofing Installer; preparer of substrate to receive waterproofing; installers of other work in and around waterproofing that must precede, follow, or penetrate waterproofing (including Mechanical and Electrical Installers as applicable); Commissioner; City of New York; and waterproofing manufacturer's representative to review materials, procedures, schedules, and other requirements and conditions related to installing waterproofing.
- B. Qualifications of Subcontractors

1. Subcontractors: All work of this Section shall be performed by a subcontractor who is acceptable to the manufacturer of the waterproofing material.

C. Manufacturer's Representative/Contractor's Certification

1. Representative of the waterproofing material manufacturer shall be required to provide field instructions and supervision for the installation of the waterproofing systems at the start of the work of this Section.
2. The manufacturer's representative shall be required to make sure that the workmen for waterproofing systems on the site of the Project are fully instructed and trained in the handling and application of all the materials, and shall see that all the materials were correctly installed.
3. Upon completion of the Installation, submit to the Commissioner written certification that the representative of the manufacturer of the waterproofing material has supervised the work of this Section and that all materials were correctly installed.

1.9 PROTECTION

- A. Against Loads: Protect work of this Section against concentrated loads and any other loads or equipment that would damage the materials or work.
- B. Against Traffic: Do not permit traffic on horizontally installed work of this Section, except for workmen doing the work, during the installation, and after the installation until membrane systems are covered with protective boards or with the specified finishing materials.
- C. Against Damage: Protect vertically installed work of this section from damage by reinforcing and placement.
 1. Take and maintain necessary preventative measures to protect work of this Section from damage until Project is accepted.
 2. Rejection of Damaged Work
 - a. Damaged materials or work will be rejected.
 - b. Rejected materials or work must be immediately removed and replaced with new materials.

1.10 FIELD QUALITY CONTROL

- A. Construction Traffic:
 1. Limit construction traffic over completed membrane.
 2. General Contractor shall provide 1/2 in. plywood protection layer, where construction traffic is unavoidable.

- B. Inform Commissioner in writing on a daily basis of any of the following events. State specific location of each occurrence.
1. Buckling to the Waterproofing and other deformations as a result of ground water events.
 2. Leakage through the finished waterproofing installation.
 3. Damage by other trades.
- C. Provide Manufacturer's Representative's report (prior to backfill) stating that the waterproofing has been inspected and is acceptable and eligible for manufacturer's warranty.

PART 2 PRODUCTS

2.1 WATERPROOFING MEMBRANE

- A. Trade names used herein for membrane waterproofing are those of W.R. Grace. Other acceptable manufacturers include Sika, Greenstreak, Carlisle Coatings and Waterproofing, Henry Co. and Polyguard provided manufacturers noted substitute their equivalent products.
- B. For foundation wall waterproofing, provide "Bituthene 4000" sheet waterproofing membrane, 60 mils thick, and "Bituthene Liquid Membrane," 60 mils thick, for flashing, as manufactured by W. R. Grace or approved equal noted above.
- C. "Bituthene 4000" Conditioner: Latex/water based primer specifically formulated to provide adhesion of Bituthene Waterproofing Membranes.
1. If water based primer does not provide sufficient adhesion to substrate, substitute Bituthane Primer B-2 solvent based primer.
- D. Bituthene Elastomeric Mastic: Rubberized asphalt base mastic.
- E. Tape: Double sided synthetic adhesive tape equal to "Preprufe LT" and "HC."
- F. Protection Board: 1/4" thick semi-rigid protection board, "Bituthene Asphaltic Hardboard."
- G. Bituthene Liquid Membrane: Two-component 100% solids trowel grade asphalt modified urethane.
- H. "Hydroduct 220" Drainage Board/Composite: Prefabricated dimpled polystyrene drainage core with a non-woven filter fabric on one side and a polymer film on the reverse side by W.R. Grace.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions where membrane waterproofing is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work. Starting of work implies acceptance of substrate.

3.2 PREPARATION OF SURFACES TO RECEIVE WATERPROOFING

- A. Conform to the requirements of Bituthene Techletter No. BTL 82-02, published by W. R. Grace if using W.R. Grace products.

3.3 INSTALLATION

- A. General: Conform to recommendations and published specifications of the manufacturer' including environmental requirements and preparation requirements to receive waterproofing.

B.. Foundation Walls

1. General: The membrane, when in place must withstand a minimum static ground water pressure of 150 feet.
2. Priming: Application of primer shall be limited to what can be covered with Bituthene Waterproofing Membrane in a given work day. Primed areas not covered by membrane during the work day will be reprimed. Apply primer by spray, roller or brush at a rate of 250 - 350 sq. ft. per gallon. Roller shall be natural material such as lamb's wool, having a nap of approximately one inch. Primer shall be applied to a clean, dry, frost-free and dust-free surface. Sufficient primer must be used on the day surface to condition it to a dust-free state suitable for the application of Bituthene Waterproofing Membranes.
 - a. Bituthene 4000 Surface Conditioner should not be applied below 40 deg. F. on vertical surfaces. Allow primer to dry 30 minutes. Conditioner is considered dry when the substrate returns to its original color.
 - b. Re-prime areas that become dusty or dirty prior to membrane installation.
3. Membrane Installation: Apply Bituthene Waterproofing Membrane vertically in sections of 8' in length or less. On higher walls apply two or more sections with the upper overlapping the lower by a least 2-1/2". Press all membrane in place with heavy hand pressure or rollers during application.

4. Sealing Edges: Bituthene Waterproofing Membrane shall be applied over the edge of the slab or over the top of the foundation or parapet wall. If the membranes are terminated on the vertical surface, a reglet or counter flashing may be used or the membrane may be terminated directly on the vertical surface by pressing very firmly to the wall. Press edges with a metal or hardwood tool such as a hammer or knife handle. Apply a troweled bead of Bituthene Mastic to all vertical and horizontal terminations. Bituthene Liquid Membrane can be used as an alternative method at the General Contractor's option.
5. Sealing Seams: All edges and end seams must be overlapped at least 2-1/2". Apply succeeding sheets with a minimum 2-1/2" overlap and stagger end laps. Roll or press the entire membrane firmly and completely as soon as possible. Patch misaligned or inadequately lapped seams with Bituthene Membrane. Slit any fish mouths, overlap the flaps, and repair with a patch of Bituthene and press or roll in place. The edges of the patch shall be sealed with a troweling of mastic. Laps within 12" of all corners shall be sealed with a troweling of mastic.
6. Corner Forming: Outside corners must be free of sharp edges. Inside corners shall receive a fillet formed with Liquid Membrane, latex modified cement mortar equal to Daraweld C made by Grace mixed with cement mortar or epoxy mortar. Do not use fiber or wood cants. One of two methods may be used for treating corners at the General Contractor's option:
 - a. Apply Bituthene Liquid Membrane 6" in each direction from the corner and form a fillet with a minimum 3/4" face.
 - b. Install an 11" minimum strip of Bituthene Membrane centered on the corner. Install Bituthene Membrane over the treated inside and outside corners.
7. Over waterproofing, apply drainage composite board by adhering board to cured membrane using tape or adhesive per manufacturer's recommendations; lap all edges 4" and conform to the following:
 - a. Install drainage layer directly over the membrane. Start at the low points on the wall and shingle all laps to the flow of water.
 - b. Splice drainage panels together by butting longitudinal edges of adjacent sheets and peeling back fabric to expose the cores of the panels. Install precut "lock strips" consisting of 4 dimple x 5 dimple sections of the drainage panel centered on the joint between the panels and spaced every 10 dimples along the length of the joint. Snap dimples of "lock strip" to dimples of each panel and reattach fabric over the panel joint.
 - c. Cut the core of the drainage panels around penetrations, and cut an "X" in the filter fabric and tape the fabric to the sides of the penetration.
 - d. Cover all terminal edges of the drainage composite with an integral fabric flap by tucking the fabric around the edge of the core and adhering the fabric to the bottom of the core.

3.4 CLEAN-UP

- A. Upon completion of the waterproofing system, the General Contractor shall remove all equipment, material and debris from the work and storage area, and leave those areas in an undamaged and acceptable condition.

END OF SECTION

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SECTION 072100

THERMAL INSULATION

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. The Work of this Section includes all labor, materials, equipment, and services necessary to complete the thermal insulation as shown on the drawings and/or specified herein, including, but not limited to, the following:
 - 1. Foundation wall insulation.
 - 2. Spray foam insulation.
 - 3. Attachment devices.

1.3 RELATED SECTIONS

- A. Roof insulation - Section 075300.
- B. Firestops and smoke seals - Section 078413.

1.4 SUBMITTALS

- A. Submit product data for each type of product indicated, including re-cycled content.
- B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for insulation products.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the site ready for use in the manufacturer's original and unopened containers and packaging, bearing labels as to type and brand. Delivered materials shall be identical to approved samples.
- B. Store materials under cover in a dry and clean location, off the ground. Remove materials which are damaged or otherwise not suitable for installation and replace with acceptable materials.
- C. Take every precaution to prevent the insulation from becoming wet, cover with tarps or other weather/watertight sheet goods.

PART 2 PRODUCTS

2.1 FOUNDATION WALL INSULATION

- A. Provide extruded polystyrene board insulation equal to "Styrofoam" manufactured by Dow Chemical Co., or approved equal made by Owens Corning or PACTIV Building Products, conforming to ASTM C 578, Type IV, with a maximum flame spread and smoke developed indices of 75 and 450 respectively.
- B. Insulation shall have an aged R value of not less than 5/inch; shall be 2" thick unless otherwise noted on the drawings.

2.2 SPRAY-FOAM INSULATION

- A. Provide two-component closed cell spray foam with a zero-ozone depleting HFC blowing agent; "CertaSpray Closed Cell Foam" by CertainTeed, polyurethane thermoset rigid foam, or equal made by Icyene, BASF or Dow Chemical Company, conforming to ASTM D 1622.
 - 1. Closed Cell Content: 88-95 percent when tested in accordance with ASTM D 2842.
 - 2. Water Absorption: Less than 2 percent by volume when tested in accordance with ASTM D 2842.
 - 3. Dimensional Stability: Less than 9 percent by volume when tested in accordance with ASTM D 2126 at 75 degrees F/ 95 percent RH, 28 day.
 - 4. Water Vapor Transmission: Less than 1.3 perm/inch when tested in accordance with ASTM E 96.
 - 5. Fungi Resistance: Pass, with no growth when tested in accordance with ASTM C 1338.
 - 6. Flame Spread: Less than 25 when tested in accordance with ASTM E 84.
 - 7. Smoke Developed: Less than 450 when tested in accordance with ASTM E 84.
 - 8. Provide thermal barrier over insulation. Barrier shall be approved and have been tested by manufacturer of spray foam.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions where thermal insulation is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 INSTALLATION

- A. General

1. Cooperate in the coordination and scheduling of the work of this section with the work of other sections so as not to delay job progress.
2. Install insulation in as large components as practical and to cover entire areas indicated on the drawings, closely butted together at sides and ends, and against walls, beams, etc. Neatly fit and cut insulation around all projections such as pipes, conduits, hangers and all other elements encountered in the field, which will result in complete coverage of the scheduled areas.
3. Discard, off the site, insulation which becomes damaged during the course of installation, or is no longer in a physical condition to function for use intended, and replace with new material.
4. Clean surfaces on which adhesives are used to secure the insulation in place of dirt, grime, grease, oil and other foreign materials, to assure that the surfaces are properly prepared to accept the bond of the approved adhesives.
5. Apply a single layer of insulation to the required thickness, unless a double layer is required, to make up the total thickness shown.

3.3 INSTALLATION OF PERIMETER INSULATION

- A. On vertical surfaces, set units in adhesive applied in accordance with manufacturer's instructions. Use type of adhesive as specified herein.
- B. Protect below-grade insulation on vertical surfaces (from damage during back-filling) by application of protection board. Set in adhesive in accordance with recommendations of manufacturer of insulation.
- C. Protect top surface of horizontal insulation (from damage during concrete work) by application of protection board.

3.4 INSTALLATION OF SPRAY FOAM INSULATION

- A. Apply spray foam insulation according to manufacturer's written instructions.
- B. Apply insulation by spray method, to uniform monolithic density without voids.
- C. Apply to minimum cured thickness as indicated on the drawings.
- D. Apply to achieve thermal resistance R-value as required.
- E. Seal plumbing stacks, electrical wiring, and other penetrations.
- F. Apply insulation to fill voids around doors and windows. Apply insulation to fill voids around accessible service and equipment penetrations.
- G. Do not install spray foam insulation in areas where it will be in contact with equipment or materials with operating temperatures of 180 degrees F (82 degrees C) or greater.
- H. Patch damaged areas.

- I. Apply ignition barrier.

3.5 PROTECTION

- A. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation will be subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION

SECTION 075300

MEMBRANE ROOFING AND ROOF INSULATION

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. The Work of this Section includes all labor, materials, equipment, and services necessary to complete the sheet membrane waterproofing as shown on the drawings and/or specified herein, including, but not necessarily limited to, the following:
 - 1. EPDM sheet membrane roofing.
 - 2. Roof insulation below roof membrane.
 - 3. Sheet flashing.

1.3 RELATED SECTIONS

- A. Metal deck - Section 053100.
- B. Sheet metal flashing - Section 076200.
- C. Drains and vents - Section 077100.

1.4 DESCRIPTION OF THE SYSTEM

- A. The membrane roofing system specified herein shall consist of factory fabricated large sections of sheet membrane fully adhered over the rigid roof insulation. Provide flashing at roof penetrations and vertical surfaces.

1.5 QUALITY ASSURANCE

- A. Qualifications
 - 1. The membrane roofing system specified herein shall be the product of a manufacturer who can furnish supporting evidence of experience in the manufacture of the membrane roofing system and of having been regularly engaged in this business for not less than three (3) years. Such experience shall be in projects similar to the requirements and scope for this project.

2. The details and specifications are based on a particular manufacturer. It is not the intention of this specification to restrict competition. If a manufacturer other than the one specified is selected, it shall be his obligation and responsibility to modify and adjust his materials to suit the encountered conditions and to consult and coordinate his work with other trade Contractors to assure that the installation will be watertight and function for use intended and that the guarantee will be issued to the City of New York.
3. Acceptable manufacturers:
 - a. Carlisle Syntec Incorporated.
 - b. Firestone Building Products Company.
 - c. 2001 Roof Systems.
 - d. or an equal acceptable to the Commissioner.
- B. Installer: A firm with not less than 3 years of successful experience in installation of roofing systems similar to those required for this project and which is acceptable to or licensed by the manufacturer of the primary roofing materials.
- C. UL Listing: Provide system which has been tested and listed by UL for application indicated and which has a "Class A" rating.

1.6 SUBMITTALS

- A. The samples and certificates listed below are required to be submitted by the Contractor to the Commissioner, for review. An omission of an item or items does not relieve the Contractor from this responsibility and for compliance with the Contract Documents, of which this is a part.

1. Samples

2. Item No.	Size	Description
a. S1	6" x 6"	Membrane w/splice
b. S2	6" x 6"	Rigid insulation
c. S3	6" x 6"	Flashing materials

3. Notarized Certificates of Compliance

4. Item No.	Description	Standard
a. C1	Sheet membrane	As specified
b. C2	Submit manufacturers published specifications, which completely describe the preparation of surfaces and application of roofing systems.	
c. C3	Submit a letter from membrane manufacturer issuing sample guarantee and approving the applicator, prior to pre-application conference.	

- B. Submit complete shop drawings showing details, dimensions, fabrication and fastening elements for each condition encountered, layout of each sheet noting seam locations, perimeter and penetration flashing, and other details where roofing abuts other materials and/or conditions.

- C. Submit copies of pre-roofing conference records.
- D. Submit a letter signed by the manufacturer and Contractor acknowledging that the submitted roofing system complies with ASCE-7 and FM I-90 for wind speed code requirements based on height and geographic location of project.

1.7 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to the site ready for use in the manufacturer's original and unopened containers and packaging, bearing labels as to type and brand. Delivered materials shall match approved samples. Fire classification labels shall be intact and visible.
- B. Store materials under cover in a dry and clean location, off the ground and remove materials which are damaged, torn or otherwise not suitable for installation and replace with acceptable materials.
- C. Keep insulation and membrane dry before and during installation. Remove wet materials from project site.
- D. Store roofing materials on platforms or pallets, above ground, on roof level and cover with tarpaulins or on other suitable watertight covering. Store membrane and handle, in such a way as to prevent damage to edges or ends.

1.8 PREROOFING CONFERENCE

- A. Prior to ordering of materials, a preroofing conference will be held to discuss the specified roofing system and its proper application. Conference shall include installer, roofing manufacturer, installers of related work, Commissioner and representatives of City of New York. Record discussions and agreements and furnish copy to each participant. Provide at least 72 hours advance notice to participants prior to convening conference.
- B. Coordinate application of the roofing system in such a manner that the complete installation is weather-tight and in accordance with guarantee requirements.

1.9 ENVIRONMENTAL REQUIREMENTS

- A. Work shall not be installed when the roof deck is damp, wet or spotted with frost or if the ambient temperature is 35 deg. F. and falling or if there is a forecast for inclement weather which will be adverse to the proper installation of the roofing system.

1.10 WARRANTY

- A. Provide warranty for the roofing work as specified in this section. Warranty shall state that installed work shall be free from defects of materials and workmanship for fifteen (15) years from date of Substantial Completion.

- B. Warranty shall be in a form acceptable to the Commissioner and shall be duly executed by officers or principals of the manufacturer.
- C. Contractor shall inform the Commissioner if conditions exist which will interfere with issuance of the specified warranty. Start of work shall imply that the warranty as specified above will be issued.
- D. In addition to manufacturer's warranty, provide roofing Installer's warranty effective for a period of two (2) years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Membrane Sheets: 0.060" thick black, non-reinforced EPDM (Ethylene Propylene Diene Monomer) compounded elastomer.
- B. Membrane Flashing: 0.060" thick uncured EPDM; or as recommended by roofing manufacturer.
- C. Bonding Adhesives, Mastics and Splicing Cement: Compatible with the materials with which they will come in contact.
- D. Lap Sealant: For sealing the exposed edge of the splices and as otherwise required shall be of a consistency recommended by the manufacturer.
- E. Prefabricated Pipe Seal Assemblies: Provide assemblies to accommodate vents, pipe penetrations and other similar roof penetrations.
- F. Sealers: Provide sealers and other similar accessory materials as recommended by the manufacturer.
- G. Materials: The materials provided shall be part of a roofing system developed by the approved manufacturer and shall in every respect be compatible with each other and with the substrates and conditions encountered in the field.
- H. Cant Strips, Tapered Edge Strips, and Flashing Accessories: Types recommended by membrane manufacturer, including adhesive tapes, flashing cements, and sealants.
- I. Membrane Adhesive: As recommended by membrane manufacturer for particular substrate and project conditions, formulated to withstand ASCE 7-02 wind uplift force requirements of the geographic area of the building.
 - 1. Provide adhesives that comply with local requirements limiting amounts of volatile organic compounds.
- J. Roof Insulation: Minimum 2" thick flat and tapered (1/4" per foot) isocyanurate board roof insulation conforming to ASTM C1289 faced with proper facing to allow membrane to be

adhered to it without delamination. Roof insulation must have an LTTR R-Value of 6.0/inch at 75 deg. F. when tested in accordance with ASTM C1303.

1. Manufacturer of roofing system must approve use of insulation in writing in advance.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions where roofing is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 INSTALLATION

A. Nailers

1. Continuous pressure treated (See Section 062000) nailers shall be firmly anchored to resist a force of 75 pounds per lineal foot in any direction. The thickness of the nailer shall be such that the top of the nailer is flush with the surface to which the membrane is attached at the horizontal plane.
2. Nailers shall be installed continuous at perimeters and around all roof penetrations unless otherwise noted.

B. Insulation

1. Clean the metal deck prior to installation of the insulation. Mechanically attach insulation to deck using F.M. approved fasteners in pattern to meet F.M. I-90 minimum and ASCE 7- 02 wind uplift requirements, including greater requirements for corners and perimeters as required. For tapered insulation, follow pattern of taper to insure correct pitch.
2. Moderately butt end joints over flutes, stagger joints in adjacent boards. Do not install more insulation in any one day than can be covered by the membrane roof sheets.
3. Where two layers of insulation or coverboards are required, stagger joints two (2) feet in length and width in both directions.
4. Neatly cut around all projections encountered and at abutting vertical surfaces. Where large gaps occur fill with a urethane foam pack.

C. Sheet Membrane Application

1. Fully Adhered Membrane: Where required by manufacturer, install membrane by unrolling over prepared substrate, lapping adjoining sheets. Apply adhesive to surfaces to be bonded and roll into place when adhesive has properly cured. Treat seams with cleaner and prime finish with 4" seam tape and apply sealant to exposed sheet edges, tapering application as

recommended by manufacturer. Install mechanical fasteners, flashings and counterflashings, and accessories at locations indicated and as recommended by manufacturer.

D. Splicing

1. Fold the top sheet back about twelve (12) inches and clean both mating surfaces at the splice area using clean rags with membrane manufacturer's recommended cleaner.
2. Apply the in-seam tape primer with a synthetic scrub pad at a rate of 375 lineal feet of five (5) inch splice per gallon. Allow tape primer to dry to the touch.
3. Roll the top sheet toward the splice area until the cemented area is nearly touching the cement on the bottom sheet along the entire length of the splice. Allow the top sheet to fall freely into place avoiding stretching and wrinkling. Roll the splice with a two (2) inch wide steel roller, using positive pressure, toward the outer edge of the splice.
4. Solvent clean the splice edge, extending at least one (1) inch onto the top and bottom membranes. Apply a bead of lap sealant completely covering the splice edge, feathering the lap sealant with a preformed putty knife or trowel.
5. Lap sealant application shall be completed on all splices by the end of each working day.

E. Membrane Flashing

1. Perimeter flashing and flashing around vents and other roof penetrations shall be preformed using the recommended flashing, compatible with the approved roofing system and utilizing the longest pieces practicable.
2. The splice between the flashing and the main roof sheet should be completed before bonding the flashing to the vertical surface. Seal this splice at least three (3) inches beyond the fasteners which attach the membrane to the horizontal nailer.
3. Bonding adhesive shall be applied to both the flashing and the surface to which it is being bonded. After the adhesive has dried to the point where it does not string or stick to a dry finger touch, roll the flashing into the adhesive. Take care to assure that the flashing is not bridging where there is any change of direction of the flashing (e.g., where the parapet meets the roof deck).
4. Nail the flashing at the top every 12 inches on center maximum under metal counterflashing or cap. Metal counterflashing is specified under Section 076200.

F. Pipe Flashing

1. Flashing for pipes, conduits and other similar items which are scheduled to penetrate (pass through) the membrane shall be provided with factory prefabricated elements when such use is possible. When prefabricated devices are not possible, field fabricated seals shall be used.

2. Bases of the pipe seals shall be spliced to the membrane roofing sheet as specified above for sheet laps and the top portion shall be secured to the pipe with a stainless steel clamping ring and continuously sealed with sealant in a watertight manner.
3. Field fabricated pipe seals shall be fabricated with base and cap membrane flashing which shall be spliced to the membrane and to itself and continuously sealed with sealant in a watertight manner.

G. Drains

1. At drain locations, where the insulation is tapered to form a smooth transition from roof surface to membrane, the membrane sheet shall be accurately cut-out so as to fit the encountered clamping ring, and shall be secured to the ring with the addition of the approved mastic in a secure, neat and watertight manner.

H. Curbs, Corners

1. Field fabricated outside corners shall consist of approved membrane flashing which shall have not less than 6" horizontal legs which shall be spliced to the roof membrane, and vertical legs as required which shall be nailed at 12" o.c. maximum. Corners shall be lapped a minimum of 3" and be secured by splicing to each flashing section.
2. Field fabricated inside corners shall consist of approved membrane flashing with 6" horizontal legs which shall be spliced to the roof membrane, and vertical legs as required which shall be nailed at 12" o.c. maximum. Corners shall be lapped a minimum 6" and secured by splicing to each flashing section.

3. Install lap type sealant along all seams to insure a watertight installation.

- I. Daily Seal: Care should be exercised to ensure that the water does not flow beneath any completed sections of roof. Temporarily seal loose edge of membrane with sealant when weather is threatening.

1. Mix the two components thoroughly according to the instructions on the label.
2. Apply the sealant at a rate of 100 lineal feet per gallon, on smooth surface, 12" back from edge of sheet onto exposed substrate surface. If necessary, use a trowel to spread material in order to achieve complete seal.
3. After embedding membrane in sealant, check for continuous contact. Then weight the edge, providing continuous pressure over the length of the cutoff. The recommended weight for the continuous pressure is a ten (10) foot length of 2-1/2" tubing filled with dry sand.
4. When work is resumed, pull sheet free before continuing installation.

3.3 CLEANING AND PROTECTION

- A. From time to time during the progress of the work and at the completion of the work, remove all rubbish, debris, dirt, equipment and unused materials from the site. Clean adjoining surfaces which may have been soiled by roofing work.
- B. Protect installed roofing from damage and abuse by other trades. Repair damages to watertight conditions at no additional cost to the City of New York.
- C. Exercise care to protect installed work. Work which does become damaged in any way or is not watertight, shall be repaired and/or replaced as directed to the satisfaction of Commissioner and/or City of New York at no additional cost or time.

END OF SECTION

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SECTION 076200

SHEET METAL WORK

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. Work of this Section includes all labor, materials, equipment and services necessary to complete the sheet metal work, as indicated on the drawings and/or specified herein, including but not limited to, the following:
 - 1. Stainless steel cap metal flashing.
 - 2. Field fabricating (including bending, cutting, soldering, etc.), if required, of stainless steel flashing.
 - 3. Stainless steel flashing elsewhere, where metal flashing is indicated on drawings.
 - 4. Separation of contacting surfaces of dissimilar metals.

1.3 RELATED SECTIONS

- A. Unit masonry – Section 042000.
- B. Roofing - Section 075300.

1.4 SUBMITTALS

- A. Shop Drawings: Submit, showing all materials, finishes, fastenings, joint details, fabrication, construction and relation to adjoining construction.
- B. Samples: Submit 12" x 12" samples of flashing materials and finishes.

1.5 WARRANTY

- A. The Contractor shall warrant that all Metal Flashing Work executed under this Section will be free from defects in materials and workmanship for a period of two (2) years from date of acceptance of the Project, and he shall remedy any defects in the Metal Flashing Work.

1.6 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.

- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary at no additional cost to the City of New York.

PART 2 PRODUCTS

2.1 MATERIALS

A. Stainless Steel Flashing Materials

1. Stainless Steel Flashing: ASTM A167, Type 304, stainless steel, with 2D finish, dead soft temper, fully annealed, as manufactured by International Nickel Co., Republic Steel Corp., United States Steel, or Washington Steel Corp. Thickness of stainless steel shall be 26 ga.
2. Accessories and Fastenings: AISI, Types 302 and 304 stainless steel.
3. Solder: Composed of sixty (60) percent block tin and forty (40) percent pig lead, except that solder at seams exposed to public view shall be eighty (80) percent tin and twenty (20) percent lead.
4. Flux: An acid type flux manufactured specifically for soldering stainless steel, as approved.

- B. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type non-corrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions where sheet metal work is to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 METAL FLASHING INSTALLATION

- A. Reference Standard: Conform to the requirements of 5th Edition of the Sheet Metal and Air Conditioning Contractors Association (SMACNA) Architectural Sheet Metal Manual.
- B. General: Fabricate and install metal flashing work in accordance with details and specifications of above Reference Standard, with manufacturer's instructions, and as herein specified, to provide a watertight installation. Apply metal flashing to smooth, even, sound, clean, dry surfaces free from defects. Make provisions to allow for expansion and contraction of metal flashing work. Wherever practicable, shop form all metal flashing work and deliver ready for installation. Form metal flashing work accurately to required profiles, with flat surfaces, straight edges and corners, free from defects. Fold exposed metal edges back not less than 1/2" and form drip.

- C. **Nailing:** Confine to sheets twelve (12) inches or less in width. Confine nailing to one edge only, locate nails where concealed. Use No. 12 x 1" long flat headed, annular threaded, Type 302 stainless steel nails for nailing to wood blocking; use one (1) inch long masonry nails for nailing to concrete. Space nails four (4) inches o.c. maximum.
- D. **Cleating:** Use cleats where sheets are more than twelve (12) inches in width. Space cleats approximately twelve (12) inches o.c.. Cleats two (2) inches wide by three (3) inches long, of the same material and weight as the metal flashing being installed. Secure one end of the cleat with two (2) nails and fold edge back over the nail heads. Lock other end into seam or into folded edge of metal flashing sheets. Pre-tin cleats for soldered seams.
- E. **Joining:** Join metal flashings with one (1) inch locked and soldered seams except at slip joints. Mallet seams flat and solder full length of seam as specified below.
- F. **Soldering:** Mechanically clean all metal surfaces to be soldered with steel wool. Clean and pre-tin edges of metal flashing to be soldered before soldering is begun with solder on both sides for a width of not less than 1-1/2". Solder slowly with well heated metal surfaces. Use ample solder. Show not less than one full inch of evenly flowed solder on seam. Seams shall have a liberal amount of flux brushed in before soldering is commenced. Where soldering paste or killed acid is employed as a flux, soldering shall follow immediately after application of the flux. Upon completion of soldering, clean surfaces of all flux.
- G. **Slip Joints:** Locate slip joints not more than twenty four (24) feet apart and within 2' of corners and changes in direction. Form slip joints as three (3) inch wide joints with cover piece behind flashing, and fill locked ends neatly with sealant.
- H. **Cap Flashing:** Install over base flashings, in eight (8) to ten (10) foot lengths, lapped six (6) inches at ends. Cap flashing shall be increased longitudinally to produce spring action to hold bottom edge of cap flashing firmly against base flashing. Cap flashing shall lap base flashing at least four (4) inches, with exposed bottom edge at a forty five (45) degree angle downward and folded back on underside at least 1/2" to form drip. Make cap flashing continuous at corners and angles.
- I. **Miscellaneous Flashing:** Provide all other miscellaneous metal flashing not specifically mentioned herein, but indicated on drawings and/or required to provide a watertight installation.
- J. **Separation of Dissimilar Materials:** Back paint surfaces of metal flashing in contact with dissimilar metals or with concrete or masonry with bituminous paint.
- K. **Reglets**
 - 1. Provide watertight reglets in masonry and concrete work to receive cap flashing. Form reglets of stainless steel using same thickness as stainless steel sheet metal specified.
 - 2. In masonry work use open or closed slot reglets with slot at least one (1) inch deep and 3/16" wide. Provide hook dams or turn-ups for anchoring securely into mortar joints. Insert cap flashing into slot full depth using button punch or lead wedges to lock in place.

3. In concrete work, use open or closed slot reglets with slot sloped upward at forty five (45) degrees, at least one (1) inch deep and 3/16" wide. For fastening reglets to concrete forms use double-head stainless steel nails spaced twelve (12) inches apart maximum.
4. Insert cap flashing full depth into reglet slot, and wedge in place using lead strips spaced on twelve (12) inch centers maximum or lead caulking rope. When lead strips are used for continuous caulked reglets, use approved weather-resistant fibrous compounds.

END OF SECTION

SECTION 077100

ROOF SPECIALTIES AND ACCESSORIES

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. The Work of this Section includes all labor, materials, equipment, and services necessary to complete the roof specialties and accessories as shown on the drawings and/or specified herein, including, but not necessarily limited to, the following:
 - 1. Aluminum scuppers and downspouts.
 - 2. Splash blocks.

1.3 RELATED SECTIONS

- A. Roofing - Section 075300.
- B. Sheet Metal Flashing - Section 07600.
- C. Joint sealants – Section 07900.

1.4 SUBMITTALS

- A. Shop Drawings: Before any roof specialties and accessories are delivered to the job site, submit shop drawings showing profiles and anchoring devices.

1.5 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect the materials of this Section before, during, and after installation, and to protect the installed work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary.

PART 2 PRODUCTS

2.1 ALUMINUM SCUPPERS AND DOWNSPOUTS

- A. Provide aluminum downspouts fabricated of formed aluminum, 0.050" thick, alloy 5005-H154, smooth, no pattern.

- B. Downspout shall be manufactured in 10'-0" lengths, rectangular closed-face with mitered elbows, factory offset on one end to provide for a 3/4" telescope joint. Downspout shall contain a factory mounted back, non-sealed to allow seepage of water in overflow conditions.
 - 1. Elbows for downspouts shall be of welded construction, with matching finish applied after welding. Such finish shall be of quality equal to finish for non-welded parts. Grinding and spray painting of parts to match will not be permitted. Elbows shall be provided with a factory offset on its lower end to allow a 3/4" telescope joint.
 - 2. Provide manufacturer's standard wall brackets of compatible material to downspout with matching finish and color.
 - 3. Provide concrete splash blocks where indicated.
- C. Scuppers: Manufactured scuppers with closure flange trim to exterior, 4" wide wall flanges to interior, and base extending 4" beyond cant or tapered strop onto field of roof. Manufacture from 0.0320" thick aluminum.
- D. High-Performance Organic Finish; AA-C12C42R1x (Chemical Finish: Cleaned with inhibited chemicals; Chemical Finish: Acid-chromate-fluoride-phosphate conversion coating; Organic Coating: As specified below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's written instructions.
 - 1. Fluoropolymer Two-Coat System: Manufacturer's standard two-coat, thermocured system consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2605-98.
 - 2. Finish: As selected by the Architect.
- E. Provide units manufactured by Hickman, or equal made by Cheney, MM Systems or approved equal.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions where roof specialties and accessories are to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 INSTALLATION

- A. General: Comply with manufacturer's instructions and recommendations. Coordinate with installation of roof deck and other substrates to receive accessory units, and with roof insulation, roofing and flashing; as required to ensure that each element of the work performs properly, and that combined elements are waterproof and weathertight. Anchor units securely to supporting

structural substrates, adequate to withstand lateral and thermal stresses as well as inward and outward loading pressures.

- B. Isolation: Where metal surfaces of units are to be installed in contact with non-compatible metal or corrosive substrates, including wood, apply bituminous coating on concealed metal surfaces, or provide other permanent separation.
- C. Cap Flashing: Where cap flashing is required as component of accessory, install to provide adequate waterproof overlap with roofing or roof flashing (as counter flashing). Seal with thick bead of mastic sealant, except where overlap is indicated to be left open for ventilation.
- D. Downspouts
 - 1. Install downspouts with brackets 24" o.c.; attach brackets to structure, use non-corrosive screw anchors.
 - 2. Join sections with manufacturer's standard telescoping joints. Provide fasteners designed to hold downspouts securely 1" away from walls, locate fasteners at top and bottom and at approximately 60" o.c. in between. Provide elbows at base of downspout to direct water away from building.
- E. Scuppers: Install scuppers where indicated through parapet. Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane. Anchor scupper closure trim flange to exterior wall and seal or solder to scupper.

3.3 CLEANING AND PROTECTION

- A. Clean exposed plastic surfaces in accordance with manufacturer's instructions. Touch up damaged metal coatings.

END OF SECTION

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SECTION 078100

SPRAYED FIRE-RESISTIVE MATERIALS

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. The Work of this Section includes all labor, materials, equipment, and services necessary to complete the sprayed fire-resistive materials as shown on the drawings and/or specified herein, including, but not necessarily limited to, the following:
 - 1. Spray-on fireproofing for structural steel.
 - 2. Preparation of surfaces.
 - 3. Field quality control.

1.3 RELATED SECTIONS

- A. Firestops and smoke seals – Section 078413.

1.4 SUBMITTALS

- A. Product Data: For each fire-resistive product specified.
- B. Shop Drawings: Submit structural framing plans indicating the following:
 - 1. Locations and types of surface preparations required before applying sprayed fire-resistive material.
 - 2. Extent of sprayed fire-resistive material for each construction and fire-resistance rating, including the following:
 - a. Applicable fire-resistive design designations of a qualified testing and inspecting agency acceptable to authorities having jurisdiction.
 - b. Minimum thicknesses needed to achieve required fire-resistance ratings of structural components and assemblies.
 - 3. Identify restrained and unrestrained assemblies on shop drawings, show required thickness of fireproofing for each assembly.

- C. Product Certificates: Signed by manufacturer of sprayed fire-resistive material certifying that the products furnished comply with requirements.
- D. Installer Certificates: Signed by manufacturer certifying that installers comply with specified requirements.
- E. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of Commissioners and City of New York, and other information specified.
- F. If primer is to be used steel and/or metal deck, submit certifications by supplier of primer that primer is compatible with materials, and will not impair the required performance of the installed fireproofing. Such certification shall be accompanied by evidence that the primer was successfully used in conjunction with the fireproofing material in a UL test applicable to the construction. Submit his certification prior to application of primer.
 - 1. Coordinate with Section 051200 – Structural Steel, and Structural Drawings prior to application of primer.
- G. Product Test Reports: Indicate that physical properties of proposed sprayed fire-resistive materials comply with specified requirements based on comprehensive testing of current product formulations by a qualified testing and inspecting agency according to requirements specified in "Quality Assurance" Article.
- H. Code Compliance: Proposed product must comply with prevailing Building Code and be approved by those individual having jurisdiction.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer certified, licensed, or otherwise qualified by sprayed fire-resistive material manufacturer as having the necessary experience, staff, and training to install manufacturer's products according to specified requirements. A manufacturer's willingness to sell its sprayed fire-resistive materials to Contractor or to an installer engaged by Contractor does not in itself confer qualification on the buyer.
- B. Submit data indicating that products containing no detectable asbestos as determined according to the method specified in 40 CFR, Part 763, Subpart E, Appendix E, Section 1, "Polarized Light Microscopy."
- C. Mockups: After processing of initial submittals and before delivery and installation of fireproofing materials, prepare a sample installation of fireproofing work, approximately 100 sq. ft. in area; providing an example of each type required, applied on each different substrate, to produce each different rating as required and reasonably representative of entire sprayed on fireproofing work, for joint approval by representative of fire resistant material manufacturer and City of New York. Work in

other areas shall not proceed until mock-up has been completed. Mock-up work which remains in compliance with requirements and is in undamaged and acceptable condition may be retained as final work in place.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to Project site in original, unopened packages with intact and legible manufacturers' labels identifying product and manufacturer; date of manufacture; shelf life, if applicable; and fire-resistance ratings applicable to Project.
- B. Use materials with limited shelf life within period indicated. Remove from Project site and discard materials whose shelf life has expired.
- C. Store materials inside, under cover, aboveground, so they are kept dry until ready for use. Remove from Project site and discard materials that have deteriorated.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not apply sprayed fire-resistive material when ambient or substrate temperatures are 40 deg F. or lower, unless temporary protection and heat is provided to maintain temperatures at or above this level for 24 hours before, during, and for 24 hours after product application.
- B. Ventilation: Ventilate building spaces during and after application of sprayed fire-resistive material to achieve a minimum of four air changes per hour. Use natural means or, where this is inadequate, forced-air circulation until fire-resistive material dries thoroughly.

1.8 SEQUENCING

- A. Sequence and coordinate application of sprayed fire-resistive materials with other related work specified in other Sections to comply with the following requirements:
 - 1. Provide temporary enclosures for interior applications to prevent deterioration of fire-resistive material due to exposure to unfavorable environmental conditions.
 - 2. Avoid unnecessary exposure of fire-resistive material to abrasion and other damage likely to occur during construction operations subsequent to its application.
 - 3. Do not apply fire-resistive material to metal roof deck substrates until roofing has been completed; prohibit roof traffic during application and drying of fire-resistive material. Fireproofing shall be considered dry when the moisture content is 6% or less.
 - 4. Do not begin applying fire-resistive material until clips, hangers, supports, sleeves, and other items penetrating fire protection are in place.

5. Defer installing ducts, piping, and other items that would interfere with applying fire-resistive material until application of fire protection is completed.
6. Do not install enclosing or concealing construction until after fire-resistive material has been applied, inspected, tested, and corrections have been made to defective applications.
7. Protect permanently exposed walls, floor or special surfaces.

1.9 WARRANTY

- A. **General Warranty:** The special warranty specified in this Article shall not deprive City of New York of other rights City of New York may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. **Special Warranty:** Submit a written warranty, executed by Contractor and cosigned by Installer, agreeing to repair or replace sprayed fire-resistive materials that fail within the specified warranty period.
 1. Failures include, but are not limited to, cracking, flaking, eroding in excess of specified requirements; peeling; and delaminating of sprayed fire-resistive materials from substrates due to defective materials and workmanship within the specified warranty period.
 2. Not covered under the warranty are failures due to damage by occupants and City of New York's maintenance personnel, exposure to environmental conditions other than those investigated and approved during fire-response testing, and other causes not reasonably foreseeable under conditions of normal use.
- C. **Warranty Period:** Three (3) years from date of Substantial Completion.

PART 2 PRODUCTS

2.1 CONCEALED SPRAYED FIRE-RESISTIVE MATERIALS

- A. **General:** For concealed applications of sprayed fire-resistive materials, provide manufacturer's standard products complying with requirements indicated in this Article for material composition and physical properties representative of installed products.
- B. **Material Composition:** As follows:
 1. Cementitious sprayed fire-resistive material consisting of factory-mixed, dry formulation of gypsum or Portland cement binders and lightweight mineral or synthetic aggregates mixed with water at Project site to form a slurry or mortar for conveyance and application.

- C. **Physical Properties:** Minimum values, unless otherwise indicated, or higher values required to attain designated fire-resistance ratings, measured per standard test methods referenced with each property listed as follows:
1. **Dry Density:** Minimum 15 lb./cu. ft. for average and individual densities regardless of density indicated in referenced fire-resistive design, or greater if required to attain fire-resistance ratings indicated, per ASTM E 605 or AWCI Technical Manual 12-A, Appendix A, "Alternate Method for Density Determination."
 2. **Thickness:** Provide minimum average thickness required for fire-resistive design shown on approved submittals.
 - a. **Fireproofing** shall be of thicknesses and density to meet the requirements of the Building Code for Type of construction indicated on drawings.
 3. **Bond Strength:** Not less than 200 lbf/sq. ft. per ASTM E 736.
 4. **Compressive Strength:** 5.21 lbf/sq. in. as determined in the laboratory per ASTM E 761. Minimum thickness of sprayed fire-resistive material tested shall be 0.75 inch and minimum dry density shall be as specified, but not less than 15 lb./cu. ft.
 5. **Corrosion Resistance:** No evidence of corrosion per ASTM E 937.
 6. **Deflection:** No cracking, spalling, delamination, or the like per ASTM E 759.
 7. **Effect of Impact on Bonding:** No cracking, spalling, delamination, or the like per ASTM E 760.
 8. **Air Erosion:** Maximum weight loss of 0.025 g/sq. ft. in 24 hours per ASTM E 859. For laboratory tests, minimum thickness of sprayed fire-resistive material is 0.75 inch, maximum dry density is 15 lb./cu. Ft., test specimens are not prepurged by mechanically induced air velocities, and tests are terminated after 24 hours.
 9. **Fire-Test-Response Characteristics:** Provide sprayed fire-resistive materials with the following surface-burning characteristics as determined by testing identical products per ASTM E 84 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - a. **Flame Spread:** 10 or less.
 - b. **Smoke Developed:** 0.
 10. **Fungal Resistance:** No observed growth on specimens per ASTM G 21.
- D. **Products:** Subject to compliance with requirements, provide products by one of the following:

1. Cementitious Sprayed Fire-Resistive Material
 - a. Pyrolite 5GP; Carbolite Co., Fireproofing Products Div.
 - b. Monokote Type MK-6; W.R. Grace & Co. - Conn., Construction Products Div.
 - c. Cafco 300; Isolatek International Corp., Cafco Products.
 - d. Type F3; Promat Firetemp.
 - e. Or approved equal.

2.2 SPRAYED FIRE-RESISTIVE MATERIALS FOR EXPOSED FIREPROOFING

- A. General: For exposed applications of sprayed fire-resistive materials, provide manufacturer's standard products complying with requirements indicated for material composition and for minimum physical properties of each product listed, measured by standard test methods referenced with each property.
- B. Cementitious Sprayed Fire-Resistive Material: Factory-mixed, dry, cement aggregate formulation, chloride-free formulation of Portland cement binders, additives, and inorganic aggregates, mixed with water at Project site to form a slurry or mortar for conveyance and application, complying with the following requirements:
 1. Dry Density: Values for average and individual densities as required for fire-resistance ratings indicated, per ASTM E 605 or AWCI Technical Manual 12-A, Appendix A, "Alternate Method for Density Determination," but with an average density of not less than 22 lb./cu. ft.
 2. Bond Strength: 425 psf minimum per ASTM E 736.
 3. Compressive Strength: 10,000 psf. per ASTM E 761.
 4. Corrosion Resistance: No evidence of corrosion per ASTM E 937.
 5. Deflection: No cracking, spalling, delamination, or the like per ASTM E 759.
 6. Effect of Impact on Bonding: No cracking, spalling, delamination, or the like per ASTM E 760.
 7. Air Erosion: Maximum weight loss of 0.025 g/sq. ft. per ASTM E 859.
 8. Combustion Characteristics: Passes ASTM E 136.
 9. Fire-Test-Response Characteristics: Provide sprayed fire-resistive materials with the following surface-burning characteristics as determined by testing identical products per ASTM E 84 by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
 - a. Flame Spread: 10 or less.
 - b. Smoke Developed: 0.

10. Fungal Resistance: No observed growth on specimens per ASTM G 21.
 11. For exterior applications of sprayed fire-resistive material, provide manufacturer's formulation approved for surfaces exposed to the exterior.
- C. Products: Subject to compliance with requirements, provide one of the following:
1. Cement-Aggregate Cementitious Sprayed Fire-Resistive Material:
 - a. Pyrocrete 239; Carbolite Co., Fireproofing Products Div.
 - b. Monokote Type Z106HY; W.R. Grace & Co.--Conn., Construction Products Div.
 - c. F4; Promat Firetemp.
 - d. Cafco 400, Isolatek International Corp; Cafco Products.
 - e. Or approved equal.

2.3 AUXILIARY FIRE-RESISTIVE MATERIALS

- A. General: Provide auxiliary fire-resistive materials that are compatible with sprayed fire-resistive materials and substrates and are approved by UL or another testing and inspecting agency acceptable to authorities having jurisdiction for use in fire-resistive designs indicated.
- B. Adhesive for Bonding Fire-Resistive Material: Product approved by manufacturer of sprayed fire-resistive material, used where required by manufacturer to insure proper bond.
- C. Metal Lath: Expanded metal lath fabricated from material of weight, configuration, and finish required to comply with fire-resistive designs indicated and fire-resistive product manufacturer's written recommendations. Include clips, lathing accessories, corner beads, and other anchorage devices required to attach lath to substrates and to receive sprayed fire-resistive material.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates, with Installer present, to determine whether they are in satisfactory condition to receive sprayed fire-resistive material. A substrate is in satisfactory condition if it complies with the following:
 1. Substrates are free of oil, grease, rolling compounds, incompatible primers, loose mill scale, dirt, or other foreign substances capable of impairing bond of fire-resistive material with substrate under conditions of normal use or fire exposure.

2. Objects penetrating fire-resistive material, including clips, hangers, support sleeves, and similar items, are securely attached to substrates.
 3. Substrates are not obstructed by ducts, piping, equipment, and other suspended construction that will interfere with applying fire-resistive material.
- B. Do not proceed with installation of fire-resistive material until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of substances that could impair bond of fire-resistive material, including oil, grease, rolling compounds, incompatible primers, and loose mill scale.
- B. For exposed applications, repair substrates to remove any surface imperfections that could affect uniformity of texture and thickness in finished surface of sprayed fire-resistive material. Remove minor projections and fill voids that would telegraph through fire-resistive products after application.
- C. Cover other work subject to damage from fallout or overspray of fire-resistive materials during application. Provide temporary enclosure as required to confine spraying operations, protect the environment, and ensure maintenance of adequate ambient conditions for temperature and ventilation.

3.3 INSTALLATION

- A. Comply with fire-resistive material manufacturer's written instructions for mixing materials, application procedures, and types of equipment used to convey and spray on fire-resistive material, as applicable to particular conditions of installation and as required to achieve fire-resistance ratings indicated.
- B. Install metal lath, as required, to comply with fire-resistance ratings and fire-resistive material manufacturer's written recommendations for conditions of exposure and intended use. Securely attach lath to substrate in position required for support and reinforcement of fire-resistive material. Use anchorage devices of type recommended in writing by fire-resistive material manufacturer. Attach lathing accessories where indicated or required for secure attachment to substrate.
- C. Coat substrates with adhesive before applying fire-resistive material where required to achieve fire-resistance rating or as recommended in writing by fire-resistive material manufacturer for material and application indicated.
- D. Extend fire-resistive material in full thickness over entire area of each substrate to be protected.
- E. Spray apply fire-resistive materials to maximum extent possible. Following the spraying operation in each area, complete the coverage by method recommended by the manufacturer.

- F. Where sealers are used, apply products that are tinted to differentiate them from the sprayed fire-resistive material over which they are applied.
- G. Maintain ambient conditions during installation and for cure period following installation, as recommended by manufacturer. Provide ventilation and avoid excessive rate of drying.
- H. Fireproofing to the underside of roof deck assemblies shall be done only after roofing application is complete, all roof mounted mechanical equipment is in place, and the roof is watertight.
- I. No fireproofing shall be applied prior to completion of concrete work on steel decking.
- J. Installation Sequence of Fireproofing
 - 1. All patching and repairing of sprayed fireproofing, due to cutting by other trades or testing and inspection, shall be performed under this Section.
- K. Provisions shall be made for ventilation to properly dry the fireproofing after application. In enclosed areas lacking natural ventilation, air circulation and ventilation must be provided.

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: City of New York will engage a qualified independent testing and inspecting agency to perform field tests and inspections and to prepare test reports.
 - 1. Testing and inspecting agency will interpret tests and state in each report whether tested work complies with or deviates from requirements.
- B. Testing and inspecting of completed applications of sprayed fire-resistive material will take place in successive stages, in areas of extent and using methods as follows. Do not proceed with application of fire-resistive material for the next area until test results for previously completed applications of fire-resistive material show compliance with requirements.
 - 1. For each 1000-sq. ft. area, or partial area, on each floor, testing and inspecting agency will evaluate the following characteristics. Tested values must equal or exceed values indicated and values required for approved fire-resistance design.
 - a. Thickness for Floors, Roofs, and Walls: From the average of 10 measurements from a 144-sq. in. sample area, with sample width of not less than 6 inches per ASTM E 605.
 - 2. Thickness for Structural Frame Members: From a sample of 25 percent of structural members per floor, taking 9 measurements at a single cross section for structural frame beams or girders, 7 measurements of a single cross section for

joists and trusses, and 12 measurements of a single cross section for columns per ASTM E 605.

3. For each 10,000 sq. ft. area, or partial area, on each floor, testing and inspection agency will evaluate the following characteristics. Tested values must equal or exceed values indicated and values required for approved fire resistance design.
 - a. Bond Strength for Floors, Roofs, Walls, and Structural Framing Members: Cohesion and adhesion at frequency and from sample size indicated for determining thickness of each type of construction, per ASTM E 736.
 4. Density for Floors, Roofs, Walls, and Structural Frame Members: At frequency and from sample size indicated for determining thickness of each type of construction, per ASTM E 605 or AWCI Technical Manual 12-A, Appendix A, "Alternate Method for Density Determination."
 5. When testing discovers applications of fire-resistive material not in compliance with requirements, testing and inspecting agency will perform additional random testing to determine extent of noncompliance.
- C. Remove and replace applications of fire-resistive material where test results indicate that they do not comply with specified requirements for cohesion and adhesion or for density, or both.
- D. Apply additional fire-resistive material per manufacturer's written instructions where test results indicate that thickness does not comply with specified requirements.
- E. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.5 CLEANING, PROTECTING, AND REPAIR

- A. Cleaning: Immediately after completing spraying operations in each containable area of Project, remove material overspray and fallout from surfaces of other construction and clean exposed surfaces to remove evidence of soiling.
- B. Cure exposed sprayed fire-resistive material according to product manufacturer's written recommendations to prevent premature drying.
- C. Protect fire-resistive material, according to advice of product manufacturer and Installer, from damage resulting from construction operations or other causes so fire protection will be without damage or deterioration at the time of Substantial Completion.
- D. Coordinate application of fire-resistive material with other construction to minimize the need to cut or remove fire protection. As installation of other construction proceeds, inspect fire-resistive material and patch any damaged or removed areas.

1. Patch and repair fireproofing where City of New York's Testing Agency has performed tests.
- E. Repair or replace work that has not been successfully protected.

END OF SECTION

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SECTION 078413

FIRESTOPS AND SMOKESEALS

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the firestops and smoke seals as shown on the drawings and/or specified herein, including, but not limited to, the following:
 - 1. Penetrations through fire-resistance-rated floor and roof construction including both empty openings and openings containing cables, pipes, ducts, conduits, and other penetrating items.
 - 2. Penetrations through fire-resistance-rated walls and partitions including both empty openings and openings containing cables, pipes, ducts, conduits, and other penetrating items.
 - 3. Penetrations through smoke barriers and construction enclosing compartmentalized areas involving both empty openings and openings containing penetrating items.
 - 4. Sealant joints in fire-resistance-rated construction.

1.3 RELATED SECTIONS

- A. Cast-in-place concrete - Section 033000.
- B. Unit masonry - Section 042000.
- C. Joint sealers - Section 079200.
- D. Duct penetrations - Division 23.
- E. Cable and conduit penetrations - Division 26.

1.4 REFERENCES

- A. ASTM E 814 "Standard Method of Fire Tests of Through-Penetration Firestops."

- B. UL 1479, UBC 7-5 (Both are same as A. above).
- C. ASTM E 119 "Standard Method of Fire Tests of Building Construction and Materials."
- D. UL 263, UBC 7-1 (Both are same as C. above).
- E. UL 2079 "Tests For Fire Resistance of Building Joint Systems."
- F. ASTM E 1399 "Test For Dynamic Movement Conditions."
- G. ASTM E 1966 (Same as E. above).
- H. Published Through-Penetration Systems by recognized independent testing agencies.
 - 1. UL Fire Resistance Directory, Volume II of current year.
 - 2. Warnock Hersey Certification Listings, current year.
 - 3. Omega Point Laboratories, current year.

1.5 SUBMITTALS

- A. Submit manufacturer's product literature for each type of firestop material to be installed. Literature shall indicate product characteristics, typical uses, performance, limitation criteria, test data and indication that products comply with specified requirements.
- B. Submit shop drawings detailing materials, installation methods, and relationships to adjoining construction for each firestop system, and each kind of construction condition penetrated and kind of penetrating item. Include firestop design designation of qualified testing and inspection agency evidencing compliance with requirements for each condition indicated.
 - 1. Submit documentation, including illustrations, for proposed UL listed (or equal) firestop and smoke seal assembly required for the Project.
- C. Material Safety Data Sheets: Submit MSDS for each firestop product.
- D. Submit qualifications of firestop installer, including letter from firestop manufacturer of products proposed to be installed, wherein manufacturer approves or recognizes as trained/ or certifies installer for installation of that manufacturer's products.
- E. Manufacturer's Letters: For installations or configurations not covered by a UL or Warnock Hersey design number, a recommendation shall be obtained from the manufacturer, in writing, for the specific application.

1.6 QUALITY ASSURANCE

- A. General: Provide firestopping systems that are produced and installed to resist the spread of fire, and the passage of smoke and other gases.
- B. Firestopping materials shall conform to Flame (F) and Temperature (T) ratings as required by local building code and as tested by nationally accepted test agencies per ASTM E 814 or UL 1479. The F rating must be a minimum of one (1) hour but not less than the fire resistance

rating of the assembly being penetrated. T rating, when required by code authority, shall be based on measurement of the temperature rise on the penetrating item(s). The fire test shall be conducted with a minimum positive pressure differential of 0.01 inches of water column.

- C. Firestopping products shall be asbestos free and free of any PCBs.
- D. Do not use any product containing solvents or that requires hazardous waste disposal.
- E. Do not use firestop products which after curing, dissolve in water.
- F. Do not use firestop products that contain ceramic fibers.
- G. Firestopping Installer Qualifications: Firestop application shall be performed by a single firestopping contractor who specializes in the installation of firestop systems, whose personnel to be utilized have received specific training and certification or approval from the proposed respective firestop manufacturer, and firestop installer shall have a minimum of three years experience (under present company name) installing firestop systems of the type herein specified.
- H. Mock-Up: Prepare job site mock-ups of each typical Firestop System proposed for use in the project. Approved mock-ups will be left in place as part of the finished project and will constitute the quality standard for the remaining work.
- I. For firestopping exposed to view, traffic, moisture, and physical damage, provide products that do not deteriorate when exposed to these conditions.
 - 1. For piping penetrations for plumbing and wet-pipe sprinkler systems, provide moisture-resistant through-penetration firestop systems.
 - 2. For floor penetrations with annular spaces exceeding 4 inches or more in width and exposed to possible loading and traffic, provide firestop systems capable of supporting the floor loads involved either by installing floor plates or by other means.
 - 3. For penetrations involving insulated piping, provide through-penetration firestop systems not requiring removal of insulation.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's original unopened containers with manufacturer's name, product identification, lot numbers, UL or Warnock Hersey labels, and mixing and installation instructions, as applicable.
- B. Store materials in the original, unopened containers or packages, and under conditions recommended by manufacturer.
- C. All firestop materials shall be installed prior to expiration of shelf life.

1.8 PROJECT CONDITIONS

- A. Verify existing conditions and substrates before starting work
- B. Do not use materials that contain solvents, show sign of damage or are beyond their shelf life.

- C. During installation, provide masking and drop cloths as needed to prevent firestopping products from contaminating any adjacent surfaces.
- D. Conform to ventilation requirements if required by manufacturer's installation instructions or Material Safety Data Sheet.
- E. Weather Conditions: Do not proceed with installation of firestop products when temperatures are in excess or below the manufacturer's recommendations.
- F. Schedule installation of firestop products after completion of penetrating item installation but prior to covering or concealing of openings.
- G. Coordinate this work as required with work of other trades.

1.9 SEQUENCING AND SCHEDULING

- A. Pre-Installation Conference: Convene a pre-installation conference to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work.
- B. Sequence: Perform work of this and other sections in proper sequence to prevent damage to the firestop systems and to ensure that their installation will occur prior to enclosing or concealing work.
- C. Install all firestop systems after voids and joints are prepared sufficiently to accept the applicable firestop system.
- D. Do not cover firestop systems until they have been properly inspected and accepted by the authority having jurisdiction.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

- A. Subject to compliance with requirements, provide products of one of the following manufacturers:
 - 1. Tremco
 - 2. Bio-Fireshield
 - 3. 3M
 - 4. Specified Technologies Inc.
 - 5. U.S. Gypsum Co.
 - 6. Nelson
 - 7. Hilti, Inc.
 - 8. Grace Flame Safe

9. Or approved equal.

2.2 FIRESTOPPING, GENERAL

- A. **Compatibility:** Provide firestopping composed of components that are compatible with each other, the substrates forming openings, and the items, if any, penetrating the firestopping under conditions of service and application, as demonstrated by firestopping manufacturer based on testing and field experience.
- B. **Accessories:** Provide components for each firestopping system that are needed to install fill materials. Use only components specified by the firestopping manufacturer and approved by the qualified testing and inspecting agency for the designated fire-resistance-rated systems. Accessories include but are not limited to the following items:
 - 1. Permanent forming/damming/backing materials including the following:
 - a. Semirefractory fiber (mineral wool) insulation.
 - b. Sealants used in combination with other forming/damming materials to prevent leakage of fill materials in liquid state.
 - c. Fire-rated form board.
 - d. Joint fillers for joint sealants.
 - 2. Temporary forming materials.
 - 3. Substrate primers.
 - 4. Collars.
 - 5. Steel sleeves.
- C. **Applications:** Provide firestopping systems composed of materials specified in this Section that comply with system performance and other requirements.
- D. Smoke seals at top of partitions shall be flexible to allow for partition deflection.

2.3 FILL MATERIALS FOR THROUGH-PENETRATION FIRESTOP SYSTEMS

- A. **Endothermic, Latex Compound Sealant:** Single-component, endothermic, latex formulation.
- B. **Intumescent, Latex Sealant:** Single-component, Intumescent, latex formulation.
- C. **Intumescent Putty:** Non-hardening, dielectric, water-resistant putty containing no solvents, inorganic fibers, or silicone compounds.
- D. **Intumescent Wrap Strips:** Single-component, elastomeric sheet with aluminum or polyethylene foil on one side.
- E. **Job-Mixed Vinyl Compound:** Prepackaged vinyl-based powder product for mixing with water at Project site to produce a paintable compound, passing ASTM E 136, with flame-spread and smoke-developed ratings of zero per ASTM E 84.

- F. Mortar: Prepackaged dry mix composed of a blend of inorganic binders, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a non-shrinking, homogeneous mortar.
- G. Pillows/Bags: Re-usable, heat-expanding pillows/bags composed of glass-fiber cloth cases filled with a combination of mineral-fiber, water-insoluble expansion agents and fire-retardant additives.
- H. Silicone Foam: Two-component, silicone-based liquid elastomer that, when mixed, expands and cures in place to produce a flexible, non-shrinking foam.
- I. Silicone Sealant: Moisture-curing, single-component, silicone-based, neutral-curing elastomeric sealant of grade indicated below:
 - 1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces and non-sag formulation for openings in vertical and other surfaces requiring a non-slumping/gunnable sealant, unless firestop system limits use to non-sag grade for both opening conditions.

2.4 FIRE-RESISTIVE ELASTOMERIC JOINT SEALANTS

- A. Elastomeric Sealant Standard: Provide manufacturer's standard chemically curing, elastomeric sealant of base polymer indicated that complies with ASTM C 920 requirements, including those referenced for Type, Grade, Class, and Uses, and requirements specified in this Section applicable to fire-resistive joint sealants.
 - 1. Sealant Colors: Color of exposed joint sealants as selected by the Architect.
- B. Single-Component, Neutral-Curing Silicone Sealant: Type S; Grade NS; Class 25; exposure-related Use NT, and joint-substrate-related Uses M, G, A, and (as applicable to joint substrates indicated) O.
 - 1. Additional Movement Capability: Provide sealant with the capability to withstand 33 percent movement in both extension and compression for a total of 66 percent movement.
- C. Multi-Component, Non-Sag, Urethane Sealant: Type M; Grade NS; Class 25; exposure-related Use NT, and joint-substrate-related Uses M, A, and (as applicable to joint substrates indicated) O.
 - 1. Additional Movement Capability: Provide sealant with the capability to withstand 40 percent movement in extension and 25 percent in compression for a total of 65 percent movement in joint width existing at time of installation, when tested for adhesion and cohesion under maximum cyclic movement per ASTM C 719, and remain in compliance with other requirements of ASTM C 920 for uses indicated.
- D. Single-Component, Non-Sag, Urethane Sealant: Type S; Grade NS; Class 25; and Uses NT, M, A, and (as applicable to joint substrates indicated) O.

2.5 MINERAL FIBER/CERAMIC WOOL NON-COMBUSTIBLE INSULATION (FIRE SAFING)

- A. Provide min. 4 pcf Thermafiber as manufactured by Thermafiber Co., min. 4 pcf FBX Safing Insulation as manufactured by Fibrex, or approved equal to suit conditions and to comply with fire resistance and firestop manufacturer's requirements.
- B. Material shall be classified non-combustible per ASTM E 119.

2.6 MIXING

- A. For those products requiring mixing prior to application, comply with firestopping manufacturer's directions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other procedures needed to produce firestopping products of uniform quality with optimum performance characteristics for application indicated.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions with Installer present, for compliance with requirements for opening configuration, penetrating items, substrates, and other conditions affecting performance of firestopping. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning: Clean out openings and joints immediately prior to installing firestopping to comply with recommendations of firestopping manufacturer and the following requirements:
 - 1. Remove all foreign materials from surfaces of opening and joint substrates and from penetrating items that could interfere with adhesion of firestopping.
 - 2. Clean opening and joint substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with firestopping. Remove loose particles remaining from cleaning operation.
 - 3. Remove laitance and form release agents from concrete.
- B. Priming: Prime substrates where recommended by firestopping manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.
- C. Masking Tape: Use masking tape to prevent firestopping from contacting adjoining surfaces that will remain exposed upon completion of work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from firestopping materials. Remove tape as soon as it is possible to do so without disturbing seal of firestopping with substrates.

3.3 CONDITIONS REQUIRING FIRESTOPPING

A. Interior Walls and Partitions

1. Construction joints between top of fire rated walls and underside of floors above, shall be firestopped.
2. Firestop system installed shall have been tested by either UL or Omega Point, including exposure to hose stream test and including for use with steel fluted deck floor assemblies.
3. Firestop system used shall allow for deflection of floor above.

B. Penetrations

1. Penetrations include conduit, cable, wire, pipe, duct, or other elements which pass through one or both outer surfaces of a fire rated floor, wall, or partition.
2. Except for floors on grade, where a penetration occurs through a structural floor or roof and a space would otherwise remain open between the surfaces of the penetration and the edge of the adjoining structural floor or roof, provide firestopping to fill such spaces in accordance with ASTM E 814.
3. These requirements for penetrations shall apply whether or not sleeves have been provided, and whether or not penetrations are to be equipped with escutcheons or other trim. If penetrations are sleeved, firestop annular space, if any, between sleeve and wall of opening.

- C. Provide firestopping to fill miscellaneous voids and openings in fire rated construction in a manner essentially the same as specified herein before.

3.4 INSTALLING THROUGH PENETRATION FIRESTOPS

- A. General: Comply with the through penetrations firestop manufacturer's installation instructions and drawings pertaining to products and applications indicated.
- B. Install forming/damming materials and other accessories of types required to support fill materials during their application and in the position needed to produce the cross sectional shapes and depths required to achieve fire ratings of designated through-penetration firestop systems. After installing fill materials, remove combustible forming materials and other accessories not indicated as permanent components of firestop systems.
- C. Install fill materials for through penetration firestop systems by proven techniques to produce the following results:
1. Completely fill voids and cavities formed by openings, forming materials, accessories, and penetrating items.
 2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.
 3. For fill materials that will remain exposed after completing work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.5 INSTALLING FIRE RESISTIVE JOINT SEALANTS

- A. General: Comply with ASTM C 1193, and with the sealant manufacturer's installation instructions and drawings pertaining to products and applications indicated.
- B. Install joint fillers to provide support of sealants during application and at position required to produce the cross sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability and develop fire resistance rating required.
- C. Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross sectional shapes and depths relative to joint width that optimum sealant movement capability. Install sealants at the same time joint fillers are installed.
- D. Tool no sag sealants immediately after sealant application and prior to the time skinning or curing begins. Form smooth, uniform beads of configuration indicated or required to produce fire resistance rating, as well as to eliminate air pockets, and to ensure contact and adhesion of sealants with sides of joint. Remove excess sealant from surfaces adjacent to joint. Do not use tooling agents that discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

3.6 INSTALLING FIRESAFING INSULATION

- A. Install fire safing insulation utilizing welded or screw applied galvanized steel impaling pins and retaining clips; space clips or pins 24" o.c. maximum.
- B. Completely fill voids in areas where safing insulation is required. At spandrel conditions/floor edges, depth of insulation top to bottom shall be at least four (4) inches.
- C. Cover top of all safing insulation with firestop sealant or spray.

3.7 FIELD QUALITY CONTROL

- A. Inspecting agency employed and paid by the Owner will examine completed firestopping to determine, in general, if it is being installed in compliance with requirements.
- B. Inspecting agency will report observations promptly and in writing to Contractor, Owner and Architect.
- C. Do not proceed to enclose firestopping with other construction until reports of examinations are issued.
- D. Where deficiencies are found, Contractor must repair or replace firestopping so that it complies with requirements.

3.8 CLEANING

- A. Clean off excess fill materials and sealants adjacent to openings and joints as work progresses by methods and with cleaning materials approved by manufacturers of firestopping products and of products in which opening and joints occur.

- B. Protect firestopping during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated firestopping immediately and install new materials to product firestopping complying with specified requirements.

END OF SECTION

SECTION 079200

JOINT SEALERS

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. The Work of this Section includes all labor, materials, equipment and services necessary to complete the joint sealers work as shown on the drawings and/or specified herein, including but not necessarily limited to the following:
 - 1. Flashing reglets and retainers.
 - 2. Coping joints.
 - 3. Exterior wall joints not specified to be sealed in other Sections of work.
 - 4. Interior wall joints not specified to be sealed in other Sections of work, including caulking to fill between architectural woodwork and any wall, floor and/or ceiling imperfections.
 - 5. Control and expansion joints in walls.
 - 6. Joints at wall penetrations.
 - 7. Joints between items of equipment and other construction.
 - 8. All other joints required to be sealed to provide a positive barrier against penetration of air and moisture.

1.3 RELATED SECTIONS

- A. Roofing - Division 7.
- B. Firestop sealants – Section 078413.

1.4 QUALITY ASSURANCE

- A. Qualification of Installers: Use only personnel who are thoroughly familiar, skilled and specially trained in the techniques of sealant work, and who are completely familiar with the published recommendations of the sealant manufacturer.

- B. **Pre-Construction Field Adhesion Testing:** Before installing elastomeric sealants, field test their adhesion to project joint substrates according to the method in ASTM C 794 and C 1521 that is appropriate for the types of Project joints.
- C. Perform testing per ASTM C 1248 on interior and exterior sealants to determine if sealants or primers will stain adjacent surfaces. No sealant work shall start until results of these tests have been submitted to the Architect and he has given his written approval to proceed with the work.

1.5 SUBMITTALS

- A. **Shop Drawings:** Submit shop drawings showing all joint conditions, indicating relation of adjacent materials, all sealant materials (sealant, bond breakers, backing, primers, etc.), and method of installation.
 - 1. Submit joint sizing calculations certifying that movement capability of sealant is not being exceeded.
- B. **Samples:** Submit the following:
 - 1. Color samples of sealants, submit physical samples (not color chart).
 - 2. Sealant bond breaker and joint backing.
- C. **Product Data:** Submit manufacturer's technical information and installation instructions for:
 - 1. Sealant materials, indicating that material meets standards specified herein.
 - 2. Backing rods.
- D. Submit manufacturer's certification as required by Article 1.6 herein.
- E. Submit results of testing required in Article 1.4 herein.

1.6 MANUFACTURER'S RESPONSIBILITY AND CERTIFICATION

- A. Contractor shall require sealant manufacturer to review the Project joint conditions and details for this Section of the work. Contractor shall submit to the Architect written certification from the sealant manufacturer that joints are of the proper size and design, that the materials supplied are compatible with adjacent materials and backing, that the materials will properly perform to provide permanent watertight, airtight or vaportight seals (as applicable), and that materials supplied meet specified performance requirements.

1.7 ENVIRONMENTAL CONDITIONS

- A. **Temperature:** Install all work of this Section when air temperature is above forty (40) degrees F. and below eighty (80) degrees F., unless manufacturer submits written instructions permitting sealant use outside of this temperature range.
- B. **Moisture:** Do not apply work of this Section on surfaces which are wet, damp, or have frost.

1.8 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect the materials of this Section, before, during and after installation and to protect the installed work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary.
- C. Storage
 - 1. Store sealant materials and equipment under conditions recommended by their manufacturer.
 - 2. Do not use materials stored for a period of time exceeding the maximum recommended shelf life of the material.
 - 3. Material shall be stored in unopened containers with manufacturers' name, batch number and date when shelf life expires.

1.9 GUARANTEE

- A. Provide a written, notarized guarantee from the manufacturer stating that the applied sealants shall show no material failure for a period of ten (10) years.
- B. Contractor to provide a written, notarized, guarantee stating that the applied sealants shall show no failure due to improper installation for a period of two (2) years.
- C. Guarantee shall be in a form acceptable to the Owner and executed by an authorized individual.
- D. Include in guarantee provision, agreement to repair and/or replace, at Contractor's expense, sealant defects which develop during guarantee period, because of faulty labor and/or materials.

PART 2 PRODUCTS

2.1 SEALANT MATERIALS

- A. Exterior Wall Sealant: Provide one (1) part non-sag sealant equal to No. 790 or 795 made by Dow Corning, "Silpruf SCS 2000" or "LM SCS 2700" made by G.E. or "Spectrem 1" or "Spectrem 3" made by Tremco or "Sonolastic 150" by Sonneborn conforming to the minimum standards of ASTM C 920, Type S, Grade NS, Class 50.
- B. Interior Sealant: Provide a one (1) part acrylic based sealant conforming to ASTM C 834, equal to "AC-20+ Silicone" made by Pecora or equal made by Tremco, Dow or approved equal.
- C. Colors: Custom colors of sealants as selected by the Architect.

2.2 MISCELLANEOUS MATERIALS

- A. Back-Up Materials: Provide back-up materials and preformed joint fillers, non-staining, non-absorbent, compatible with sealant and primer, and of a resilient nature, equal

to "HBR" made by Nomaco Inc. or approved equal, twenty-five (25) percent wider than joint width. Materials impregnated with oil, bitumen or similar materials shall not be used. Provide back-up materials only as recommended by sealant manufacturer in writing.

- B. Provide bond breakers, where required, of polyethylene tape as recommended by manufacturer of sealant.
- C. Provide primers recommended by the sealant manufacturer for each material to receive sealant. Note that each exterior joint must be primed prior to sealing.
- D. Provide solvent, cleaning agents and other accessory materials as recommended by the sealant manufacturer.
- E. Materials shall be delivered to the job in sealed containers with manufacturer's original labels attached. Materials shall be used per manufacturer's printed instructions.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions where joint sealers are to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 INSTALLATION

- A. Sealant Installation Standard: Comply with instructions and recommendations of the manufacturer and in accordance with ASTM C 1193 for use of joint sealants as applicable to materials, applications and conditions required by this Project where more stringent installation requirements are specified herein, such requirements shall apply.
- B. Sample Section of Sealant
 1. During sealant installation work in exterior wall, the manufacturer of sealant shall send his representative to the site, under whose supervision a section of the wall (used as "control section") shall be completed for purposes of determining performance characteristics of sealant in joints. Architect shall be informed of time and place of such installation of control section.
 2. Control section shall be installed according to specification given herein and shall not be considered as acceptable until written acceptance is provided by the Architect.
 3. Accepted control section shall be standard to which all other sealant work must conform.
- C. Supervision: The Contractor shall submit to the Architect written certification from the sealant manufacturer that the applicators have been instructed in the proper application of their materials. The Contractor shall use only skilled and experienced workmen for installation of sealant.

- D. Apply sealant under pressure with a hand or power actuated gun or other appropriate means. Gun shall have nozzle of proper size and provide sufficient pressure to completely fill joints as detailed. Neatly point or tool joint to provide the contour as indicated on the drawings.
- E. Preparation and Application
1. Thoroughly clean all joints, removing all foreign matter such as dust, oil, grease, water, surface dirt and frost. Sealant must be applied to the base surface. Previously applied film must be entirely removed.
 2. Stone, masonry and concrete surfaces to receive sealant shall be cleaned where necessary by grinding, water blast cleaning, mechanical abrading, or combination of these methods as required to provide a clean, sound base surface for sealant adhesion.
 - a. Do not use any acid or other material which might stain surfaces.
 - b. Remove laitance by grinding or mechanical abrading.
 - c. Remove loose particles present or resulting from grinding, abrading, or blast cleaning by blowing out joints with compressed air, oil and water free, or vacuuming joints prior to application of primer or sealant.
 3. Clean non-porous surfaces such as metal and glass chemically. Remove protective coatings on metallic surfaces by solvent that leaves no residue and is compatible with sealant. Use solvent and wipe dry with clean, dry lint free paper towels. Do not allow solvent to air dry without wiping. Clean joint areas protected with masking tape or strippable films as above after removal of tape film.
 4. Do not seal joints until they are in compliance with drawings, or meet with the control section standard.
 5. Joint Size and Sealant Size: Joints to receive sealant shall be at least 1/4" wide. In joint 1/4" to 3/8" wide, sealant shall be 1/4" deep. In joints wider than 3/8" and up to 1" wide, sealant depth shall be one half the joint width. For joints wider than 1", sealant depth shall be as recommended by the sealant manufacturer. Depth of joint is defined as distance from outside face of joint to closest point of the filler.
 6. Primer: Thoroughly clean joints and apply primer to all surfaces that will receive sealant. Apply primer on clean, dry surfaces, and prior to installation of joint backing. Completely wet both inner faces of the joint with primer. Mask adjacent surfaces of joint with non-staining masking tape prior to priming. Apply primer with clean brush and only when temperature is above 45 deg. F.
 7. Joint Backing: In joints where depth of joint exceeds required depth of sealant, install joint backing (after primer is dry) in joints to provide backing and proper joint shape for sealant. Proper shape for sealant is a very slight "hourglass" shape, with back and front face having slight concave curvature. Use special blunt T-shaped tool or roller to install joint backing to the proper and uniform depth required for the sealant. Joint backing shall be installed with approximately twenty-five (25) percent compressions. Do not stretch, twist, braid, puncture, or tear joint backing. Butt joint backing at intersections.

8. **Bond Breaker:** Install bond breaker smoothly over joint backing so that sealant adheres only to the sides of the joint and not backing.
9. **Sealant Application:** Apply sealant in accordance with the manufacturer's application manual and manufacturer's instructions, using hand guns or pressure equipment, on clean, dry, properly prepared substrates, completely filling joints to eliminate air pockets and voids. Mask adjacent surfaces of joint with non-staining masking tape. Force sealant into joint in front of the tip of the "caulking gun" (not pulled after it) and force sealant against sides to make uniform contact with sides of joint and to prevent entrapped air or pulling of sealant off of sides. Fill sealant space solid with sealant.
10. **Tooling:** Tool exposed joints to form smooth and uniform beds, with slightly concave surface conforming to joint configuration per Figure 4A in ASTM C 1193. Finished joints shall be straight, uniform, smooth and neatly finished. Remove masking tape immediately after tooling of sealant and before sealant face starts to "skin" over. Neatly remove any excess sealant from adjacent surfaces of joint, leaving the work in a neat, clean condition.
11. **Replace sealant which is damaged during construction process.**

END OF SECTION

SECTION 081113

STEEL DOORS AND FRAMES

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. Work of this Section includes all labor, materials, equipment and services necessary to complete the steel doors and frames work as shown on the drawings and/or specified herein, including, but not limited to, the following:
 - 1. Interior and exterior hollow metal doors and frames for fire rated and unrated door openings.
 - 2. Trimmed openings.
 - 3. Preparation of metal doors and frames to receive finish hardware, including reinforcements, drilling and tapping necessary.
 - 4. Preparation of hollow metal doors to receive glazing where required.
 - 5. Furnishing anchors for building into masonry and drywall.
 - 6. Factory prime painting of work of this Section.

1.3 RELATED SECTIONS

- A. Unit Masonry - Section 042000.
- B. Installation of doors and frames - Section 062000.
- C. Painting - Section 099000.

1.4 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, core descriptions, label compliance, compliance with standards referenced herein, sound and fire-resistance ratings, and finishes for each type of door and frame specified.
- B. Shop Drawings: Show fabrication and installation of doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, reinforcement for surface applied hardware, dimensions of profiles and hardware preparation,

location and installation requirements of door and frame hardware and reinforcements, and details of joints and connections. Show anchorage and accessories.

- C. Door Schedule: Submit schedule of doors and frames using same reference numbers for details and openings as those on Drawings.
 - 1. Coordinate glazing frames and stops with glass and glazing requirements.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A firm experienced in manufacturing custom steel doors and frames similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- B. Testing Agency Qualifications: An independent agency qualified according to ASTM E 329 for testing indicated, as documented according to ASTM E 548.
- C. Source Limitations: Obtain custom steel doors and frames through one source from a single manufacturer.
- D. Fire-Rated Door and Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated.
 - 1. Test Pressure: Test according to NFPA 252 or UL 10C. After 5 minutes into the test, the neutral pressure level in furnace shall be established at 40" or less above the sill.
 - 2. Oversize Fire-Rated Door Assemblies: For units exceeding sizes of tested assemblies, provide certification by a testing agency acceptable to authorities having jurisdiction that doors comply with standard construction requirements for tested and labeled fire-protection-rated door assemblies except for size.
 - 3. Temperature-Rise Rating: At exit enclosures, provide doors that have a temperature-rise rating as required by prevailing Building Code in 30 minutes of fire exposure.
- E. Fire-Rated, Borrowed-Light Frame Assemblies: Assemblies complying with NFPA 80 that are listed and labeled, by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire-protection ratings indicated, based on testing according to NFPA 257 or UL 9. Label each individual glazed lite.
- F. Smoke-Control Door Assemblies: Comply with NFPA 105 or UL 1784.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver doors and frames palleted, wrapped, or crated to provide protection during transit and Project site storage. Do not use nonvented plastic.
- B. Inspect doors and frames, on delivery, for damage. Minor damage may be repaired provided refinished items match new work and are approved by Commissioner; otherwise, remove and replace damaged items as directed.

- C. Store doors and frames under cover at building site. Conform to the requirements of ANSI A 250-11-2001 for site storage unless more stringent requirements are noted herein. Place units on minimum 4-inch high wood blocking. Avoid using nonvented plastic or canvas shelters that could create a humidity chamber. If wrappers on doors become wet, remove cartons immediately. Provide minimum 1/4-inch spaces between stacked doors to permit air circulation.

PART 2 PRODUCTS

2.1 FABRICATION - GENERAL

- A. Fabricate hollow metal units to be rigid, neat in appearance and free from defects, warp or buckle. Accurately form metal to required sizes and profiles. Weld exposed joints continuously, grind, dress, and make smooth, flush and invisible. Metallic filler to conceal manufacturing defects is not acceptable.
- B. Unless otherwise indicated, provide countersunk flat Phillips or Jackson heads for exposed screws and bolts.
- C. Prepare hollow metal units to receive finish hardware, including cutouts, reinforcing, drilling and tapping in accordance with Finish Hardware Schedule and templates provided by hardware suppliers. Comply with applicable requirements of ANSI A115 "Specifications for Door and Frame Preparation for Hardware."
- D. Locate finish hardware as shown on final shop drawings in accordance with locations noted herein.

2.2 MANUFACTURERS

- A. Provide products manufactured by Steelcraft, Curries, Ceco Door Products, or approved equal meeting these specifications.

2.3 FRAMES

- A. Materials
 - 1. Frames for exterior openings shall be made of commercial grade cold-rolled steel conforming to ASTM A 1008/A, Type B not less than 14 ga., and shall have a hot dipped galvanized coating conforming to ASTM A 924 and A 653 with A-60 coating. The zinc-alloy coating shall be a dull matte surface treated for paint adhesion.
 - 2. Frames for interior openings shall be either commercial grade cold-rolled steel conforming to ASTM A 1008/A, Type B or commercial grade hot-rolled steel conforming to ASTM A 1011/A, Commercial Steel, Type B. Metal thickness shall be not less than sixteen (16) ga. for frames in openings 4'-0" or less in width; not less than fourteen (14) ga. for frames in openings over 4'-0" in width.
- B. Design and Construction
 - 1. All frames shall be welded units with integral trim, of the sizes and shapes shown on approved shop drawings. Knocked-down frames will not be accepted.

2. All finished work shall be strong and rigid, neat in appearance, square, true and free of defects, warp or buckle. Molded members shall be clean cut, straight and of uniform profile throughout their lengths.
3. Jamb depths, trim, profile and backbends shall be as shown on drawings.
 - a. Frames at drywall partitions shall be formed with double return backbends to prevent cutting into drywall surface.
4. Welded frames shall have corners mitered and reinforced and faces of welded frames shall be continuously back welded full depth and width of frame conforming to NAAMM Standard HMMA-820; face joints shall be hairline.
5. Minimum depth of stops shall be 5/8".
6. Frames for multiple or special openings shall have mullion and/or rail members which are closed tubular shapes having no visible seams or joints. All joints between faces of abutting members shall be securely welded and finished smooth.
 - a. Mullions shall have 16 ga. internal steel stiffeners welded not less than 4" o.c.
7. Hardware Reinforcements
 - a. Frames shall be mortised, reinforced, drilled and tapped at the factory for fully-templated mortised hardware only, in accordance with approved hardware schedule and templates provided by the hardware supplier. Where surface-mounted hardware is to be applied, frames shall have reinforcing plates.
 - b. Minimum thickness of hardware reinforcing plates shall be as follows:
 - 1). Hinge and pivot reinforcements - seven (7) ga., 1-1/4" x 10" minimum size.
 - 2). Strike reinforcements - twelve (12) gauge
 - 3). Flush bolt reinforcements - twelve (12) gauge
 - 4). Closer reinforcements - twelve (12) gauge
 - 5). Reinforcements for surface mounted hardware - twelve (12) gauge.
8. Floor Anchors
 - a. Provide adjustable floor anchors, providing not less than two (2) inch height adjustment.
 - b. Minimum thickness of floor anchors shall be fourteen (14) gauge.
9. Jamb Anchors
 - a. Frames for installation in masonry walls shall be provided with adjustable jamb anchors of the wire type. Anchors shall be not less than 0.156" diameter steel wire. The number of anchors provided on each jamb shall be as follows:
 - 1). Frames up to 7'-6" height - three (3) anchors.
 - 2). Frames 7'-6" to 8'-0" height - four (4) anchors.
 - 3). Frames over 8'-0" height - one (1) anchor for each 2'-0" or fraction thereof in height.

- b. Frames to be anchored to previously placed concrete or masonry shall be provided with minimum 3/8" concealed bolts set into expansion shields or inserts at six (6) inches from top and bottom and twenty-four (24) inches o.c. Reinforce frames at anchor locations with sixteen (16) gauge sheet steel stiffeners welded to frame at each anchor.
10. Anchors in exterior frames and in masonry walls shall be hot dip galvanized per ASTM A 153.
 11. Frames for installation in masonry wall openings more than 4'-0" in width shall have an angle or channel stiffener factory welded into the head. Such stiffeners shall be not less than twelve (12) gauge steel and not longer than the opening width, and shall not be used as lintels or load bearing members.
 12. Dust cover boxes (or mortar guards) of not thinner than twenty-six (26) gauge steel shall be provided at all hardware mortises on frames to be set in masonry or plaster partitions.
 13. Ceiling Struts: Minimum 3/8" thick x 2" wide steel.
 14. All frames shall be provided with a steel spreader temporarily attached to the feet of both jambs to serve as a brace during shipping and handling.
 15. Except on weatherstripped frames, drill stops to receive three (3) silencers on strike jambs of single door frames and two (2) silencers on heads of double-door frames.
- C. Finish: After fabrication, all tool marks and surface imperfections shall be removed, and exposed faces of all welded joints shall be dressed smooth. Frames shall then be chemically treated to insure maximum paint adhesion and shall be coated on all surfaces with one coat of rust-inhibitive baked-on alkyd primer standard with the manufacturer which is fully cured before shipment to a dry film thickness of 2.0 mils.
1. Frames set in masonry walls shall be grouted in as described in Section 042000 – Unit Masonry. These frames shall have surfaces in contact with grout shop coated with epoxy coating equal to Series 27 FC Typoxy made by Tnemec or approved equal spray applied at 4 to 6 mils, passing NFPA 101, Class A for smoke and flame spread, tested per ASTM E 84.

2.4 HOLLOW METAL DOORS

- A. Materials: Doors shall be made of commercial quality, level, cold rolled steel conforming to ASTM A 1008/A, Commercial Steel, Type B and free of scale, pitting or other surface defects. Face sheets for interior doors shall be not less than eighteen (18) gauge. Face sheets for exterior doors shall be not less than sixteen (16) gauge and shall have a hot dipped galvanized coating conforming to ASTM A 924 and A 653, A-60 coating. The zinc alloy coating shall be a dull matte surface treated for paint adhesion.
- B. Design and Construction
1. All doors shall be of the types and sizes shown on the approved shop drawings, and shall be fully welded seamless construction with no visible seams or joints on their faces or vertical edges. Minimum door thickness shall be 1-3/4".

2. All doors shall be strong, rigid and neat in appearance, free from warpage or buckles. Corner bends shall be true and straight and of minimum radius for the gauge of metal used.
 3. Face sheets shall be stiffened by continuous vertical formed steel sections spanning the full thickness of the interior space between door faces. These stiffeners shall be not less than twenty two (22) gauge spaced not more than six (6) inches apart and securely attached to face sheets by spot welds not more than five (5) inches o.c. Spaces between stiffeners shall be sound deadened and thermal insulated the full height of the door with an inorganic non-combustible batt type material.
 4. Door faces shall be joined at their vertical edges by a continuous weld extending the full height of the door. All such welds shall be ground, filled and dressed smooth to make them invisible and provide a smooth flush surface.
 5. Top and bottom edges of all doors shall be closed with a continuous recessed steel channel not less than fourteen (14) gauge, extending the full width of the door and spot welded to both faces. Exterior doors shall have an additional flush closing channel at their top edges and, where required for attachment of weatherstripping, a flush closure also at their bottom edges. Openings shall be provided in the bottom closure of exterior doors to permit the escape of entrapped moisture.
 6. Edge profiles shall be provided on both vertical edges of doors as follows:
 - a. Single-acting swing doors - beveled 1/8" in two (2) inches.
 - b. Double acting swing doors - rounded on 2-1/8" radius.
 - c. No square edge doors permitted.
 7. Hardware Reinforcements
 - a. Doors shall be mortised, reinforced, drilled and tapped at the factory for fully templated hardware only in accord with the approved hardware schedule and templates provided by the hardware supplier. Where surface-mounted hardware (or hardware, the interrelation of which is to be adjusted upon installation - such as top and bottom pivots, floor closers, etc.) is to be applied, doors shall have reinforcing plates.
 - b. Minimum gauges for hardware reinforcing plates shall be as follows:
 - 1). Hinge and pivot reinforcement - seven (7) gauge.
 - 2). Reinforcement for lock face, flush bolts, concealed holders, concealed or surface mounted closers - twelve (12) gauge.
 - 3). Reinforcements for all other surface mounted hardware - sixteen (16) gauge.
- C. Finish: After fabrication, all tool marks and surface imperfections shall be dressed, filled and sanded as required to make all faces and vertical edges smooth, level and free of all irregularities. Doors shall then be chemically treated to insure maximum paint adhesion and shall be coated, on all exposed surfaces, with manufacturer's standard rust-inhibitive alkyd primer as specified for frames which shall be fully cured before shipment.
- D. Flatness: Doors shall maintain a flatness tolerance of 1/16" maximum, in any direction, including in a diagonal direction.

2.5 LABELED DOORS AND FRAMES

- A. Labeled doors and frames shall be provided for those openings requiring fire protection ratings as scheduled on drawings. Such doors and frames shall be labeled by Underwriters' Laboratories or other nationally recognized agency having a factory inspection service.
- B. If any door or frame specified by the Commissioner to be fire-rated cannot qualify for appropriate labeling because of its design, size, hardware or any other reason, the Commissioner shall be so advised before fabricating work on that item is started.

2.6 HARDWARE LOCATIONS

- A. The location of hardware on doors and frames shall be as noted in "Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames" of the Door Hardware Institute unless otherwise required by prevailing Handicap Codes.

2.7 CLEARANCES

- A. Fabricate doors and frames to meet edge clearances as follows:
 - 1. Jambs and Head: 1/8" plus or minus 1/16".
 - 2. Meeting Edges, Pairs of Doors: 1/8" Plus or minus 1/16".
 - 3. Bottom: 3/4", if no threshold.
 - 4. Bottom: 3/8", at threshold.
- B. Fire rated doors shall have clearances as required by NFPA 80.

2.8 MANUFACTURING TOLERANCES

- A. Manufacturing tolerance shall be maintained within the limits given in HMMA 841 of ANSI/NAAMM, current edition.

2.9 PREPARATION FOR FINISH HARDWARE

- A. Prepare door and frames to receive hardware:
 - 1. Hardware supplier shall furnish hollow metal manufacturer approved hardware schedule, hardware templates, and samples of physical hardware where necessary to insure correct fitting and installation.
 - 2. Preparation includes sinkages and cut-outs for mortise and concealed hardware.
- B. Provide reinforcements for both concealed and surface applied hardware:
 - 1. Drill and tap mortise reinforcements at factory, using templates.
 - 2. Install reinforcements with concealed connections designed to develop full strength of reinforcements.

2.10 REJECTION

- A. Hollow metal frames or doors which are defective, have hardware cutouts of improper size or location, or which prevent proper installation of doors, hardware or work of other trades, shall be removed and replaced with new at no cost.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions where steel doors and frames are to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 INSTALLATION

- A. Refer to Section 062000 for installation procedures for all work of this Section.

END OF SECTION

SECTION 083600

SECTIONAL OVERHEAD DOORS

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. Work of this Section includes all labor, materials, equipment and services necessary to complete the sectional overhead doors, as shown on the drawings, and/or specified herein, including but not limited to, the following:
 - 1. Steel sectional overhead doors.
 - 2. Tracks and hardware.
 - 3. Motor operation.

1.3 RELATED SECTIONS

- A. Finish painting - Section 099000.
- B. Electric power - Division 26.

1.4 QUALITY ASSURANCE

- A. Provide each sectional overhead door as a complete unit produced by one manufacturer, including frames, sections, brackets, guides, tracks, counterbalance mechanisms, hardware, operators and installation accessories, to suit openings and head room allowable.
- B. Unless otherwise acceptable to Commissioner, furnish sectional overhead door units by one manufacturer for entire project.
- C. Wind Loading: Design and reinforce sectional overhead doors to withstand a 30 lb. per sq. ft. wind loading pressure with a maximum deflection of 1/120 of opening width.

1.5 SUBMITTALS

- A. Product Data: Submit manufacturer's product data, roughing-in diagrams, and installation instructions for each type and size of overhead door. Include manufacturer's operating instructions and maintenance data.
- B. Shop drawings: Submit shop drawings for special components and installations which are not fully dimensioned or detailed in manufacturer's data.

1.6 PRODUCT HANDLING

- A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Provide overhead door assemblies Model 3220 by manufactured by Cloplay or equal by Overhead Door Co., Crawford Door Co., or approved equal meeting these specifications.

2.2 MATERIALS

- A. Construct door sections from 20 ga. galvanized structural quality carbon steel sheets complying with ASTM A924, with a minimum yield strength of 33,000 psi, and a minimum G90 zinc coating complying with ASTM A653. Sheet shall be ribbed or fluted to suit manufacturer's standard.
- B. Fabricate sections from a single sheet to provide units not more than 24" high, and nominal 2" deep. Roll horizontal meeting edges to a continuous shiplap rabbeted, or keyed weather seal, with a reinforcing flange return.
- C. Enclose open section with 16 ga. galvanized steel channel end stiles welded in place. Provide intermediate stiles, cut to door section profile, spaced at not more than 48" o.c. and welded in place.
- D. Reinforce bottom section with a continuous channel or angle conforming to bottom section profile.
- E. Reinforce sections with continuous horizontal and diagonal reinforcing, as required by door width and design wind loading. Provide galvanized steel bars, struts, trusses or strip steel, formed to depth, and bolted or welded in place.
- F. Insulate inner core of steel sections with manufacturer's standard glass fiber, polystyrene, or polyurethane foam type insulation. Enclose insulation with manufacturer's standard steel sheet secured to door panel.
- G. Finish door sections as follows
 - 1. Pretreat zinc-coated steel with a zinc phosphate conversion coating after cleaning.
 - 2. Apply manufacturer's standard prime coat, applied to both door faces after forming.
- H. Inserts and Anchorages: Furnish inserts and anchoring devices which must be set in concrete or built into masonry for installation of units. Provide setting drawings, templates, and directions for installation of anchorage devices. Coordinate delivery with other work to avoid delay.

1. See Concrete and Masonry Sections of these specifications for installation of inserts and anchorage devices.

2.3 TRACKS, SUPPORTS AND ACCESSORIES

- A. Tracks: Provide manufacturer's standard galvanized steel track system, sized for door size and weight, and designed for clearances shown. Provide complete track assembly including brackets, bracing and reinforcing for rigid support of ball bearing roller guides, for required door type and size. Slot vertical sections of track at 2" o.c. for door drop safety device. Slope tracks at proper angle from vertical, or otherwise design to ensure tight closure at jambs when door unit is closed. Weld or bolt to track supports.
- B. Track Reinforcement and Supports: Provide galvanized steel track reinforcement and support members. Secure, reinforce and support tracks as required for size and weight of door to provide strength and rigidity, and to ensure against sag, sway, and detrimental vibration during opening and closing of doors. Support and attach tracks to opening jambs with continuous angle welded to tracks and attached to wall. Support horizontal (ceiling racks) with continuous angle welded to track and supported by laterally-braced attachments to overhead structural members at curve and end of tracks.
- C. Weather Seals: Provide continuous rubber, neoprene, or flexible vinyl adjustable weatherstrip gasket at tops and compressible astragal on bottoms of each overhead door.
 1. In addition, provide continuous flexible seals at door jamb edges for a fully weathertight installation.
- D. Vision Panels: Except as otherwise indicated, furnish "B" grade double-strength sheet glass vision panels in arrangement shown. Set glass in rubber or neoprene channel glazing strips. Provide removable stops of same material as door section frames.

2.4 HARDWARE

- A. Provide heavy-duty, rust-resistant hardware, with galvanized fasteners, to suit type of door.
- B. Hinges: Provide heavy steel hinges at each end stile and at each intermediate stile, per manufacturer's recommendations for size of door. Attach hinges to door sections through stiles and rails with bolts and lock nuts or lock washers and nuts. Use rivets or self-tapping fasteners only where access to nuts is not possible. Provide double-end hinges, where required, for doors exceeding 16'-0" in width, unless otherwise recommended by door manufacturer.
- C. Rollers: Provide heavy-duty rollers, with steel ball bearings in case-hardened steel races, mounted with varying projections to suit slope of track. Extend roller shaft through both hinges where double hinges are required. Provide case-hardened roller tires to suit size of track (3" dia. for 3" track; 2" dia. for 2" track).

2.5 COUNTERBALANCING MECHANISMS

- A. Hang door assembly for operation by heavy duty torsion type counterbalance mechanism with oil tempered helical wound springs sprung for size and weight of door. Mechanism shall be capable of a minimum life of 100,000 cycles.

2.6 ELECTRIC DOOR OPERATIONS

- A. Provide electric door operator assembly of the size and capacity recommended and provided by the door manufacturer, complete with electric motor and factory-prewired motor controls, gear reduction unit, solenoid operated brake, clutch, remote control stations and control devices. Operator shall be trolley type with worm gear drive.
- B. Provide a hand-operated disconnect or a mechanism for automatically engaging a sprocket chain operator and releasing brake for emergency manual operation. Include an interlock device to automatically prevent the motor from operating when emergency sprocket is engaged.
- C. Design operator so that motor may be removed without disturbing the limit-switch adjustment and without affecting the emergency auxiliary operator.
- D. Provide high-starting torque, reversible, constant duty, Class A insulated electric motors with overload protection, sized to move door in either direction, from any position, at not less than 2/3' or more than 1' per second. Coordinate wiring requirements and current characteristics of motors with electrical system of the building; see Division 16 Sections of these specifications.
- E. Provide momentary-contact, 3-button control station with push button controls labeled "open," "close" and "stop" enclosed in general purpose NEMA Type 1 enclosure.
- F. Automatic Reversing Control: Furnish each door with automatic safety switch, extending full width of door bottom, and located within neoprene or rubber astragal mounted to bottom door rail. Contact with switch will immediately reverse downward door travel. Furnish manufacturer's standard take-up reel or self-coiling cable.
 - 1. Provide electrically actuated automatic bottom bar.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions where sectional overhead doors are to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 INSTALLATION

- A. Install door, track, and operating equipment complete with necessary hardware, jamb and head mold stops, anchors, inserts, hangers, and equipment supports in accordance with final shop drawings, manufacturer's instructions and as herein specified.
- B. Fasten vertical track assembly to framing at not less than 24" o.c. Hang horizontal track from structural overhead framing with angle or channel hangers, welded and bolt-fastened in place. Provide sway bracing, diagonal bracing, and reinforcing as required for rigid installation of track and door operating equipment.

- C. Upon completion of installation, including work by other trades, lubricate, test and adjust doors to operate easily, free from warp, twist, or distortion and fitting weathertight for entire perimeter.

END OF SECTION

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SECTION 084550

TRANSLUCENT LINEAR CHANNEL GLAZING SYSTEM

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the translucent linear channel glazing system as indicated on the drawings and/or specified herein, including the following:
 - 1. Translucent linear glass units.
 - 2. Framing.
 - 3. Glazing accessories.

1.3 RELATED SECTIONS

- A. General Conditions.
- B. Submittals – Section 013300.
- C. Sealants - Section 079200.

1.4 SYSTEM DESCRIPTION

- A. System: Thermally broken interior frame systems using a 41 mm flange channel glass.
- B. Design Requirements:
 - 1. Manufacturer: Responsible for designing system, including anchorage to structural system and necessary modifications to meet specified requirements and maintain visual design concepts.
 - 2. Drawings: Diagrammatic and intended to establish basic dimension of units, sight lines, and profiles of units.
 - 3. Provide concealed fastening wherever possible.
 - 4. Attachment Considerations: Account for site peculiarities and expansion and contraction movements so there is no possibility of loosening, weakening and fracturing connection between piping and units.

5. Maximum Allowable Deflection: $L/300$.

1.5 PERFORMANCE REQUIREMENTS

A. Structural Properties

1. Glass members shall not be relied upon or utilized in calculations to demonstrate structural adequacy of supporting elements.
2. The deflection of any framing member in a direction normal or perpendicular to the plane of the wall when subjected to a uniform and/or concentrated load deflection test in accordance with ASTM E 330-96 and the loads, as per "1" above, shall not:
 - a. exceed $1/300$ of its clear span or 19 mm, whichever is less.
 - b. exceed $2/175$ of its cantilevered length or 19 mm, whichever is less, provided, however, that if two cantilevered members (an example of 2 cantilevered members joining together are 2 mullions joining between points of anchorage) join together the deflection where the members join shall be designed to be limited to the allowable deflection of the lesser cantilever and maximum offset at the splice under load of 0.80 mm.
 - c. In case of a "split mullion" or interlocking construction, the offset between the two halves shall not exceed 0.80 mm under full design load. Slippage/displacement of anchorage under load shall not exceed 1.5 mm between full positive and full negative design load conditions.
 - d. exceed that which can be accommodated by sealants used for the wall system or to join the work to adjacent construction.
3. Glass deflection at full design load shall be limited to the lesser of $L/300$ or 19 mm where "L" is the glass channel length dimension.
4. Glass, sealants and interior finishes shall not be included to contribute to framing member strength, stiffness or lateral stability. Limit vertical deflection of glazing framing system so as to prevent ponding of water within the glazing rabbet. Splice joints which permit thermal and other movements by slippage within the joint shall be assumed to have zero moment capacity.
5. The deflection of any member in a direction parallel to the plane of the wall, when carrying its full dead load, or load imposed, as per "1" above, shall not exceed an amount which will reduce the glass bite below 75% of the design dimension, and the member shall have a 3mm minimum clearance between itself and the edge of the fixed panel, glass, or fixed part immediately adjacent, nor shall it impair the function of or damage any joint seals.
6. Uniform load structural tests shall be conducted in accordance with ASTM E 330-96. Inward and outward acting test pressures shall be equal to 1.5 times the inward and outward acting design wind pressures. At the conclusion of these tests, there shall be no glass breakage attributable to glazing or framing systems, permanent damage to fasteners or anchors, hardware parts or actuating mechanisms. Main framing members shall have no permanent deformation in excess of 0.2% of their clear span.

1.6 SUBMITTALS

A. Submit

1. Materials list of items proposed to be provided under this Section.
2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
3. Shop drawings in sufficient detail to show fabrication, installation, anchorage, and interface of the work of this section with the work of adjacent trades.
4. Manufacturer's recommended installation procedures which, when approved by the Commissioner, will become the basis for accepting or rejecting actual installation procedures used on the Work.
5. All calculations (each page) and shop drawings (each drawing) shall bear the signature and seal of a Professional Engineer Licensed in the State of New York retained by the Contractor.

B. Samples: Submit samples of all material specified herein, 12" x 12" for panels and 12" long for linear members.

C. Submit samples of finish to Commissioner, demonstrating the variation of color.

D. Informational Submittals: Submit following packaged separately from other submittals:

1. Test Reports: Submit following:
 - a. Certified test reports showing compliance with specified design requirements for review/approval.
2. Certifications specified in Quality Assurance article.
3. Manufacturer's instructions.
4. Manufacturer's field reports.

E. Closeout Submittals: Submit specified warranty.

F. Submit results of sealant testing required in Article 1.6 herein.

1.7 QUALITY ASSURANCE

- A. Single Source Responsibility: Furnish total system from one manufacturer.
- B. Manufacturer's Field Engineer: Conduct field visit to fulfill warranty requirements.
- C. Welder Qualifications: AWS certified within past 12 months for each type of weld required.
- D. Certifications: Certificates verifying AWS qualifications for each welder employed on Project.

- E. All adhesives shall meet or exceed the VOC limits of the South Coast Air Quality Management District Rule #1168.
- F. Sealants used as filler shall meet or exceed Bay Area Air Resources Board Reg. 8, Rule 51 requirements for VOC limits.
- G. Pre-Installation Conference: Conduct in accordance with requirements of Division 1.
- H. Special Experience Requirements
 - 1. Installer: The contractor or subcontractor performing the work of this Section must, within the last three (3) 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.

1.8 MOCK-UPS

- A. Visual Mock-Up: Construct typical, full size mock-up panel. Locate as directed by Commissioner. Accepted mock-up may remain part of completed work.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.
- B. Replacements: In the event of damage, immediately make all repairs and replacements necessary.

1.10 WARRANTY

- A. Guarantee shall state that all work is in accordance with drawings and Specifications, as amended by, and changes thereto authorized by, the Commissioner, free from defects in materials and workmanship, for a period of two (2) years from the date of acceptance of the work by the City of New York. Contractor shall agree to repair or replace defective materials and workmanship to "as new" condition during the Warranty period, including such exploratory work as necessary to determine the cause of defects, at no additional cost to the City of New York.
- B. Guarantee shall further state that glass shall be guaranteed against breakage due to defects in glass materials, fabrication of insulating units, and/or installation for a period of ten (10) years after acceptance of the work by the City of New York.
- C. Guarantee shall further state that there shall be no obstruction of vision by fogging up and collection of dust or dirt in the enclosed space between glass channels, or cracking, peeling, or flaking of coatings and/or films, or other defects as applicable, and in a form acceptable to the City of New York.
- D. Defective materials and workmanship is hereby defined to include, but not be limited to, evidence of:
 - 1. Structural failure of components resulting from forces within specified limits.

2. Delamination of insulating glass units.
 3. Cracking, crazing, flaking of coatings and films on glass.
 4. Discoloration or fading, excessive non-uniformity, pitting, cracking, peeling, or crazing of finish or corrosion.
 5. Glass breakage.
 6. Secondary glass damage and/or damage due to falling components of the work of this Contract.
 7. Adhesive or cohesive failure of sealants and adhesives.
 8. Crazing on surface of non-structural sealant.
 9. Failure to fulfill other specified performance requirements.
 10. Failure of operating parts to function normally.
- E. Contractor shall be responsible for damage to building and furnishings occasioned by defective materials or workmanship or damage as part of repairs to the wall.
- F. The guarantee, the enforcement or lack of enforcement thereof, shall not deprive the City of New York of other actions, rights or remedies available to him. Guarantee shall be in form approved by the City of New York. Guarantees do not cover damage resulting from vandalism or acts of nature exceeding performance criteria.
- G. The terms below used in conjunction with finish Guarantee are defined as follows:
1. **Excessive Fading:** Means a change in appearance which is perceptible and objectionable as determined by the Commissioner when viewed visually in comparison with the original color range standards.
 2. **Excessive Non-Uniformity:** Means non-uniform fading during the period of the guarantee to the extent that adjacent parts have a color difference greater than the original acceptable color range.
 3. **Will Not Pit or Otherwise Corrode:** Means there shall be no pitting or other type of corrosion discernible from a distance of ten (10) feet, resulting from the natural elements in the atmosphere at the project site.

PART 2 PRODUCTS

2.1 MANUFACTURERS AND PRODUCTS

- A. **Acceptable Manufacturers and Products:** Provide Bendheim Wall Systems, or equivalent product of Pilkington Profilit. Lamberts or Cabot or approved equal.

2.2 MATERIALS

- A. Glass: ASTM C 1036 Type 1, Class 1, Quality q3, rolled glass, channel shape, cast. Provide Bendheim P26/60/7, tempered, Rough Cast.
- B. Aluminum: ASTM B 221, alloy 6063-T5 for extrusions; ASTM B 209, alloy 5005-H16 for sheets; or other alloys and temper recommended by manufacturer appropriate for specified finish.
- C. Vinyl: AAMA 303 external grade unplasticized PVC.
- D. Insulation: Timax GL, glass fiber insulation.

2.3 COMPONENTS

- A. Framing:
 - 1. Aluminum: Extruded units to profiles shown or as required to suit conditions indicated.
 - a. Minimum thickness of 0.125 inch for framing members, rails, and sheet, and 0.050 inch for glazing stops and similar components.
 - b. Where large sheet panels are required thickness shall be 0.1875 inch.
 - 2. Vinyl Frame Liner and Glass Support and Spacer: Extruded vinyl spacer engineered for snap-in application in thermally broken aluminum frame to support and space glass units.

2.4 ACCESSORIES

- A. Anchorage Devices: Manufacturer's standard formed or fabricated steel or aluminum assemblies of shapes, plates, bars or tubes.
 - 1. Hot-dip galvanize steel assemblies after fabrication, ASTM A 123, 2.0 ounce minimum coating.
- B. Fasteners: Non-magnetic stainless steel.
 - 1. Provide concealed fasteners wherever possible.
 - 2. Exposed Locations: Phillips flathead screws with finish matching item fastened.
 - 3. Concealed Locations: Manufacturer's standard fasteners.
- C. Expansion Anchor Devices: Lead-shield or toothed-steel, drilled-in, expansion bolt anchors.
- D. Protective Coatings: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 30 mil thickness for each coat; or zinc rich primer.
- E. Perimeter Joint Sealant and Backer Rod: Silicone Glazing.
 - 1. Colors: Custom colors as selected by the Commissioner.

2. Primer: As required by sealant manufacturer for applications shown.
3. Sealant Backing, Bond Breaker Rod and Tape: Closed cell unless otherwise required by sealant manufacturer.
4. Acceptable Products and Manufacturers:
 - a. 795, Dow Corning.
 - b. Silpruf, General Electric.

2.5 FABRICATION

- A. Coordination of Fabrication: Check actual frame or door openings required in construction work by accurate field measurements before fabrication.
 1. Fabricate units to withstand loads which will be applied when system is in place.
- B. General: Provide each unit of framework continuous.
 1. Disassemble only to extent necessary for shipment and installation.
 2. Conceal fasteners wherever possible.
 3. Form gutter and weep system to prevent water infiltration.
 4. Separate dissimilar metals and aluminum in contact with concrete utilizing protective coating or preformed separators which will prevent contact and corrosion.
- C. Aluminum Framing: Provide members of size, shape and profile indicated, designed to provide for glazing from exterior or interior.
 1. Provide manufacturer's standard thermal isolation between exterior and interior aluminum extrusions.
 2. Fabricate frame assemblies with mitered or coped joints.
 3. Maintain accurate relation of planes and angles, with hairline fit of contacting members.
 4. Seal horizontals and direct moisture accumulation to exterior.
 5. Provide spacers and other materials used internally or externally that are corrosive resistant, non-staining, non-bleeding and compatible with adjoining materials.
 6. Fabricate framing for expansion and contraction due to temperature changes without detriment to appearance or performance.
 7. Make provisions in framing for minimum edge clearance, nominal edge cover and nominal pocket width for thickness and type of glazing or infill used in accordance with recommendations of manufacturer and GANA Glazing Manual.
- D. Welding: Comply with recommendations of American Welding Society (AWS).

1. Use recommended electrodes and methods to avoid distortion and discoloration.
2. Grind exposed welds smooth and flush with adjacent surfaces; restore mechanical finish.

2.6 ALUMINUM FINISHES

- A. **General:** Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations relative to applying and designating finishes.
- B. **Appearance of Finished Work:** Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- C. **Class I, Clear Anodic Finish (Exterior):** AA-M12C22A41 (Mechanical Finish: nonspecular as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, clear coating 0.018 mm or thicker) complying with AAMA 611.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions where the translucent linear glass wall assemblies is to be installed and notify the Commissioner of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 COORDINATION

- A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.
- B. Make measurements as required in the field to assure proper fit.

3.3 INSTALLATION

- A. Install the work of this Section in strict accordance with the original design, the approved Shop Drawings, pertinent requirements of governmental agencies having jurisdiction, and the manufacturer's recommended installation procedures as approved by the Commissioner, anchoring all components firmly into position for long life.

END OF SECTION

SECTION 086200

PLASTIC UNIT SKYLIGHTS

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. Work of this Section includes all labor, materials, equipment and services necessary to complete the plastic unit skylights as shown on the drawings and/or specified herein.

1.3 RELATED SECTIONS

- A. Membrane roofing and roof insulation - Section 075300.
- B. Sheet metal work - Section 076200.

1.4 SUBMITTALS

- A. Product data for each type of skylight specified, including details of construction relative to materials, dimensions of individual components, profiles, finishes, and glazing light transmission and thermal characteristics.
- B. Shop drawings showing fabrication and installation of skylights, including plans, elevations, sections, details of components, and attachments to other unit of Work

1.5 QUALITY ASSURANCE

- A. Fire-Test Response Characteristics: Provide plastic sheets identical to those tested for the following fire-test-response characteristics, per ASTM test method indicated below, by UL or other testing and inspecting agencies acceptable to authorities having jurisdiction. Identify plastic sheets with appropriate markings of applicable testing and inspecting organization.
 - 1. Self-Ignition Temperature: 650 deg. F. or greater when tested per ASTM D 1929 on plastic sheets in the thickness intended for use.
 - 2. Smoke density of 75 or less when tested per ASTM D 2843 on plastic sheets in the thickness intended for use.
 - a. Relative-Burning Characteristics: As follows, when tested per ASTM D 635:
 - 1). Acrylic: Burning rate of 2.5 inches per minute or less when tested on plastic glazing indicated below with a nominal thickness of 0.060 inch or the thickness intended for use.

1.6 WARRANTY

- A. Skylight Warranty: Provide written warranty signed by manufacturer, agreeing to repair or replace work that exhibits defects in materials or workmanship and guaranteeing weathertight and leak-free performance. "Defects" is defined as uncontrolled leakage of water and abnormal aging or deterioration.
 - 1. Warranty Period: 5 years from date of Substantial Completion.
- B. Plastic Warranty: Provide written warranty signed by manufacturer agreeing to repair or replace work that has or develops defects in the plastic. "Defects" is defined as abnormal aging or deterioration.
 - 1. Warranty Period for Acrylic: 5 years from date of Substantial Completion against yellowing.
- C. Finish Warranty: Provide written warranty signed by manufacturer agreeing to repair or replace work with finish defects. "Defects" is defined as peeling, chipping, chalking, fading, abnormal aging or deterioration, and failure to perform as required.
 - 1. Warranty Period for Fluoropolymer Finish: 5 years from date of Substantial Completion for color and film integrity.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:
 - 1. Wasco Products, Inc. Model CA
 - 2. Bristolite Skylights
 - 3. Naturalite
 - 4. Or approved equal

2.2 MATERIALS

- A. Aluminum Sheets: ASTM B209 for Alclad alloy 3005-H25 or alloy and temper required to suit forming operations and finish requirements. Mill finish unless indicated otherwise.
- B. Extruded Aluminum: ASTM B 221 alloy 6063-T52 or alloy and temper required to suit structural and finish requirements. Mill finish unless indicated otherwise.
- C. Plastic Sheets: Monolithic, formable, transparent (colorless and tinted) or translucent (white) sheets with good weather and impact resistance.

1. Acrylic: ASTM D 4802, thermoformable, cast or continuous-cast acrylic (methacrylate), Category C-1 or C-2, Type UVA (formulated with ultraviolet absorber), with Finish 1 (smooth or polished), unless otherwise indicated.
- D. Fasteners: Same metal as metals being fastened, or nonmagnetic stainless steel or other non-corrosive metal as recommended by manufacturer. Match finish of exposed fasteners with finish of material being fastened.
- E. Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.
- F. Elastomeric Sealant: Generic type recommended by unit manufacturer that is compatible with joint surfaces. ASTM C 920; Type S; Grade NS; Class 25; and Uses NT, G, A, and (as applicable to joint substrates indicated) O.
- G. Fall protection screen.

2.3 FINISH FOR ALUMINUM

- A. Fluoropolymer, Two-Coat Coating System: Manufacturer's standard two-coat thermocured system, complying with AAMA 605.2, composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene resin by weight; complying with AAMA 605.2.
 1. Color and Gloss: As selected by Architect from manufacturer's standard choices for color and gloss.

2.4 FABRICATOR

- A. General: Factory-assembled unit consisting of plastic glazing, extruded aluminum glazing retainer, gasketing, inner frame designed to mount on separate curb, and self-contained flashing.
- B. Curb: Nominal 1-1/2-inch-thick treated wood curbs with cants or formed flashing flange to receive roof flashing and counterflashing. Wood to meet requirements of Section 062000.
- C. Condensation Control: Fabricate skylight units with integral internal gutters and non-clogging weeps to collect and dispose of condensation.
- D. Thermal Break: Fabricate skylight units with thermal barrier separating interior metal framing from materials exposed to outside temperature.
- E. Glazing: Clear 3/16" acrylic outer dome, translucent 1/8" thick acrylic inner dome.
- F. Glazing Gaskets: Manufacturer's standard glazing system of EPDM or neoprene, closed-cell sponge neoprene, or EPDM, or of partially vulcanized butyl tape or liquid-applied elastomeric sealant.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions where plastic unit skylights are to be installed and notify the Architect of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 INSTALLATION

- A. General: Conform with manufacturer's instructions and recommendations. Coordinate with installation of roof deck and other substrates to receive skylight units. Coordinate with installation of vapor barriers, roof insulation, roofing, and flashing as required to assure that each element of the work performs properly and that combined elements are waterproof and weathertight. Anchor units securely to supporting structural substrates, adequate to withstand lateral and thermal stresses as well as inward and outward loading pressures.
 - 1. Except as otherwise indicated, install roof skylights according to construction details of "NRCA Roofing and Waterproofing Manual".
- B. Isolation: Where metal surfaces of units are to be installed in contact with incompatible metal or corrosive substrates, including wood, apply bituminous coating on concealed metal surfaces, or provide another permanent separation.
- C. Flange Seals: Except as otherwise indicated, set flanges of accessory units in a thick bed of roofing cement to form a seal.
- D. Cap Flashing: Where cap flashing is required as component of the skylight, install to provide an adequate waterproof overlap with roofing or roof flashing (as counterflashing). Seal with thick bead of mastic sealant, except where overlap is indicated to be left open for ventilation.

3.3 CLEANING AND PROTECTION

- A. Clean exposed metal and plastic surfaces according to manufacturer's instructions. Touch up damaged metal coatings.
- B. Clean and polish plastic skylight units, inside and out, not more than 5 days prior to date of substantial completion.

END OF SECTION

SECTION 099000

PAINTING AND FINISHING

PART 1 GENERAL

1.1 GENERAL REQUIREMENTS

- A. Work of this Section, as shown or specified, shall be in accordance with the requirements of the Contract Documents.

1.2 SECTION INCLUDES

- A. Work of this Section includes all labor, materials, equipment, and services necessary to complete the painting and finishing as shown on the drawings and/or specified herein, including, but not limited to, the following:
 - 1. Prime painting unprimed surfaces to be painted under this Section.
 - 2. Painting all items furnished with a prime coat of paint, including touching up of or repairing of abraded, damaged or rusted prime coats applied by others.
 - 3. Painting all ferrous metal (except stainless steel) exposed to view.
 - 4. Painting all galvanized ferrous metals exposed to view.
 - 5. Painting interior concrete block exposed to view.
 - 6. Painting gypsum drywall exposed to view.
 - 7. Painting pipes, pipe coverings, conduit, ducts, insulation, hangers, supports and other mechanical and electrical items and equipment exposed to view.
 - 8. Painting surfaces above, behind or below grilles, gratings, diffusers, louvers, lighting fixtures, and the like, which are exposed to view through these items.
 - 9. Incidental painting and touching up as required to produce proper finish for painted surfaces, including touching up of factory finished items.
 - 10. Painting of any surface not specifically mentioned to be painted herein or on drawings, but for which painting is obviously necessary to complete the job, or work which comes within the intent of these specifications, shall be included as though specified.

1.3 RELATED SECTIONS

- A. Shop priming is required on some, but not all of the items scheduled to be field painted. Refer to other Sections of work for complete description.
- B. Shop Coat on Machinery and Equipment: Refer to the Sections under which various items of manufactured equipment with factory applied shop prime coats are furnished, including, but not

necessarily limited to, the following Sections. All items of equipment furnished with prime coat finish shall be finish painted under this Section.

1. Heating, ventilation and air conditioning – Division 23.
- C. Color Coding of Mechanical Piping and Electrical Conduits – Divisions 26.
 1. This Color Coding consists of an adhesive tape system and is in addition to painting of piping and conduits under this Section, as specified above.

1.4 MATERIALS AND EQUIPMENT NOT TO BE PAINTED

- A. Items of equipment furnished with complete factory finish, except for items specified to be given a finish coat under this Section.
- B. Non-ferrous metals, except for items specified and/or indicated to be painted.
- C. Finished hardware, excepting hardware that is factory primed.
- D. Surfaces not to be painted shall be left completely free of droppings and accidentally applied materials resulting from the work of this Section.

1.5 QUALITY ASSURANCE

- A. Qualification of Painters: Use only qualified journeyman painters for the mixing and application of paint on exposed surfaces.
- B. Paint Coordination: Provide finish coats which are compatible with the prime paints used. Review other Sections of these specifications in which prime paints are to be provided to ensure compatibility of the total coatings system for the various substrates. Upon request from other subcontractors, furnish information on the characteristics of the finish materials proposed to be used, to ensure that compatible prime coats are used. Provide barrier coats over incompatible primers or remove and re-prime as required. Notify the Commissioner in writing of any anticipated problems using the coating systems as specified with substrates primed by others.
- C. All paints must conform to the Volatile Organic Compounds (VOC) standards of prevailing codes and ordinances.

1.6 SUBMITTALS

- A. Materials List
 1. Before any paint materials are delivered to the job site, submit to the Commissioner a complete list of all materials proposed to be furnished and installed under this portion of the work.
 2. This shall in no way be construed as permitting substitution of materials for those specified or accepted for this work by the Commissioner.
- B. Samples
 1. Accompanying the materials list, submit to the Commissioner copies of the full range of colors available in each of the proposed products.

2. Upon direction of the Commissioner, prepare and deliver to the Commissioner two (2) identical sets of Samples of each of the selected colors and glosses painted onto 8-1/2" x 11" x 1/4" thick material; whenever possible, the material for Samples shall be the same material as that on which the coating will be applied in the work.

C. **Manufacturer's Recommendations:** In each case where material proposed is not the material specified or specifically described as an acceptable alternate in this Section of these specifications, submit for the Commissioner's review the current recommended method of application published by the manufacturer of the proposed material.

1.7 PRODUCT HANDLING

A. Deliver all paint materials to the job site in their original unopened containers with all labels intact and legible at time of use.

B. **Protection**

1. Store only the approved materials at the job site, and store only in a suitable and designated area restricted to the storage of paint materials and related equipment.

2. Use all means necessary to ensure the safe storage and use of paint materials and the prompt and safe disposal of waste.

3. Use all means necessary to protect paint materials before, during and after application and to protect the installed work and materials of all other trades.

C. **Replacements:** In the event of damage, immediately make all repairs and replacements necessary.

1.8 EXTRA STOCK

A. Upon completion of this portion of the Work, deliver to the City of New York an extra stock of paint equaling approximately ten (10) percent of each color and gloss used and each coating material used, with all such extra stock tightly sealed in clearly labeled containers.

1.9 JOB CONDITIONS

A. Apply water-based paints only when the temperature of surfaces to be painted and the surrounding air temperatures are between 50 degrees F. and 90 degrees F., unless otherwise permitted by the paint manufacturer's printed instructions.

B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and the surrounding air temperatures are between 45 degrees F. and 95 degrees F. unless otherwise permitted by the paint manufacturer's printed instructions.

C. Do not apply paint in snow, rain, fog or mist; or when the relative humidity exceeds eighty-five (85) percent; or to damp or wet surfaces; unless otherwise permitted by the paint manufacturer's printed instructions.

D. Painting may be continued during inclement weather only if the areas and surfaces to be painted are enclosed and heated within the temperature limits specified by the paint manufacturer during application and drying periods.

PART 2 PRODUCTS

2.1 PAINT MANUFACTURERS

- A. Except as otherwise noted, provide the painting products listed for all required painting made by one of the manufacturers listed in the paint schedule (Section 2.4). These companies are Benjamin Moore, Akzo Nobel Paint (Glidden Professional), and Sherwin Williams (S-W) or approved equal. Comply with number of coats and required minimum mil thicknesses as specified herein.

2.2 MATERIALS

- A. Provide undercoat paint produced by the same manufacturer as the finish coats. Use only thinners approved by the paint manufacturer, and use only to recommended limits.
- B. Colors and Glosses: All colors and glosses shall be as selected by the Commissioner. Certain colors will require paint manufacturer to prepare special factory mixes to match colors selected by the Commissioner. Color schedule (with gloss) shall be furnished by the Commissioner.
- C. Coloring Pigment: Products of or furnished by the manufacturer of the paint or enamel approved for the work.
- D. Linseed Oil: Raw or boiled, as required, of approved manufacture, per ASTM D 234 and D 260, respectively.
- E. Turpentine: Pure distilled gum spirits of turpentine, per ASTM D 13.
- F. Shellac: Pure gum shellac (white or orange) cut in pure denatured alcohol using not less than four (4) lbs. of gum per gallon of alcohol.
- G. Driers, Putty, Spackling Compound, Patching Plaster, etc.: Best quality, of approved manufacture.
- H. Heat Resistant Paint: Where required, use heat resistant paint when applying paint to heating lines and equipment.

2.3 GENERAL STANDARDS

- A. The various surfaces shall be painted or finished as specified below in Article 2.4. However, the Commissioner reserves the right to change the finishes within the range of flat, semi-gloss or gloss, without additional cost to the City of New York.
- B. All paints, varnishes, enamels, lacquers, stains and similar materials must be delivered in the original containers with the seals unbroken and label intact and with the manufacturer's instructions printed thereon.
- C. All painting materials shall bear identifying labels on the containers with the manufacturer's instructions printed thereon.
- D. Paint shall not be badly settled, caked or thickened in the container, shall be readily dispersed with a paddle to a smooth consistency and shall have excellent application properties.

- E. Paint shall arrive on the job color-mixed except for tinting of under-coats and possible thinning.
- F. All thinning and tinting materials shall be as recommended by the manufacturer for the particular material thinned or tinted.
- G. It shall be the responsibility of the Contractor to see that all mixed colors match the color selection made by the Commissioner prior to application of the coating.

2.4 SCHEDULE OF FINISHES

A. High Performance Coating On Exterior Galvanized Ferrous Metals

First Coat: "27 Typoxy" or "N69 Epoxoline II" by Tnemec; "Intergard 345" by International Protective Coatings; "Carboguard 893 SG" or "Carboguard 888" by Carboline; "Devran 203 WB Epoxy Primer" by Akzo; Epoxy Mastic Coating V 160 Series by Corotech/Moore or "Recoatable Epoxy Primer 867-45" by Sherwin Williams.

Second Coat: "V73 Endura Shield" or "1074/1075" by Tnemec; "Interthane 870UHS" or "990 UHS" by International Protective Coatings; "Carbothane 133 LH" by Carboline; "Devthane 379UH Aliphatic Vizethne" by Akzo; Acrylic Aliphatic Urethane V 500 (Gloss) or V 510 (Semi-Gloss) by Corotech/Moore or "Hi-Solids Urethane B65-300/350" by Sherwin Williams.

B. High Performance Coating On Exterior Non-Galvanized Ferrous Metals

Prime Coat: "Tneme-Zinc 90/97" by Tnemec; "Interzinc 52" or "315" by International Protective Coatings; "Carbozinc 859, Class B" by Carboline; "Cathacoat 302V Reinforced Inorganic Zinc Primer" by Akzo; Organic Zinc Rich Primer V 170 by Corotech/Moore or "Zinc Clad II Plus Inorganic Zinc Rich Coating B69V212" by Sherwin Williams.

Second Coat: "27 Typoxy" or "N69 Epoxoline II" by Tnemec; "Intergard 345" by International Protective Coatings; "Carboguard 893 SG" or "Carboguard 888" by Carboline; "Bar-Rust 231V Multi Purpose Epoxy Mastic" by Akzo; Epoxy Mastic Coating V 160 Series by Corotech/Moore or "Macropoxy 646 I.C. Epoxy B58-600" by Sherwin Williams.

Third Coat: "V73 Endura Shield" or "1074/1075" by Tnemec; "Interthane 870UHS" or "990 UHS" by International Protective Coatings; "Carbothane 133 LH" by Carboline; "Devthane 379 UH Aliphatic Urethane" by Akzo; Acrylic Aliphatic Urethane V 500 (Gloss) or V 510 (Semi-Gloss) by Corotech/Moore or "Hi-Solids Polyurethane B65-300/350" by Sherwin Williams.

C. Interior Ferrous Metal

Satin Finish/Latex

- Primer: 1 coat Moore Alkyd Metal Primer (Z06)
1 coat Akzo Devflex 4020 PF DTM Prime/Flat Finish or touch-up shop primer
1 coat Sherwin-Williams Pro Industrial Pro-Cryl Universal Primer B66-310
- First Coat: 1 coat Moore Super Spec-HP DTM Acrylic Low Luster P25
1 coat Akzo: Glidden Professional Diamond 350 Acrylic Eggshell

GP1403
1 coat S-W Pro-Classic Waterborne Acrylic Satin, B20
Second Coat: 1 coat Moore Super Spec-HP DTM Acrylic Low Luster P25
1 coat Akzo: Glidden Professional Diamond 350 Acrylic Eggshell
GP1403
1 coat S-W Pro-Classic Waterborne Acrylic Satin, B20
a. Total DFT not less than: 3.9 mils

Semi-Gloss Finish/Latex

Primer: 1 coat Moore Super Spec-HP Acrylic Metal Primer (P04)
1 coat Akzo Devflex 4020 PF DTM Primer/Flat Finish or touch-up
shop primer.
1 coat Sherwin-Williams, Pro Industrial Pro-Cryl Universal Primer
B66-310
First Coat: 1 coat Moore Super Spec HP DTM Acrylic Semi-Gloss (P29)
1 coat Akzo: Glidden Professional Diamond 350 Acrylic S/G 6P1407
1 coat S-W Pro-Classic Waterborne Acrylic Semi-Gloss, B31
Second Coat: 1 coat Moore Super Spec HP DTM Acrylic Semi-Gloss (P29)
1 coat Akzo: Glidden Professional Diamond 350 Acrylic S/G 6P1407
1 coat S-W Pro-Classic Waterborne Acrylic Semi-Gloss, B31
a. Total DFT not less than: 4.0 mils

D. Interior Concrete Block

Flat Finish/Vinyl Acrylic Latex over Filler

Block Filler: 1 coat Moore Super Spec Masonry Int./Ext. High Build Block Filler
(206)
1 coat Akzo Glidden Professional Concrete Coatings Block Filler GP
3010-1200
1 coat S-W Preprite Block Filler, B25W25
First Coat: 1 coat Moore Ultra Spec 500 Interior Flat Latex (N536)
1 coat Akzo Glidden Professional Diamond 350 Flat GP 1201
1 coat S-W Promar 200 "O" VOC Interior Latex Flat, B30-2600
Second Coat: 1 coat Moore Ultra Spec 500 Interior Flat Latex (N536)
1 coat Akzo Glidden Professional Diamond 350 Flat GP 1201
1 coat S-W Promar 200 "O" VOC Interior Latex Flat, B30-2600
a. Total DFT not less than: 10.7 mils

Eggshell Finish/Vinyl Acrylic Latex Over Filler

Block Filler: 1 coat Moore Super Spec Masonry Int./Ext. High Build Block Filler
(206)
1 coat Akzo Glidden Professional Concrete Coatings Block Filler GP
3010-1200
1 coat S-W Preprite Block Filler, B25W25
First Coat: 1 coat Moore Ultra Spec 500 Interior Latex Eggshell (N538)
1 coat Akzo Glidden Professional Diamond 350 Acrylic Eggshell
6P1403
1 coat S-W Promar 200 "O" VOC Interior Latex Eggshell, B20-2600
Second Coat: 1 coat Moore Ultra Spec 500 Interior Latex Eggshell (N538)
1 coat Akzo Glidden Professional Diamond 350 Acrylic Eggshell

6P1403

- 1 coat S-W Promar 200 "O" VOC Interior Latex Eggshell, B30-2600
a. Total DFT not less than: 10.9 mils

Semi-Gloss Finish/Vinyl Acrylic Latex over Filler

Block Filler: 1 coat Moore Super Spec Masonry Int./Ext. High Build Block Filler (206)

1 coat Akzo Glidden Professional Concrete Coatings Block Filler GP 3010-1200

1 coat S-W Preprite Block Filler, B25W25

First Coat: 1 coat Moore Ultra Spec 500 Interior Latex Gloss (N540)
1 coat Akzo Glidden Professional Diamond 350 Acrylic S/G GP 1407

1 coat S-W Promar 200 "O" VOC Interior Latex S. Gloss, B31-2600

Second Coat: 1 coat Moore Ultra Spec 500 Interior Latex Gloss (N540)
1 coat Akzo Glidden Professional Diamond 350 Acrylic S/G GP 1407

1 coat S-W Promar 200 "O" VOC Interior Latex S. Gloss, B31-2600

a. Total DFT not less than: 10.7 mils

E. Interior Drywall

Flat Finish/Vinyl Acrylic Latex

Primer: 1 coat Moore Ultra Spec 500 Interior Latex Primer (N534)

1 coat Akzo Glidden Professional Gripper GP 3210

1 coat S-W Promar 200 Interior Latex Primer

First Coat: 1 coat Moore Ultra Spec 500 Latex Flat (N536)

1 coat Akzo Glidden Professional Diamond 350 Flat GP 1201

1 coat S-W Promar 200 "O" VOC Interior Latex Flat, B30-2600

Second Coat: 1 coat Moore Ultra Spec 500 Latex Flat (N536)

1 coat Akzo Glidden Professional Diamond 350 Flat GP 1201

1 coat S-W Promar 200 "O" VOC Interior Latex Flat, B30-2600

a. Total DFT not less than: 3.6 mils

Eggshell Finish/Vinyl Acrylic Latex

Primer: 1 coat Moore Ultra Spec 500 Interior Latex Primer (N534)

1 coat Akzo Glidden Professional Gripper GP 3210

1 coat S-W Promar 200 Interior Latex Primer,

First Coat: 1 coat Moore Ultra Spec 500 Interior Latex Eggshell (N538)

1 coat Akzo Glidden Professional Diamond 350 Acrylic Eggshell GP 1403

1 coat S-W Promar 200 "O" VOC Interior Latex Egg-Shell, B20-2600

Second Coat: 1 coat Moore Ultra Spec 500 Interior Latex Eggshell (N538)

1 coat Akzo Glidden Professional Diamond 350 Acrylic Eggshell GP 1403

1 coat S-W Promar 200 "O" VOC Interior Latex Egg-Shell B20-2600

a. Total DFT not less than: 3.8 mils

2.5 EXISTING SURFACES TO BE PAINTED

- A. Existing surfaces shall be painted in accordance with schedule given in Article 2.4 herein except that first or prime coat may be eliminated where existing paint is sound. Where existing paint must be removed down to base material, provide first or prime coat as specified.

2.6 PIPING AND MECHANICAL EQUIPMENT EXPOSED TO VIEW

- A. Paint all exposed piping, conduits, ductwork and mechanical and electrical equipment. Use heat resisting paint when applied to heating lines and equipment. The Contractor is cautioned not to paint or otherwise disturb moving parts in the mechanical systems. Mask or otherwise protect all parts as required to prevent damage.
- B. Exposed Uncovered Ductwork, Piping, Hangers and Equipment: Latex Enamel Undercoater and one (1) coat Acrylic Latex Flat.
- C. Exposed Covered Piping, Duct Work and Equipment: Primer/Sealer and one (1) coat Acrylic Latex Flat.
- D. Panel Boards, Grilles and Exposed Surfaces of Electrical Equipment: Latex Enamel Undercoater and two (2) coats Latex Semi-Gloss.
- E. Equipment or Apparatus with Factory-Applied Paint: Refinish any damaged surfaces to match original finish. Do not paint over name plates and labels.
- F. All surfaces of insulation and all other work to be painted shall be wiped or washed clean before any painting is started.
- G. All conduit, boxes, distribution boxes, light and power panels, hangers, clamps, etc., are included where painting is required.
- H. All items of Mechanical and Electrical trades which are furnished painted under their respective Contracts shall be carefully coordinated with the work of this Section so as to leave no doubt as to what items are scheduled to be painted under this Section.

PART 3 EXECUTION

3.1 INSPECTION

- A. Examine the areas and conditions where painting and finishing are to be applied and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions are corrected to permit proper installation of the work.

3.2 GENERAL WORKMANSHIP REQUIREMENTS

- A. Only skilled mechanics shall be employed. Application may be by brush or roller. Spray application only upon acceptance from the Commissioner in writing.
- B. The Contractor shall furnish the Commissioner a schedule showing when he expects to have completed the respective coats of paint for the various areas and surfaces. This schedule shall be kept current as the job progresses.

- C. The Contractor shall protect his work at all times, and shall protect all adjacent work and materials by suitable covering or other method during progress of his work. Upon completion of the work, he shall remove all paint and varnish spots from floors, glass and other surfaces. He shall remove from the premises all rubbish and accumulated materials of whatever nature not caused by others and shall leave his part of the work in clean, orderly and acceptable condition.
- D. Remove and protect hardware, accessories, device plates, lighting fixtures, and factory finished work, and similar items, or provide ample in place protection. Upon completion of each space, carefully replace all removed items by workmen skilled in the trades involved.
- E. Remove electrical panel box covers and doors before painting walls. Paint separately and re-install after all paint is dry.
- F. All materials shall be applied under adequate illumination, evenly spread and flowed on smoothly to avoid runs, sags, holidays, brush marks, air bubbles and excessive roller stipple.
- G. Coverage and hide shall be complete. When color, stain, dirt or undercoats show through final coat of paint, the surface shall be covered by additional coats until the paint film is of uniform finish, color, appearance and coverage, at no additional cost to the City of New York.
- H. All coats shall be dry to manufacturer's recommendations before applying succeeding coats.
- I. Do not apply paint behind frameless mirrors that use mastic for adhering to wall surface.

3.3 PREPARATION OF SURFACES

- A. Existing Surfaces: Clean existing surfaces requiring paint or finishing, remove all loose and flaking paint or finish and sand surface smooth as required to receive new paint or finish. No "telegraphing" of lines, ridges, flakes, etc., through new surfacing is permitted. Where this occurs, Contractor shall be required to sand smooth and re-finish until surface meets with Commissioner's approval.
- B. General
 1. The Contractor shall be held wholly responsible for the finished appearance and satisfactory completion of painting work. Properly prepare all surfaces to receive paint, which includes cleaning, sanding, and touching-up of all prime coats applied under other Sections of the work. Broom clean all spaces before painting is started. All surfaces to be painted or finished shall be perfectly dry, clean and smooth.
 2. Perform all preparation and cleaning procedures in strict accordance with the paint manufacturer's instructions and as herein specified, for each particular substrate condition.
 3. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease with clean cloths and cleaning solvents prior to mechanical cleaning. Program the cleaning and painting so that dust and other contaminants from the cleaning process will not fall in wet, newly painted surfaces.

C. Metal Surfaces

1. Weld Fluxes: Remove weld fluxes, splatters, and alkali contaminants from metal surfaces in an approved manner and leave surface ready to receive painting.
 2. Bare Metal: Thoroughly clean off all foreign matter such as grease, rust, scale and dirt before priming coat is applied. Clean surfaces, where solder flux has been used, with benzene. Clean surfaces by flushing with mineral spirits. For aluminum surfaces, wipe down with an oil free solvent prior to application of any pre-treatment.
 - a. Bare metal to receive high performance coating specified herein must be blast cleaned SSPC SP-6 prior to application if field applied primer; coordinate with steel trades furnishing ferrous metals to receive this coating to insure that this cleaning method is followed.
 3. Shop Primed Metal: Clean off foreign matter as specified for "Bare Metal." Prime bare, rusted, abraded and marred surfaces with approved primer after proper cleaning of surfaces. Sandpaper all rough surfaces smooth.
 4. Galvanized Metal: Prepare surface as per the requirements of ASTM D 6386.
 5. Metal Filler: Fill dents, cracks, hollow places, open joints and other irregularities in metal work to be painted with an approved metal filler suitable for the purpose and meeting the requirements of the related Section of work; after setting, sand to a smooth, hard finish, flush with adjoining surface.
- D. Gypsum Drywall Surfaces: Scrape off all projections and splatters, spackles all holes or depressions, including taped and spackled joints, sand smooth. Conform to standards established in Section 092900, "Gypsum Drywall."
- E. Block Masonry Surfaces: Thoroughly clean off all grit, grease, dirt mortar drippings or splatters, and other foreign matter. Remove nibs or projections from masonry surfaces. Fill cracks, holes or voids, not filled under the "Masonry" Section, with Portland cement grout, and bag surface so that it has approximately the same texture as the adjacent masonry surface.
- F. Testing for Moisture Content: Contractor shall test all plaster, masonry, and drywall surfaces for moisture content using a reliable electronic moisture meter. Contractor shall also test latex type fillers for moisture content before application of top coats of paint. Do not apply any paint or sealer to any surface or to latex type filler where the moisture content exceeds seven (7) percent as measured by the electronic moisture meter.
- G. Touch-Up: Prime paint all patched portions in addition to all other specified coats.

3.4 MATERIALS PREPARATION

- A. Mix and prepare painting materials in strict accordance with the manufacturer's directions.
- B. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing, and application of paint in a clean condition, free of foreign materials and residue.

- C. Stir all materials before application to produce a mixture of uniform density, and as required during the application of the materials. Do not stir any film which may form on the surface into the material. Remove the film and, if necessary, strain the material before using.
- D. Tint each undercoat a lighter shade to facilitate identification of each coat where multiple coats of the same material are to be applied. Tint undercoats to match the color of the finish coat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

3.5 APPLICATION

A. General

1. Apply paint by brush or roller in accordance with the manufacturer's directions. Use brushes best suited for the type of material being applied. Use rollers of carpet, velvet back, or high pile sheep's wool as recommended by the paint manufacturer for material and texture required.
2. The number of coats and paint film thickness required is the same regardless of the application method. Do not apply succeeding coats until the previous coat has completely dried. Sand between each enamel or varnish coat application with fine sandpaper, or rub surfaces with pumice stone where required to produce an even, smooth surface in accordance with the coating manufacturer's directions.
3. Apply additional coats when undercoats, stains, or other conditions show through the final coat of paint, until the paint film is of uniform finish, color and appearance. Give special attention to insure that all surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a film thickness equivalent to that of flat surfaces.
4. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 - a. "Exposed surfaces" is defined as those areas visible when permanent or built-in fixtures, convector covers, covers for finned tube radiation, grilles, etc., are in place in areas scheduled to be painted.
5. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint, before final installation of equipment.
6. Paint the back sides of access panels, removable or hinged covers to match the exposed surfaces.
7. Finish doors on tops, bottoms, and side edges the same as the faces, unless otherwise indicated.
8. Enamel finish applied to wood or metal shall be sanded with fine sandpaper and then cleaned between coats to produce an even surface.

B. Scheduling Painting

1. Apply the first coat material to surfaces that have been cleaned, pre-treated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
 2. Allow sufficient time between successive coatings to permit proper drying. Do not re-coat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- C. Prime Coats: Re-coat primed and sealed walls and ceilings where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.
- D. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage.
- E. "Touching-Up" of Factory Finishes: Unless otherwise specified or shown, materials with a factory finish shall not be painted at the project site. To "touch-up," the Contractor shall use the factory finished material manufacturer's recommended paint materials to repair abraded, chipped, or otherwise defective surfaces.

3.6 PROTECTION

- A. Protect work of other trades, whether to be painted or not, against damage by the painting and finishing work. Leave all such work undamaged. Correct any damages by cleaning, repairing or replacing, and repainting, as acceptable to the Commissioner.
- B. Provide "Wet Paint" signs as required to protect newly painted finishes. Remove temporary protective wrappings provided by others for protection of their work after completion of painting operations.

3.7 CLEAN UP

- A. During the progress of the work, remove from the site all discarded paint materials, rubbish, cans and rags at the end of each work day.
- B. Upon completion of painting work, clean window glass and other paint spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- C. At the completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

END OF SECTION

SECTION 230513

COMMON MOTOR REQUIREMENTS FOR HVAC EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

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. Rotor: Random-wound, squirrel cage.
- E. Bearings: Regreasable, shielded, antifriction ball bearings suitable for radial and thrust loading.
- F. Temperature Rise: Match insulation rating.
- G. Insulation: Class F.
- H. Code Letter Designation:
 - 1. Motors Smaller than 15 HP: Manufacturer's standard starting characteristic.
- I. 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.

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

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SECTION 230593

TESTING, ADJUSTING, AND BALANCING FOR HVAC

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

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 INFORMATIONAL SUBMITTALS

- A. Qualification Data: Within 15 days of Contractor's Notice to Proceed, submit documentation that the TAB contractor and this Project's TAB team members meet the qualifications specified in "Quality Assurance" Article.
- 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 AABC, NEBB, or TABB.
 1. TAB Field Supervisor: Employee of the TAB contractor and certified by AABC, NEBB, or TABB.
 2. TAB Technician: Employee of the TAB contractor and who is certified by AABC, NEBB, or TABB as a TAB technician.
- B. TAB Conference: Meet with Construction Manager 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 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. Partial Occupancy: Commissioner may occupy completed areas of building before Substantial Completion. Cooperate with Commissioner during TAB operations to minimize conflicts with Commissioner's 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 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. Verify that penetrations in walls and ceiling slabs are sealed and fire-stopped as required.
- F. Examine equipment performance data including fan 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 verify that bearings are greased, belts are aligned and tight, and equipment with functioning controls is ready for operation.
- J. Examine operating safety interlocks and controls on HVAC equipment.
- K. 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.

3.2 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. Automatic temperature-control systems are operational.
 - 3. Equipment access doors are securely closed.
 - 4. Windows and doors can be closed so indicated conditions for system operations can be met.

3.3 GENERAL PROCEDURES FOR TESTING AND BALANCING

- A. Perform testing and balancing procedures on each system according to the procedures contained in SMACNA's "HVAC Systems - Testing, Adjusting, and Balancing" and in this Section.
 - 1. Comply with requirements in ASHRAE 62.1, Section 7.2.2 - "Air Balancing."
- B. Mark equipment and balancing devices, including damper-control positions, indicators, fan-speed-control levers, and similar controls and devices, with paint or other suitable, permanent identification material to show final settings.
- C. Take and report testing and balancing measurements in inch-pound (IP) units.

3.4 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" exhaust air system.
- C. 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.
- D. Locate start-stop and disconnect switches, electrical interlocks, and motor starters.

- E. Verify that motor starters are equipped with properly sized thermal protection.
- F. Check dampers for proper position to achieve desired airflow path.
- G. Check for airflow blockages.

3.5 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 being exhausted for each fan and makeup airflow entered through louvers.

3.6 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.

3.7 TOLERANCES

- A. Set HVAC system's air flow rates within the following tolerances:
 - 1. Exhaust Fans and Equipment with Fans: Plus or minus 10 percent.

3.8 REPORTING

- 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. Commissioner'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 performance forms including the following:
 - a. Fan drive settings including settings and percentage of maximum pitch diameter.
 - b. Other system operating conditions that affect performance.
- D. System Diagrams: Include schematic layouts of air distribution systems. Present each system with single-line diagram and include the following:

1. Quantities of outdoor, supply, return, and exhaust airflows.

E. Fan Test Reports: 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. Fan rpm.

F. Instrument Calibration Reports:

1. Report Data:

- a. Instrument type and make.
- b. Serial number.
- c. Application.
- d. Dates of use.
- e. Dates of calibration.

3.9 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 room temperature at each thermostat/temperature sensor. Compare the reading to the set point.
- b. Verify that balancing devices are marked with final balance position.
- c. 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 Commissioner.
2. The TAB contractor's test and balance engineer shall conduct the inspection in the presence of Commissioner.

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.

3.10 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

SECTION 233300

AIR DUCT ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Control Dampers (Motorized Dampers)

1.3 ACTION SUBMITTALS

- A. 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. Control-damper installations.
- b. 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.

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: G60 (Z180).
 - 2. Exposed-Surface Finish: Mill phosphatized.
- B. Extruded Aluminum: Comply with ASTM B 221 (ASTM B 221M), Alloy 6063, Temper T6.
- 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 CONTROL DAMPERS (MOTORIZED DAMPERS)

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. American Warming and Ventilating; a division of Mestek, Inc.
 - 2. Arrow United Industries; a division of Mestek, Inc.
 - 3. Cesco Products; a division of Mestek, Inc.
 - 4. Greenheck Fan Corporation.
 - 5. Lloyd Industries, Inc.
 - 6. McGill AirFlow LLC.
 - 7. Metal Form Manufacturing, Inc.
 - 8. Nailor Industries Inc.
 - 9. NCA Manufacturing, Inc.
 - 10. Pottorff.
 - 11. Ruskin Company.
 - 12. Vent Products Company, Inc.
- B. Low-leakage rating, with linkage outside airstream, and bearing AMCA's Certified Ratings Seal for both air performance and air leakage.

C. Frames:

1. Hat shaped.
2. 0.094-inch- (2.4-mm-) thick, galvanized sheet steel.
3. Mitered and welded corners.

D. Blades:

1. Multiple blade with maximum blade width of 6 inches (152 mm).
2. Parallel-blade design.
3. Aluminum.
4. 0.064 inch (1.62 mm) thick single skin.
5. Blade Edging: Closed-cell neoprene.
6. Blade Edging: Inflatable seal blade edging, or replaceable rubber seals.

E. 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).

F. Bearings:

1. Oil-impregnated bronze.
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.

G. Motor:

1. Motor to be single phase, 120 volt type , spring return similar to Bolimo.

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 motorized dampers with end switches at inlet of exhaust fans or exhaust ducts as close as possible to exhaust fan unless otherwise indicated.
- D. Install control dampers on louvers as indicated on drawings.

3.2 FIELD QUALITY CONTROL

A. Tests and Inspections:

1. Operate dampers to verify full range of movement.

END OF SECTION

SECTION 233423

HVAC POWER VENTILATORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Centrifugal roof ventilators.

1.3 PERFORMANCE REQUIREMENTS

- A. Project Altitude: Base fan-performance ratings on sea level.
- B. Operating Limits: Classify according to AMCA 99.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. Also include the following:
 - 1. Certified fan performance curves with system operating conditions indicated.
 - 2. Certified fan sound-power ratings.
 - 3. Motor ratings and electrical characteristics, plus motor and electrical accessories.
 - 4. Material thickness and finishes, including color charts.
 - 5. Dampers, including housings, linkages, and operators.
 - 6. Roof curbs.
 - 7. Fan speed controllers.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.
 - 1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 - 2. Wiring Diagrams: For power, signal, and control wiring.

1.5 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plans and other details, drawn to scale, on which the following items are shown and coordinated with each other, using input from Installers of the items involved:
 - 1. Roof framing and support members relative to duct penetrations.
- B. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For power ventilators to include in emergency, operation, and maintenance manuals.

1.7 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. Belts: One set for each belt-driven unit.

1.8 QUALITY ASSURANCE

- 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. AMCA Compliance: Fans shall have AMCA-Certified performance ratings and shall bear the AMCA-Certified Ratings Seal.
- C. UL Standards: Power ventilators shall comply with UL 705.

1.9 COORDINATION

- A. Coordinate size and location of structural-steel support members.
- B. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.

PART 2 - PRODUCTS

2.1 CENTRIFUGAL ROOF VENTILATORS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - 1. Greenheck Fan Corporation.
 - 2. Acme Engineering & Manufacturing Corporation.
 - 3. Aerovent; a division of Twin City Fan Companies, Ltd.

4. American Coolair Corporation.
 5. Ammerman; Millennium Equipment.
 6. Breidert Air Products.
 7. Broan-NuTone LLC.
 8. Broan-NuTone LLC; NuTone Inc.
 9. Carnes Company.
 10. Central Blower Company.
 11. Delhi Industries Inc.
 12. Hartzell Fan Incorporated.
 13. JencoFan.
 14. Loren Cook Company.
 15. PennBarry.
 16. Quietaire Inc.
- B. Housing: Removable, spun-aluminum, dome top and outlet baffle; square, one-piece, aluminum base with venturi inlet cone.
1. Hinged Subbase: Galvanized-steel hinged arrangement permitting service and maintenance.
- C. Fan Wheels: Aluminum hub and wheel with backward-inclined blades.
- D. Belt Drive/Direct Drive:
1. Resiliently mounted to housing.
 2. Fan Shaft: Turned, ground, and polished steel; keyed to wheel hub.
 3. Shaft Bearings: Permanently lubricated, permanently sealed, self-aligning ball bearings.
 4. Pulleys: Cast-iron, adjustable-pitch motor pulley (for belt drive).
 5. Fan and motor isolated from exhaust airstream.
- E. Accessories:

1. Manual Variable-Speed Controller: Solid-state control to reduce speed from 100 to less than 50 percent for air-balancing purposes.
 2. Disconnect Switch: Nonfusible type, with thermal-overload protection mounted inside fan housing, factory wired through an internal aluminum conduit.
 3. Bird Screens: Removable, 1/2-inch (13-mm) mesh, aluminum or brass wire.
 4. Inlet Dampers: Motorized, parallel-blade dampers mounted in curb base including gasketed damper edges. Damper to be factory interlocked to close when fan is de-energized.
- F. Roof Curbs: Galvanized steel; mitered and welded corners; 1-1/2-inch- (40-mm-) thick, rigid, fiberglass insulation adhered to inside walls; and 1-1/2-inch (40-mm) wood nailer. Size as required to suit roof opening and fan base.
1. Configuration: Self-flashing without a cant strip, with mounting flange.
 2. Overall Height: 16 inches (400 mm).
 3. Pitch Mounting: Manufacture curb for roof slope (if applicable).
 4. Metal Liner: Galvanized steel.
- G. Capacities and Characteristics:
1. As listed on drawing schedule.
- 2.2 MOTORS
- A. 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.
- B. Enclosure Type: Drip Proof.
- 2.3 SOURCE QUALITY CONTROL
- A. Certify sound-power level ratings according to AMCA 301, "Methods for Calculating Fan Sound Ratings from Laboratory Test Data." Factory test fans according to AMCA 300, "Reverberant Room Method for Sound Testing of Fans." Label fans with the AMCA-Certified Ratings Seal.
- B. Certify fan performance ratings, including flow rate, pressure, power, air density, speed of rotation, and efficiency by factory tests according to AMCA 210, "Laboratory Methods of Testing Fans for Aerodynamic Performance Rating." Label fans with the AMCA-Certified Ratings Seal.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install power ventilators level and plumb.
- B. Secure roof-mounted fans to roof curbs with cadmium-plated hardware.
- C. Install units with clearances for service and maintenance.
- D. Label units.

3.2 CONNECTIONS

- A. Ground equipment according to Section 260526 "Grounding and Bonding for Electrical Systems."
- B. Connect wiring according to Section 260519 "Low-Voltage Electrical Power Conductors and Cables."

3.3 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- B. Tests and Inspections:
 - 1. Verify that shipping, blocking, and bracing are removed.
 - 2. Verify that unit is secure on mountings and supporting devices and that connections to ducts and electrical components are complete. Verify that proper thermal-overload protection is installed in motors, starters, and disconnect switches.
 - 3. Verify that cleaning and adjusting are complete.
 - 4. Disconnect fan drive from motor, verify proper motor rotation direction, and verify fan wheel free rotation and smooth bearing operation. Reconnect fan drive system, align and adjust belts, and install belt guards.
 - 5. Adjust belt tension.
 - 6. Adjust damper linkages for proper damper operation.
 - 7. Verify lubrication for bearings and other moving parts.
 - 8. Disable automatic temperature-control operators, energize motor and adjust fan to indicated rpm, and measure and record motor voltage and amperage.

9. Shut unit down and reconnect automatic temperature-control operators.
 10. Remove and replace malfunctioning units and retest as specified above.
- C. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
 - D. Prepare test and inspection reports.
- 3.4 ADJUSTING
- A. Adjust damper linkages for proper damper operation.
 - B. Adjust belt tension.
 - C. Comply with requirements in Section 230593 "Testing, Adjusting, and Balancing for HVAC" for testing, adjusting, and balancing procedures.
 - D. Replace fan and motor pulleys as required to achieve design airflow.
 - E. Lubricate bearings.

END OF SECTION

SECTION 238239

UNIT HEATERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

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."
 - b. 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."
 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 authorities having jurisdiction, 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. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Modine.
 - 2. Airtherm; a Mestek Company.
 - 3. Engineered Air Ltd.
 - 4. McQuay International.
 - 5. Rosemex Products.
 - 6. Ruffneck Heaters; a division of Lexa Corporation.
 - 7. Trane.
- C. Description: An assembly including casing, coil, fan, and motor in horizontal discharge configuration with adjustable discharge louvers.
- D. Comply with UL 2021.
- E. Comply with UL 823.
- F. Cabinet: Removable panels for maintenance access to controls.
- G. Cabinet Finish: Manufacturer's standard baked enamel applied to factory-assembled and -tested propeller unit heater before shipping.
- H. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1.

- I. Discharge Louver: Adjustable fin diffuser for horizontal units and conical diffuser for vertical units.
- J. 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.
- K. Fan: Propeller type with aluminum wheel directly mounted on motor shaft in the fan venturi.
- L. Fan Motors: Comply with requirements in Section 230513 "Common Motor Requirements for HVAC Equipment."
 - 1. Motor Type: Permanently lubricated, multispeed.
- M. Control Devices:
 - 1. Unit-mounted fan-speed switch.
 - 2. Unit-mounted thermostat.
- N. 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. Joint-sealant materials and applications are specified in Section 079200 "Joint Sealants."
- 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 train Commissioner's maintenance personnel to adjust, operate, and maintain cabinet unit heaters.

END OF SECTION

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SECTION 260519

LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

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.

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 authorities having jurisdiction.
 - 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 authorities having jurisdiction, and marked for intended use.

- C. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Alcan Products Corporation; Alcan Cable Division.
 - 2. American Insulated Wire Corp.; a Leviton Company.
 - 3. General Cable Corporation.
- C. Copper Conductors: Comply with NEMA WC 70.
- D. Conductor Insulation: Comply with NEMA WC 70 for Types THHN-THWN.

2.2 CONNECTORS AND SPLICES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Manufacturers: 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.
- C. 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. 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. Service Entrance: Type XHHW, single conductors in raceway.
- B. Feeders Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.
- C. Branch Circuits Concealed in Ceilings, Walls, and Partitions: Type THHN-THWN, single conductors in raceway.
- D. Branch Circuits Concealed in Concrete, below Slabs-on-Grade, and Underground: Type THHN-THWN, single conductors in raceway.
- E. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, strain relief device at terminations to suit application.
- F. Class 1 Control Circuits: Type THHN-THWN, in raceway.
- G. Class 2 Control Circuits: Type THHN-THWN, in raceway.

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."

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 FIRESTOPPING

- A. Apply firestopping to electrical penetrations of fire-rated floor and wall assemblies to restore original fire-resistance rating of assembly according to Section 078413 "Penetration Firestopping."

3.6 FIELD QUALITY CONTROL

- A. Testing Agency: Contractor will 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 service entrance and feeder conductors, and conductors feeding the following 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

SECTION 260526

GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes: Grounding systems and equipment.
- B. Section includes grounding systems and equipment, plus the following special applications:
 - 1. Underground distribution grounding.

1.3 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 authorities having jurisdiction.
- B. Bare Copper Conductors:
 - 1. Solid Conductors: ASTM B 3.
 - 2. Stranded Conductors: ASTM B 8.
 - 3. Tinned Conductors: ASTM B 33.
 - 4. Bonding Cable: 28 kcmil, 14 strands of No. 17 AWG conductor, 1/4 inch (6 mm) in diameter.

5. Bonding Conductor: No. 4 or No. 6 AWG, stranded conductor.
6. 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.
7. Tinned Bonding Jumper: Tinned-copper tape, braided conductors terminated with copper ferrules; 1-5/8 inches (41 mm) wide and 1/16 inch (1.6 mm) thick.

2.2 CONNECTORS

- A. Listed and labeled by an NRTL acceptable to authorities having jurisdiction 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.

PART 3 - EXECUTION

3.1 APPLICATIONS

- A. Conductors: Install solid conductor for No. 8 AWG and smaller, and stranded conductors for No. 6 AWG and larger unless otherwise indicated.
- B. Underground Grounding Conductors: Install bare copper conductor, No. 2/0 AWG minimum.
 1. Bury at least 24 inches (600 mm) below grade.

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.
- 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.

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. **Bonding Interior Metal Ducts:** Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install bonding jumper to bond across flexible duct connections to achieve continuity.

3.4 FIELD QUALITY CONTROL

- A. **Testing Agency:** Contractor will 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. **Perform tests and inspections.**
 - 1. **Manufacturer's Field Service:** Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- D. **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. 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.
- E. **Grounding system will be considered defective if it does not pass tests and inspections.**
- F. **Prepare test and inspection reports.**

- G. 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.
- H. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Commissioner promptly and include recommendations to reduce ground resistance.

END OF SECTION

SECTION 260529

HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Hangers and supports for electrical equipment and systems.

1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. IMC: Intermediate metal conduit.
- C. RMC: Rigid metal conduit.

1.4 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design supports for multiple raceways, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- C. Design 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: 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 installation of roof curbs, equipment supports, and roof penetrations. These items are specified in Section 077200 "Roof Accessories."

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. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 2. Manufacturers: 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. Thomas & Betts Corporation.
 3. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
 4. Nonmetallic Coatings: Manufacturer's standard PVC, polyurethane, or polyester coating applied according to MFMA-4.
 5. Painted Coatings: Manufacturer's standard painted coating applied according to MFMA-4.
 6. 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. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - b. Manufacturers: 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.

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.
- B. Materials: Comply with requirements in Section 055000 "Metal Fabrications" for steel shapes and plates.

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 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 two-bolt conduit clamps.
- 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, IMC, and RMC 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.
 - 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 by means that meet seismic-restraint strength and anchorage requirements.

- 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. Comply with installation requirements in Section 055000 "Metal Fabrications" for site-fabricated metal supports.
- B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor electrical materials and equipment.
- C. 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. Galvanized Surfaces: Clean welds, bolted connections, and abraded areas and apply galvanizing-repair paint to comply with ASTM A 780.

END OF SECTION

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SECTION 260533

RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Metal conduits, tubing, and fittings.
 - 2. Boxes, enclosures, and cabinets.
 - 3. Handholes and boxes for exterior underground cabling.

1.3 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.

PART 2 - PRODUCTS

2.1 METAL CONDUITS, TUBING, AND FITTINGS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Allied Tube & Conduit; a Tyco International Ltd. Co.
 - 2. O-Z/Gedney; a brand of EGS Electrical Group.
 - 3. Wheatland Tube Company; a division of John Maneely 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. RGS: Comply with ANSI C80.1 and UL 6.
- D. EMT: Comply with ANSI C80.3 and UL 797.

- E. FMC: Comply with UL 1; zinc-coated steel.

2.2 BOXES, ENCLOSURES, AND CABINETS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Hoffman; a Pentair company.
 - 2. Hubbell Incorporated; Killark Division.
 - 3. Thomas & Betts Corporation.
- 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 and UL 514A.
- D. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy, Type FD, with gasketed cover.
- E. Nonmetallic Outlet and Device Boxes: Comply with NEMA OS 2 and UL 514C.

PART 3 - EXECUTION

3.1 RACEWAY APPLICATION

- A. Outdoors: Apply raceway products as specified below unless otherwise indicated:
 - 1. Exposed Conduit: GRC.
 - 2. Concealed Conduit, Aboveground: GRC.
 - 3. Underground Conduit: RNC, direct buried.
 - 4. Connection to Vibrating Equipment (Including Transformers and Hydraulic, Pneumatic, Electric Solenoid, or Motor-Driven Equipment): LFMC.
 - 5. Boxes and Enclosures, Aboveground: NEMA 250, Type 3R.
- 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.
- c. Mechanical rooms.
- 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.
- 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. PVC Externally Coated, Rigid Steel Conduits: Use only fittings listed for use with this type of conduit. Patch and seal all joints, nicks, and scrapes in PVC coating after installing conduits and fittings. Use sealant recommended by fitting manufacturer and apply in thickness and number of coats recommended by manufacturer.
 - 3. EMT: Use setscrew fittings. Comply with NEMA FB 2.10.
 - 4. 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.

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. Install raceway sealing fittings at accessible locations according to NFPA 70 and fill them with listed sealing compound. For concealed raceways, install each fitting in a flush steel box with a blank cover plate having a finish similar to that of adjacent plates or surfaces. Install raceway sealing fittings according to NFPA 70.
- J. 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.
- K. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.
- L. Locate boxes so that cover or plate will not span different building finishes.
- M. 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.
- N. Fasten junction and pull boxes to or support from building structure. Do not support boxes by conduits.
- O. Set metal floor boxes level and flush with finished floor surface.

END OF SECTION

SECTION 262416

PANELBOARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Distribution panelboards.

1.3 DEFINITIONS

- A. SVR: Suppressed voltage rating.

1.4 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Panelboards shall withstand the effects of earthquake motions determined according to SEI/ASCE 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."

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of panelboard, switching and overcurrent protective device, accessory, and component indicated. Include dimensions and manufacturers' technical data on features, performance, electrical characteristics, ratings, and finishes.
- B. Shop Drawings: For each panelboard and related equipment.
 - 1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
 - 2. Detail enclosure types and details for types other than NEMA 250, Type 1.
 - 3. Detail bus configuration, current, and voltage ratings.
 - 4. Short-circuit current rating of panelboards and overcurrent protective devices.
 - 5. Include evidence of NRTL listing for series rating of installed devices.

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. Source Limitations: Obtain panelboards, overcurrent protective devices, components, and accessories from single source from single manufacturer.
- C. Product Selection for Restricted Space: Drawings indicate maximum dimensions for panelboards including clearances between panelboards 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 NEMA PB 1.
- F. Comply with NFPA 70.

1.7 COORDINATION

- A. Coordinate layout and installation of panelboards and components with other construction that penetrates walls or is supported by them, including electrical and other types of equipment, raceways, piping, encumbrances to workspace clearance requirements, and adjacent surfaces. Maintain required workspace clearances and required clearances for equipment access doors and panels.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PANELBOARDS

- A. Enclosures: Surface-mounted cabinets.
 - 1. Rated for environmental conditions at installed location.
 - a. Indoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: NEMA 250, Type 12.
 - 2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.
 - 3. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.
 - 4. Skirt for Surface-Mounted Panelboards: Same gage and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor.

5. Gutter Extension and Barrier: Same gage and finish as panelboard enclosure; integral with enclosure body. Arrange to isolate individual panel sections.
6. Finishes:
 - a. Panels and Trim: galvanized steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.
 - b. Back Boxes: Galvanized steel.
 - c. Fungus Proofing: Permanent fungicidal treatment for overcurrent protective devices and other components.
7. Directory Card: Inside panelboard door, mounted in metal frame with transparent protective cover.

B. Incoming Mains Location: Bottom.

C. Phase, Neutral, and Ground Buses:

1. Material: Hard-drawn copper, 98 percent conductivity.
2. Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.

D. Conductor Connectors: Suitable for use with conductor material and sizes.

1. Material: Hard-drawn copper, 98 percent conductivity.
2. Main and Neutral Lugs: Compression type.
3. Ground Lugs and Bus-Configured Terminators: Compression type.

E. Service Equipment Label: NRTL labeled for use as service equipment for panelboards or load centers with one or more main service disconnecting and overcurrent protective devices.

F. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

2.2 DISTRIBUTION PANELBOARDS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

B. Basis-of-Design Product: Subject to compliance with requirements, provide Square D or comparable product by one of the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.

- C. Panelboards: NEMA PB 1, power and feeder distribution type.
- D. Doors: Secured with vault-type latch with tumbler lock; keyed alike.
 - 1. For doors more than 36 inches (914 mm) high, provide two latches, keyed alike.
- E. Mains: Circuit breaker.
- F. Branch Overcurrent Protective Devices for Circuit-Breaker Frame Sizes 125 A and Smaller: Bolt-on circuit breakers.

2.3 DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- B. Basis-of-Design Product: Subject to compliance with requirements, provide Square D or comparable product by one of the following:
 - 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
- C. Molded-Case Circuit Breaker (MCCB): Comply with UL 489, with interrupting capacity to meet available fault currents.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Receive, inspect, handle, and store panelboards according to NECA 407.
- B. Examine panelboards before installation. Reject panelboards that are damaged or rusted or have been subjected to water saturation.
- C. Examine elements and surfaces to receive panelboards for compliance with installation tolerances and other conditions affecting performance of the Work.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install panelboards and accessories according to NECA 407.
- B. Mount top of trim 90 inches (2286 mm) above finished floor unless otherwise indicated.
- C. Mount panelboard cabinet plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.
- D. Comply with NECA 1.

3.3 IDENTIFICATION

- A. Create a directory to indicate installed circuit loads; incorporate Commissioner's final room designations. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Contractor will 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. Perform tests and inspections.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- D. Acceptance Testing Preparation:
 - 1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
 - 2. Test continuity of each circuit.
- E. 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 panelboard. 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 panelboard 11 months after date of Substantial Completion.
 - c. Instruments and Equipment:
 - 1) Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
- F. Panelboards will be considered defective if they do not pass tests and inspections.

- G. Prepare test and inspection reports, including a certified report that identifies panelboards included 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 component to function smoothly, and lubricate as recommended by manufacturer.
- B. Load Balancing: After Substantial Completion, but not more than 60 days after Final Acceptance, measure load balancing and make circuit changes.
 - 1. Measure as directed during period of normal system loading.
 - 2. Perform load-balancing circuit changes outside normal occupancy/working schedule of the facility and at time directed. Avoid disrupting critical 24-hour services such as fax machines and on-line data processing, computing, transmitting, and receiving equipment.
 - 3. After circuit changes, recheck loads during normal load period. Record all load readings before and after changes and submit test records.
 - 4. Tolerance: Difference exceeding 20 percent between phase loads, within a panelboard, is not acceptable. Rebalance and recheck as necessary to meet this minimum requirement.

3.6 PROTECTION

- A. Temporary Heating: Apply temporary heat to maintain temperature according to manufacturer's written instructions.

END OF SECTION

SECTION 262726

WIRING DEVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Receptacles.
2. Weather-resistant receptacles.
3. Snap switches.
4. Solid-state fan speed controls.
5. Wall-switch.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Coordination:

1. Receptacles for Owner-Furnished Equipment: Match plug configurations.
2. Cord and Plug Sets: Match equipment requirements.

1.4 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.

1.5 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. **Manufacturers' Names:** Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
1. Cooper Wiring Devices; Division of Cooper Industries, Inc. (Cooper).
 2. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
 3. Leviton Mfg. Company Inc. (Leviton).
- B. **Source Limitations:** Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

2.2 GENERAL WIRING-DEVICE REQUIREMENTS

- A. **Wiring Devices, Components, 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 NFPA 70.
- C. Devices that are manufactured for use with modular plug-in connectors may be substituted under the following conditions:
1. Connectors shall comply with UL 2459 and shall be made with stranding building wire.
 2. Devices shall comply with the requirements in this Section.

2.3 STRAIGHT-BLADE RECEPTACLES

- A. **Convenience Receptacles, 125 V, 20 A:** Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498, and FS W-C-596.
1. **Products:** Subject to compliance with requirements, provide one of the following:
 - a. Cooper; 5351 (single), CR5362 (duplex).
 - b. Hubbell; HBL5351 (single), HBL5352 (duplex).
 - c. Leviton; 5891 (single), 5352 (duplex).

2.4 TOGGLE SWITCHES

- A. Comply with NEMA WD 1, UL 20, and FS W-S-896.
- B. **Switches, 120/277 V, 20 A:**
1. **Products:** Subject to compliance with requirements, provide one of the following:
 - a. Three Way:
 - b. Cooper; AH1223.

- c. Hubbell; HBL1223.
- d. Leviton; 1223-2.

2.5 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: Steel with white baked enamel, suitable for field painting.
 - 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.
- B. Wet-Location, Weatherproof Cover Plates: NEMA 250, complying with Type 3R, weather-resistant, die-cast aluminum with lockable cover.

2.6 FINISHES

- A. Device Color:
 - 1. Wiring Devices Connected to Normal Power System: Ivory unless otherwise indicated or required by NFPA 70 or device listing.
- B. Wall Plate Color: For plastic covers, 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. Pigtailling 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.

- 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. 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.

3.2 IDENTIFICATION

- A. Identify each receptacle with panelboard identification and circuit number. Use hot, stamped, or engraved machine printing with black-filled lettering on face of plate, and durable wire markers or tags inside outlet boxes.

3.3 FIELD QUALITY CONTROL

- A. Perform the following tests and inspections with the assistance of a factory-authorized service representative:
 - 1. Test Instruments: Use instruments that comply with UL 1436.
 - 2. 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. Using the test plug, verify that the device and its outlet box are securely mounted.
 - 5. 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

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SECTION 265100

INTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Interior lighting fixtures, lamps, and ballasts.
2. Emergency lighting units.
3. Exit signs.
4. Lighting fixture supports.

1.3 DEFINITIONS

- A. BF: Ballast factor.
- B. CCT: Correlated color temperature.
- C. CRI: Color-rendering index.
- D. LER: Luminaire efficacy rating.
- E. Lumen: Measured output of lamp and luminaire, or both.
- F. Luminaire: Complete lighting fixture, including ballast housing if provided.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of lighting fixture, arranged in order of fixture designation. Include data on features, accessories, finishes, and the following:
 1. Physical description of lighting fixture including dimensions.
 2. Emergency lighting units including battery and charger.
 3. Energy-efficiency data.
 4. Life, output (lumens, CCT, and CRI), and energy-efficiency data for lamps.

5. Photometric data and adjustment factors based on laboratory tests, complying with IESNA Lighting Measurements Testing & Calculation Guides, of each lighting fixture type. The adjustment factors shall be for lamps, ballasts, and accessories identical to those indicated for the lighting fixture as applied in this Project.
 - a. Testing Agency Certified Data: For indicated fixtures, photometric data shall be certified by a qualified independent testing agency. Photometric data for remaining fixtures shall be certified by manufacturer.
 - b. Manufacturer Certified Data: Photometric data shall be certified by a manufacturer's laboratory with a current accreditation under the National Voluntary Laboratory Accreditation Program for Energy Efficient Lighting Products.

1.5 QUALITY ASSURANCE

- A. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by manufacturers' laboratories that are accredited under the National Volunteer Laboratory Accreditation Program for Energy Efficient Lighting Products.
- B. Luminaire Photometric Data Testing Laboratory Qualifications: Provided by an independent agency, with the experience and capability to conduct the testing indicated, that is an NRTL as defined by OSHA in 29 CFR 1910, complying with the IESNA Lighting Measurements Testing & Calculation Guides.
- C. 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.
- D. Comply with NFPA 70.

1.6 COORDINATION

- A. Coordinate layout and installation of lighting fixtures and suspension system with other construction that penetrates ceilings or is supported by them, including HVAC equipment, fire-suppression system, and partition assemblies.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide product indicated on Drawings.

2.2 GENERAL REQUIREMENTS FOR LIGHTING FIXTURES AND COMPONENTS

- A. Metal Parts: Free of burrs and sharp corners and edges.
- B. Sheet Metal Components: Steel unless otherwise indicated. Form and support to prevent warping and sagging.
- C. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to

prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position.

2.3 EMERGENCY LED POWER UNIT

A. Internal Type: Self-contained, modular, battery-inverter unit, factory mounted within lighting fixture body and compatible with ballast. Comply with UL 924.

1. Emergency Connection: Operate one LED lamp continuously at an output of 1100 lumens each. Connect unswitched circuit to battery-inverter unit and switched circuit to fixture ballast.
2. Test Push Button and Indicator Light: Visible and accessible without opening fixture or entering ceiling space.
 - a. Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
 - b. Indicator Light: LED indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.
3. Battery: Sealed, maintenance-free, nickel-cadmium type.
4. Charger: Fully automatic, solid-state, constant-current type with sealed power transfer relay.

2.4 EXIT SIGNS

A. General Requirements for Exit Signs: Comply with UL 924; for sign colors, visibility, luminance, and lettering size, comply with authorities having jurisdiction.

B. Internally Lighted Signs:

1. Lamps for AC Operation: LEDs, 50,000 hours minimum rated lamp life.
2. Self-Powered Exit Signs (Battery Type): Integral automatic charger in a self-contained power pack.
 - a. Battery: Sealed, maintenance-free, nickel-cadmium type.
 - b. Charger: Fully automatic, solid-state type with sealed transfer relay.
 - c. Operation: Relay automatically energizes lamp from battery when circuit voltage drops to 80 percent of nominal voltage or below. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.
 - d. Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
 - e. LED Indicator Light: Indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.
 - f. Integral Self-Test: Factory-installed electronic device automatically initiates code-required test of unit emergency operation at required intervals. Test failure is annunciated by an integral audible alarm and a flashing red LED.

2.5 EMERGENCY LIGHTING UNITS

- A. General Requirements for Emergency Lighting Units: Self-contained units complying with UL 924.
1. Battery: Sealed, maintenance-free, lead-acid type.
 2. Charger: Fully automatic, solid-state type with sealed transfer relay.
 3. Operation: Relay automatically turns lamp on when power-supply circuit voltage drops to 80 percent of nominal voltage or below. Lamp automatically disconnects from battery when voltage approaches deep-discharge level. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.
 4. Test Push Button: Push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
 5. LED Indicator Light: Indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.
 6. Integral Self-Test: Factory-installed electronic device automatically initiates code-required test of unit emergency operation at required intervals. Test failure is annunciated by an integral audible alarm and a flashing red LED.

2.6 LIGHTING FIXTURE SUPPORT COMPONENTS

- A. Comply with Section 260529 "Hangers and Supports for Electrical Systems" for channel- and angle-iron supports and nonmetallic channel and angle supports.
- B. Twin-Stem Hangers: Two, 1/2-inch (13-mm) steel tubes with single canopy designed to mount a single fixture. Finish same as fixture.
- C. Wires: ASTM A 641/A 641M, Class 3, soft temper, zinc-coated steel, 12 gage (2.68 mm).
- D. Rod Hangers: 3/16-inch (5-mm) minimum diameter, cadmium-plated, threaded steel rod.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Lighting fixtures:
1. Set level, plumb, and square with ceilings and walls unless otherwise indicated.
 2. Install lamps in each luminaire.
- B. Temporary Lighting: If it is necessary, and approved by Commissioner, to use permanent luminaires for temporary lighting, install and energize the minimum number of luminaires

necessary. When construction is sufficiently complete, remove the temporary luminaires, disassemble, clean thoroughly, install new lamps, and reinstall.

C. Suspended Lighting Fixture Support:

1. Pendants and Rods: Where longer than 48 inches (1200 mm), brace to limit swinging.
2. Stem-Mounted, Single-Unit Fixtures: Suspend with twin-stem hangers.

3.2 FIELD QUALITY CONTROL

- A. Test for Emergency Lighting: Interrupt power supply to demonstrate proper operation. Verify transfer from normal power to battery and retransfer to normal.
- B. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

END OF SECTION

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SECTION 265600

EXTERIOR LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

- 1. Exterior luminaires with lamps and ballasts.

B. Related Sections:

- 1. Section 265100 "Interior Lighting" for exterior luminaires normally mounted on exterior surfaces of buildings.

1.3 DEFINITIONS

- A. CCT: Correlated color temperature.
- B. CRI: Color-rendering index.
- C. HID: High-intensity discharge.
- D. LER: Luminaire efficacy rating.
- E. Luminaire: Complete lighting fixture, including ballast housing if provided.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide product indicated on Drawings.

2.2 GENERAL REQUIREMENTS FOR LUMINAIRES

- A. Luminaires shall comply with UL 1598 and be listed and labeled for installation in wet locations by an NRTL acceptable to authorities having jurisdiction.
- B. Lateral Light Distribution Patterns: Comply with IESNA RP-8 for parameters of lateral light distribution patterns indicated for luminaires.
- C. Metal Parts: Free of burrs and sharp corners and edges.

- D. Sheet Metal Components: Corrosion-resistant aluminum unless otherwise indicated. Form and support to prevent warping and sagging.
- E. Housings: Rigidly formed, weather- and light-tight enclosures that will not warp, sag, or deform in use. Provide filter/breather for enclosed luminaires.
- F. Doors, Frames, and Other Internal Access: Smooth operating, free of light leakage under operating conditions, and designed to permit relamping without use of tools. Designed to prevent doors, frames, lenses, diffusers, and other components from falling accidentally during relamping and when secured in operating position. Doors shall be removable for cleaning or replacing lenses. Designed to disconnect ballast when door opens.
- G. Exposed Hardware Material: Stainless steel.
- H. Plastic Parts: High resistance to yellowing and other changes due to aging, exposure to heat, and UV radiation.
- I. Reflecting surfaces shall have minimum reflectance as follows unless otherwise indicated:
 - 1. White Surfaces: 85 percent.
 - 2. Specular Surfaces: 83 percent.
 - 3. Diffusing Specular Surfaces: 75 percent.
- J. Lenses and Refractors Gaskets: Use heat- and aging-resistant resilient gaskets to seal and cushion lenses and refractors in luminaire doors.
- K. Factory-Applied Finish for Aluminum Luminaires: Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
 - 1. Class I, Color Anodic Finish: AA-M32C22A42/A44 (Mechanical Finish: medium satin; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class I, integrally colored or electrolytically deposited color coating 0.018 mm or thicker) complying with AAMA 611.
 - a. Color: Dark bronze.
- L. Factory-Applied Labels: Comply with UL 1598. Include recommended lamps and ballasts. Labels shall be located where they will be readily visible to service personnel, but not seen from normal viewing angles when lamps are in place.
 - 1. Label shall include the following lamp and ballast characteristics:
 - a. "USES ONLY" and include specific lamp type.
 - b. CCT and CRI for all luminaires.

PART 3 - EXECUTION

3.1 LUMINAIRE INSTALLATION

- A. Install lamps in each luminaire.
- B. Fasten luminaire to indicated structural supports.
 - 1. Use fastening methods and materials selected to resist seismic forces defined for the application and approved by manufacturer.
- C. Adjust luminaires that require field adjustment or aiming.

3.2 CORROSION PREVENTION

- A. Steel Conduits: Comply with Section 260533 "Raceways and Boxes for Electrical Systems." In concrete foundations, wrap conduit with 0.010-inch- (0.254-mm-) thick, pipe-wrapping plastic tape applied with a 50 percent overlap.

3.3 FIELD QUALITY CONTROL

- A. Inspect each installed fixture for damage. Replace damaged fixtures and components.
- B. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.
 - 1. Verify operation of photoelectric controls.
- C. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

END OF SECTION

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SECTION 283111

DIGITAL, ADDRESSABLE FIRE-ALARM SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Fire-alarm control unit.
2. Manual fire-alarm boxes.
3. System smoke detectors.
4. Addressable interface device.
5. Digital alarm communicator transmitter.

1.3 DEFINITIONS

- A. LED: Light-emitting diode.
- B. NICET: National Institute for Certification in Engineering Technologies.

1.4 SYSTEM DESCRIPTION

- A. Noncoded, UL-certified addressable system, with multiplexed signal transmission, dedicated to fire-alarm service only.

1.5 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Fire-alarm control unit and raceways shall withstand the effects of earthquake motions determined according to SEI/ASCE 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."

1.6 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For fire-alarm system. Include plans, elevations, sections, details, and attachments to other work.
 - 1. Comply with recommendations in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72.
 - 2. Include voltage drop calculations for notification appliance circuits.
 - 3. Include battery-size calculations.
 - 4. Include performance parameters and installation details for each detector, verifying that each detector is listed for complete range of air velocity, temperature, and humidity possible when air-handling system is operating.
 - 5. Include plans, sections, and elevations of heating, ventilating, and air-conditioning ducts, drawn to scale and coordinating installation of duct smoke detectors and access to them. Show critical dimensions that relate to placement and support of sampling tubes, detector housing, and remote status and alarm indicators. Locate detectors according to manufacturer's written recommendations.
 - 6. Include voice/alarm signaling-service equipment rack or console layout, grounding schematic, amplifier power calculation, and single-line connection diagram.
 - 7. Include floor plans to indicate final outlet locations showing address of each addressable device. Show size and route of cable and conduits.

1.7 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Seismic Qualification Certificates: For fire-alarm control unit, 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.

1.8 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For fire-alarm systems and components to include in emergency, operation, and maintenance manuals. In addition to items specified in Section 017823 "Operation and Maintenance Data," include the following:
 - 1. Comply with the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.

2. Provide "Record of Completion Documents" according to NFPA 72 article "Permanent Records" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter.
3. Record copy of site-specific software.
4. Provide "Maintenance, Inspection and Testing Records" according to NFPA 72 article of the same name and include the following:
 - a. Frequency of testing of installed components.
 - b. Frequency of inspection of installed components.
 - c. Requirements and recommendations related to results of maintenance.
 - d. Manufacturer's user training manuals.
5. Manufacturer's required maintenance related to system warranty requirements.
6. Abbreviated operating instructions for mounting at fire-alarm control unit.

B. Software and Firmware Operational Documentation:

1. Software operating and upgrade manuals.
2. Program Software Backup: On magnetic media or compact disk, complete with data files.
3. Device address list.
4. Printout of software application and graphic screens.

1.9 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. Lamps for Strobe Units: Quantity equal to 2 percent of amount installed, but no fewer than 1 unit.
 2. Smoke Detectors: Quantity equal to 2 percent of amount of each type installed, but no fewer than 1 unit of each type.
 3. Detector Bases: Quantity equal to 2 percent of amount of each type installed, but no fewer than 1 unit of each type.
 4. Keys and Tools: One extra set for access to locked and tamperproofed components.
 5. Visual Notification Appliances: One of each type installed.

1.10 QUALITY ASSURANCE

- A. Installer Qualifications: Personnel shall be trained and certified by manufacturer for installation of units required for this Project.
- B. Installer Qualifications: Installation shall be by personnel certified by NICET as fire-alarm Level II technician.
- C. Source Limitations for Fire-Alarm System and Components: Obtain fire-alarm system from single source from single manufacturer.

- 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. NFPA Certification: Obtain certification according to NFPA 72 by a UL-listed alarm company.

1.11 SOFTWARE SERVICE AGREEMENT

- A. Comply with UL 864.
- B. Technical Support: Beginning with Substantial Completion, provide software support for two years.
- C. Upgrade Service: Update software to latest version at Project completion. Install and program software upgrades that become available within two years from date of Substantial Completion. Upgrading software shall include operating system. Upgrade shall include new or revised licenses for use of software.
 - 1. Provide 30 days' notice to Commissioner to allow scheduling and access to system and to allow Owner to upgrade computer equipment if necessary.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
- B. Basis-of-Design Product: Subject to compliance with requirements, provide comparable product by one of the following:
 - 1. GAMEWELL; a Honeywell company.
 - 2. GE Infrastructure; a unit of General Electric Company.
 - 3. NOTIFIER; a Honeywell company.

2.2 SYSTEMS OPERATIONAL DESCRIPTION

- A. Fire-alarm signal initiation shall be by one or more of the following devices and systems:
 - 1. Manual stations.
 - 2. Smoke detectors.
 - 3. Verified automatic alarm operation of smoke detectors.
- B. Fire-alarm signal shall initiate the following actions:
 - 1. Continuously operate alarm notification appliances.
 - 2. Identify alarm at fire-alarm control unit.

3. Transmit an alarm signal to the remote alarm receiving station.

C. System trouble signal initiation shall be by one or more of the following devices and actions:

1. Open circuits, shorts, and grounds in designated circuits.
2. Opening, tampering with, or removing alarm-initiating and supervisory signal-initiating devices.
3. Loss of primary power at fire-alarm control unit.
4. Ground or a single break in fire-alarm control unit internal circuits.
5. Abnormal ac voltage at fire-alarm control unit.
6. Break in standby battery circuitry.
7. Failure of battery charging.
8. Abnormal position of any switch at fire-alarm control unit.

D. System Trouble and Supervisory Signal Actions: Initiate notification appliance and annunciate at fire-alarm control unit.

2.3 FIRE-ALARM CONTROL UNIT

A. General Requirements for Fire-Alarm Control Unit:

1. Field-programmable, microprocessor-based, modular, power-limited design with electronic modules, complying with UL 864 and listed and labeled by an NRTL.
 - a. System software and programs shall be held in flash electrically erasable programmable read-only memory (EEPROM), retaining the information through failure of primary and secondary power supplies.
 - b. Include a real-time clock for time annotation of events on the event recorder and printer.
2. Addressable initiation devices that communicate device identity and status.
 - a. Smoke sensors shall additionally communicate sensitivity setting and allow for adjustment of sensitivity at fire-alarm control unit.
 - b. Temperature sensors shall additionally test for and communicate the sensitivity range of the device.
3. Addressable control circuits for operation of mechanical equipment.

B. Alphanumeric Display and System Controls: Arranged for interface between human operator at fire-alarm control unit and addressable system components including annunciation and supervision. Display alarm, supervisory, and component status messages and the programming and control menu.

1. Annunciator and Display: Liquid-crystal type, one line of 40 characters, minimum.
2. Keypad: Arranged to permit entry and execution of programming, display, and control commands and to indicate control commands to be entered into the system for control of smoke-detector sensitivity and other parameters.

C. Circuits:

1. Initiating Device, Notification Appliance, and Signaling Line Circuits: NFPA 72, Class A.
 - a. Initiating Device Circuits: Style D.
 - b. Signaling Line Circuits: Style 2.
 - c. Install no more than 10 addressable devices on each signaling line circuit.

D. Smoke-Alarm Verification:

1. Initiate audible and visible indication of an "alarm-verification" signal at fire-alarm control unit.
2. Activate an NRTL-listed and -approved "alarm-verification" sequence at fire-alarm control unit and detector.
3. Sound general alarm if the alarm is verified.
4. Cancel fire-alarm control unit indication and system reset if the alarm is not verified.

E. Primary Power: 24-V dc obtained from 120-V ac service and a power-supply module. Initiating devices, notification appliances, signaling lines, trouble signals, supervisory signals, supervisory and digital alarm communicator transmitters shall be powered by 24-V dc source.

1. Alarm current draw of entire fire-alarm system shall not exceed 80 percent of the power-supply module rating.

F. Secondary Power: 24-V dc supply system with batteries, automatic battery charger, and automatic transfer switch.

1. Batteries: Sealed lead calcium.

G. Instructions: Computer printout or typewritten instruction card mounted behind a plastic or glass cover in a stainless-steel or aluminum frame. Include interpretation and describe appropriate response for displays and signals. Briefly describe the functional operation of the system under normal, alarm, and trouble conditions.

2.4 MANUAL FIRE-ALARM BOXES

A. General Requirements for Manual Fire-Alarm Boxes: Comply with UL 38. Boxes shall be finished in red with molded, raised-letter operating instructions in contrasting color; shall show visible indication of operation; and shall be mounted on recessed outlet box. If indicated as surface mounted, provide manufacturer's surface back box.

1. Single-action mechanism, pull-lever type; with integral addressable module arranged to communicate manual-station status (normal, alarm, or trouble) to fire-alarm control unit.
2. Station Reset: Key- or wrench-operated switch.

2.5 SYSTEM SMOKE DETECTORS

A. General Requirements for System Smoke Detectors:

1. Comply with UL 268; operating at 24-V dc, nominal.
2. Detectors shall be two-wire type.
3. Integral Addressable Module: Arranged to communicate detector status (normal, alarm, or trouble) to fire-alarm control unit.
4. Base Mounting: Detector and associated electronic components shall be mounted in a twist-lock module that connects to a fixed base. Provide terminals in the fixed base for connection to building wiring.
5. Self-Restoring: Detectors do not require resetting or readjustment after actuation to restore them to normal operation.
6. Integral Visual-Indicating Light: LED type indicating detector has operated and power-on status.
7. Remote Control: Unless otherwise indicated, detectors shall be analog-addressable type, individually monitored at fire-alarm control unit for calibration, sensitivity, and alarm condition and individually adjustable for sensitivity by fire-alarm control unit.
 - a. Rate-of-rise temperature characteristic shall be selectable at fire-alarm control unit for 15 or 20 deg F (8 or 11 deg C) per minute.
 - b. Fixed-temperature sensing shall be independent of rate-of-rise sensing and shall be settable at fire-alarm control unit to operate at 135 or 155 deg F (57 or 68 deg C).
 - c. Provide multiple levels of detection sensitivity for each sensor.

B. Ionization Smoke Detector:

1. Detector address shall be accessible from fire-alarm control unit and shall be able to identify the detector's location within the system and its sensitivity setting.
2. An operator at fire-alarm control unit, having the designated access level, shall be able to manually access the following for each detector:
 - a. Primary status.
 - b. Device type.
 - c. Present average value.
 - d. Present sensitivity selected.
 - e. Sensor range (normal, dirty, etc.).

2.6 NOTIFICATION APPLIANCES

- ### A. General Requirements for Notification Appliances: Individually addressed, connected to a signaling line circuit, equipped for mounting as indicated and with screw terminals for system connections.

- B. Visible Notification Appliances: Xenon strobe lights comply with UL 1971, with clear or nominal white polycarbonate lens mounted on an aluminum faceplate. The word "FIRE" is engraved in minimum 1-inch- (25-mm-) high letters on the lens.
1. Rated Light Output:
 - a. 75 cd.
 2. Mounting: Wall mounted unless otherwise indicated.
 3. For units with guards to prevent physical damage, light output ratings shall be determined with guards in place.
 4. Flashing shall be in a temporal pattern, synchronized with other units.
 5. Strobe Leads: Factory connected to screw terminals.
 6. Mounting Faceplate: Factory finished, red.

2.7 ADDRESSABLE INTERFACE DEVICE

- A. Description: Microelectronic monitor module, NRTL listed for use in providing a system address for alarm-initiating devices for wired applications with normally open contacts.

2.8 DIGITAL ALARM COMMUNICATOR TRANSMITTER

- A. Digital alarm communicator transmitter shall be acceptable to the remote central station and shall comply with UL 632 and be listed and labeled by an NRTL.
- B. Functional Performance: Unit shall receive an alarm, supervisory, or trouble signal from fire-alarm control unit and automatically capture one telephone line and dial a preset number for a remote central station. When contact is made with central station(s), signals shall be transmitted. If service on either line is interrupted for longer than 45 seconds, transmitter shall initiate a local trouble signal and transmit the signal indicating loss of telephone line to the remote alarm receiving station over the remaining line. Transmitter shall automatically report telephone service restoration to the central station. If service is lost on both telephone lines, transmitter shall initiate the local trouble signal.
- C. Local functions and display at the digital alarm communicator transmitter shall include the following:
1. Verification that both telephone lines are available.
 2. Programming device.
 3. LED display.
 4. Manual test report function and manual transmission clear indication.
 5. Communications failure with the central station or fire-alarm control unit.
- D. Digital data transmission shall include the following:
1. Address of the alarm-initiating device.
 2. Address of the supervisory signal.
 3. Address of the trouble-initiating device.

4. Loss of ac supply or loss of power.
5. Low battery.
6. Abnormal test signal.
7. Communication bus failure.

E. Secondary Power: Integral rechargeable battery and automatic charger.

F. Self-Test: Conducted automatically every 24 hours with report transmitted to central station.

PART 3 - EXECUTION

3.1 EQUIPMENT INSTALLATION

A. Comply with NFPA 72 for installation of fire-alarm equipment.

B. Install wall-mounted equipment, with tops of cabinets not more than 72 inches (1830 mm) above the finished floor.

C. Smoke- or Heat-Detector Spacing:

1. Comply with NFPA 72, "Smoke-Sensing Fire Detectors" Section in the "Initiating Devices" Chapter, for smoke-detector spacing.
2. Smooth ceiling spacing shall not exceed 30 feet (9 m).
3. HVAC: Locate detectors not closer than 3 feet (1 m) from air-supply diffuser or return-air opening.
4. Lighting Fixtures: Locate detectors not closer than 12 inches (300 mm) from any part of a lighting fixture.

D. Visible Alarm-Indicating Devices: Install adjacent to each alarm bell or alarm horn and at least 6 inches (150 mm) below the ceiling.

E. Device Location-Indicating Lights: Locate in public space near the device they monitor.

F. Fire-Alarm Control Unit: Surface mounted, with tops of cabinets not more than 72 inches (1830 mm) above the finished floor.

3.2 IDENTIFICATION

A. Identify system components, wiring, cabling, and terminals.

B. Install framed instructions in a location visible from fire-alarm control unit.

3.3 GROUNDING

A. Ground fire-alarm control unit and associated circuits; comply with IEEE 1100. Install a ground wire from main service ground to fire-alarm control unit.

3.4 FIELD QUALITY CONTROL

- A. Field tests shall be witnessed by authorities having jurisdiction.
- B. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.
- C. Perform tests and inspections.
 - 1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.
- D. Tests and Inspections:
 - 1. Visual Inspection: Conduct visual inspection prior to testing.
 - a. Inspection shall be based on completed Record Drawings and system documentation that is required by NFPA 72 in its "Completion Documents, Preparation" Table in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter.
 - b. Comply with "Visual Inspection Frequencies" Table in the "Inspection" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72; retain the "Initial/Reacceptance" column and list only the installed components.
 - 2. System Testing: Comply with "Test Methods" Table in the "Testing" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
 - 3. Test audible appliances for the public operating mode according to manufacturer's written instructions. Perform the test using a portable sound-level meter complying with Type 2 requirements in ANSI S1.4.
 - 4. Test audible appliances for the private operating mode according to manufacturer's written instructions.
 - 5. Test visible appliances for the public operating mode according to manufacturer's written instructions.
 - 6. Factory-authorized service representative shall prepare the "Fire Alarm System Record of Completion" in the "Documentation" Section of the "Fundamentals of Fire Alarm Systems" Chapter in NFPA 72 and the "Inspection and Testing Form" in the "Records" Section of the "Inspection, Testing and Maintenance" Chapter in NFPA 72.
- E. Reacceptance Testing: Perform reacceptance testing to verify the proper operation of added or replaced devices and appliances.
- F. Fire-alarm system will be considered defective if it does not pass tests and inspections.
- G. Prepare test and inspection reports.
- H. Maintenance Test and Inspection: Perform tests and inspections listed for weekly, monthly, quarterly, and semiannual periods. Use forms developed for initial tests and inspections.

- I. Annual Test and Inspection: One year after date of Substantial Completion, test fire-alarm system complying with visual and testing inspection requirements in NFPA 72. Use forms developed for initial tests and inspections.

3.5 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Commissioner's maintenance personnel to adjust, operate, and maintain fire-alarm system.

END OF SECTION

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SECTION 311000

SITE PREPARATION

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Remove all existing improvements within the scope of work shown on the Contract Drawings unless otherwise noted and as specified in Section 022100. Perform Work in conjunction with Section 312100.

1.2 DEFINITIONS

- A. Improvements

Man-produced items such as concrete, brick, asphalt, piping, etc. Those items not naturally occurring.

1.3 QUALITY ASSURANCE

- A. Qualifications

Company specializing in the Work of this Section shall have a minimum of 3 years experience.

- B. Regulatory Requirements

Work of this Section shall conform to all requirements of the NYC Building Code and all applicable regulations of governmental authorities having jurisdiction, including safety, health, 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.

1.4 EXISTING CONDITIONS

- A. Obtain all Building Department data available on the lot and those adjacent lots affecting or being affected by the project construction.
- B. Prior to clearing and removal or abandonment of improvements, ascertain the exact locations of all existing underground utilities. Protect these during subsequent operations.

1.5 SEQUENCING AND SCHEDULING

- A. Perform work in such a manner to ensure a minimum interference with roads, walks, adjacent properties, and facilities to remain open. Do not close or obstruct these items without obtaining permits from the agencies having jurisdiction or the permission of the adjacent owners.

PART 2 – PRODUCTS – NOT APPLICABLE

PART 3 - EXECUTION

3.1 VERIFICATION OF CONDITIONS

- A. Verify existing site conditions match those of the survey and pre-bid inspections. Notify the Commissioner in writing prior to commencement of Work of any discrepancies.

3.2 PROTECTION

- A. Provide adequate protection measures to protect workmen and pedestrians at the site.
- B. Provide for surface drainage during construction to avoid creating a nuisance to adjacent buildings and properties. Provide for sedimentation and erosion control as specified in Section 312100.
- C. Existing Improvements
 - 1. Prevent damage to existing improvements designated to remain. If they are damaged during construction, restore improvements to their original condition.
 - 2. Prevent damage to improvements on adjoining properties. Restore damaged improvements to their original condition to the satisfaction of their owner.
- D. Existing Trees and Vegetation
 - 1. Hire a qualified horticulturist or arborist to supervise the protection of and the repair or replacement of damaged trees or other vegetation.
 - 2. Protect existing trees and other vegetation designated to remain from damage due to construction to the satisfaction of the Commissioner.
 - a. The Contractor shall be responsible for the protection of tops, trunks, and root systems of existing trees on the project site that are to remain. Existing trees subject to construction damage shall be boxed, fenced, or otherwise protected before any work is started; remove boxing when directed. Do not permit heavy equipment or

stockpiles within branch spread. Under the direction of the horticulturist, remove interfering branches without injury to trunks and cover scars with tree paint.

- b. Where excavating, filling, or grading is required within the branch spread of trees that are to remain, the work shall be performed under the direction of the horticulturist.
 - c. Water trees and vegetation as required to maintain their health until project is finished.
 - d. When trenching occurs around trees to remain, the tree roots shall not be cut but the trench shall be tunneled under or around the roots by careful hand digging and without injury to the roots.
 - e. Protect roots over 1 $\frac{1}{2}$ " in diameter that are cut during construction. Coat surfaces with an acceptable coating and cover exposed roots with wet burlap.
 - f. When existing grade at the tree is below the new finished grade and fill not exceeding 16" is required, clean washed gravel graded from 1" to 2" in size shall be placed directly around the tree trunk. The gravel shall extend out from trunk on all sides a minimum of 18" and finish approximately 2" above the finished grade at the tree. Install gravel before any earth fill is placed. New earth shall not be left in contact with the trunks of any trees requiring fill.
 - g. Existing trees in areas where the new finished grade is to be lowered shall have regrading work done by hand to elevation indicated. Roots, as required, shall be cut cleanly 3" below finished grade and scars covered with tree paint.
3. Repair or replace damaged trees or vegetation to the satisfaction of the Commissioner.

3.3 CLEARING OF SITE

A. General

Remove all trees, vegetation, stumps, roots, foundation walls, improvements, rubbish, site debris, and all other materials and encumbrances of every name and nature visible to sight or found in excavating unless designated to remain or be abandoned. Remove abandoned improvements in part or whole that interfere with construction.

B. Clearing and Grubbing of Organic Matter.

1. Completely remove stumps, roots, and other organic matter. Grub roots to 18" below existing grade for new planted areas.
2. Grub inside dripline of trees designated to remain by hand methods only.

3. Fill depressions caused by removal in accordance with Section 312100.

C. Top Soil

1. If required, strip top soil to full depths encountered (minimum 6") or to levels indicated. Prevent top soil from mixing with subsoil.
2. If required, leave existing top soil in place within driplines of existing trees to remain.

D. Removal and Abandonment of Improvements

1. Remove all existing above and below grade improvements, unless they are designated to remain or be abandoned.
2. Remove portions of improvements to remain where necessary to facilitate new construction.
3. Abandonment or removal of existing water, gas, or sewer lines is part of the Scope of Work. Removal of portions of these abandoned lines to facilitate new construction is part of the Work of this Section or Section 312100.
4. Clean out, disinfect, and fill any existing wells, cesspools, or privy vaults designated to be abandoned.

E. Disposal

1. Remove and dispose of away from the premises all excavated material of every kind, in a legal manner and in conformance with the requirements of Section 312100.
2. Burning of material on the site is not permitted.

END OF SECTION

SECTION 312100

EARTHWORK

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Excavate for new construction, fill and backfill as required, prepare subgrades and place aggregate bases for slabs, walks, and pavements. Protect all adjoining properties and existing structures from damage. Perform Work in conjunction with Section 311000 and other related Sections.
- B. Implement the erosion and sediment control plan for use during construction activities such as excavation, grading, backfilling, etc and modify as needed dependant on actual activities. The plan, prepared primarily for combating erosion and sedimentation caused by rainfall and surface run-off, shall include control measures commonly used for compliance with the requirements set by the New York State Department of Environmental Conservation (DEC) such as silt fence, inlet protection, and a stabilized construction entrance.

1.02 RELATED SECTIONS

- A. Selective Removals & Demolition.....Section 022100
- B. Site Preparation.....Section 311000

1.03 NOT APPLICABLE

1.04 REFERENCES

References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

- A. American Society of Testing and Materials (ASTM) standards, latest editions.
 - D422 Standard Test Methods for Particle-Size Analysis of Soils.
 - D1556 Standard Test Method for Density of Soil in Place by the Sand-Cone Method.
 - D1557 Standard Test Method for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb (4.54-kg) Rammer and 18-in. (457mm) Drop.
 - D2167 Standard Test Method for Density and Unit Weight of Soil In-Place by the Rubber Balloon Method.

D2922 Standard Test Methods for Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

B. New York State Department of Environmental Conservation

STARS Memo #1 Petroleum-Contaminated Soil Guidance Policy entire part except Sections III and IV), last revised August 1992

CP-51: Soil Cleanup Guidance Policy, Issued 10/21/2010 (effective 12/3/2010)

DER-10 Technical Guidance for Site Investigation and Remediation, Issued 5/3/2010 (effective 6/18/2010)

C. New York Code of Rules and Regulations (NYCRR):

6 NYCRR Part 360, Solid Waste Management Facilities

6 NYCRR Part 364, Waste Transporter Permits

6 NYCRR Part 370, Hazardous Waste Management System – General

6 NYCRR Part 371, Identification and Listing of Hazardous Wastes

6 NYCRR Part 372, Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities

6 NYCRR Part 373, Hazardous Waste Management Facilities

6 NYCRR Part 375, Environmental Remediation Programs

D. United States Department of Transportation (USDOT):

49 CFR 172, Subpart C - Shipping Papers

49 CFR 172, Subpart D – Marking

49 CFR 172, Subpart E - Labeling

49 CFR 172, Subpart F - Placarding

49 CFR 172, Subpart G - Emergency Response Information

49 CFR 173, General Requirements for Shipments and Packagings

49 CFR 177, Carriage by Public Highway

- E. United States Environmental Protection Agency (USEPA):
 - 40 CFR Part 261, Identification and Listing of Hazardous Waste
 - 40 CFR Part 262, Standards Applicable to Generators of Hazardous Waste
 - 40 CFR Part 263, Standards Applicable to Transporters of Hazardous Waste
 - 40 CFR Part 264, Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
 - 40 CFR Part 265, Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- F. United States Department of Labor (USDOL), Occupational Safety and Health Administration (OSHA):
 - 29 CFR 1910, Occupational Safety and Health Standards
- G. All Applicable New York City Department of Environmental Protection (NYCDEP) Rules and Regulations
- H. All applicable New York City Department of Transportation (NYCDOT), Department of Sanitation (NYCDOS), Department of Buildings (NYCDOB), and Transit Owner (NYCTA) Rules and Regulations
- I. Phase I Environmental Site Assessment Report For 121 Plymouth Relocation to 424 Wythe Avenue New York City Department of Transportation, Paint Storage Facility, 424 Wythe Avenue Brooklyn, New York, 11211 August 22, 2012
DDC PROJECT NO. HWKF029B/WORK ORDER NO. 8422-LBA-3-7882
Prepared by: Louis Berger & Assoc., PC, 48 Wall Street, 16th Floor, New York, NY 10005
Attached as Appendix

1.05 DEFINITIONS

- A. Excavation

Excavation is considered unclassified and consists of removal of material encountered to contract level, stockpiling, testing, loading, handling, transporting and subsequent legal disposal of such.
- B. Improvements

Man-produced items such as concrete, brick, asphalt, piping, etc. Those items not naturally occurring.
- C. Non-Hazardous Excavated Material

Material that may include or contain mixtures of the following: soil (including, but not limited to, natural undisturbed material), debris, concrete and concrete products (including steel or fiberglass reinforcing rods that are embedded in the concrete), asphalt pavement, brick, glass, rock, municipal solid waste, refuse, and incidental ash. This material includes material defined in Title 6 New York Code of Rules and Regulations 360-7.1(b)(1)(i) and will exceed 6 NYCRR 375-6 Unrestricted Use and Restricted Use Soil Cleanup Objectives and NYSDEC CP-51: Soil Cleanup Guidance Supplemental Soil Cleanup Objectives.

All material excavated from the site is assumed to meet the definition of non-hazardous excavated material.

D. Petroleum-Contaminated Material

Material (soil, concrete, sediment, UST contents, fill, debris, etc.) that meets the NYSDEC STARS Memo #1 definition of petroleum-contaminated material from known source areas.

Petroleum-contaminated material shall be evidenced by the following observations and be from a known source area: producing higher than background responses on a portable vapor meter such as a photo ionization detector or flame ionization detector, petroleum-like odor, visual impacts (e.g., staining or discoloration), proximity to known releases from existing or historic petroleum storage tanks or systems, and exceed the soil cleanup levels for gasoline and/or fuel oil contaminated soil provided in the NYSDEC CP-51: Soil Cleanup Guidance. The determination as to whether the excavated material is petroleum-contaminated or is non-petroleum contaminated material will be made by analytical testing of representative material samples. All sampling shall be performed under the supervision of the Commissioner's Environmental consultant or its representative. The Contractor shall provide the Commissioner's Environmental consultant with qualitative and quantitative information, and the Environmental consultant shall make the final determination as to whether or not the material is petroleum-contaminated and the appropriate disposal.

E. Hazardous Waste

Material meeting the definition of a Resource Conservation and Recovery Act hazardous waste as defined in 40 CFR Part 261, New York State ECL Section 27-09 or 6 NYCRR Part 371.

F. Environmentally Clean Fill and Backfill

1. For fill and backfill proposed for use as cover material (landscaped areas of the site within 2 vertical feet of the final surface grade elevation), environmentally clean fill is defined as soil that has been tested utilizing methods which yield laboratory reporting limits that are below the regulatory comparison criteria and found to contain:
 - a. No detectable concentrations of volatile organic compounds;
 - b. No other organic compounds or inorganic analytes at concentrations above 6 NYCRR 375-6 Unrestricted Use Soil Cleanup Objectives; and

- c. No other organic compounds or inorganic analytes at concentrations above the lower of the NYSDEC CP-51: Soil Cleanup Guidance Residential Use, Protection of Ecological Resources, and Protection of Groundwater Supplemental Soil Cleanup Objectives.
 - d. For sites with no ecological resources (as described in CP-51, Section V.C.) the Supplemental Soil Cleanup Objectives for Ecological Resources shall not apply. The determination regarding whether ecological resources are present shall be made by the Environmental consultant of the Commissioner.
2. For fill and backfill proposed for use below cover material (as defined in the previous paragraph) and underneath areas with no potential for public contact (e.g., floor slabs and pavement), environmentally clean fill is defined as soil that has been tested utilizing methods which yield laboratory reporting limits that are below the regulatory comparison criteria and found to contain:
- a. No detectable concentrations of volatile organic compounds;
 - b. No other organic compounds or inorganic analytes at concentrations above the lower of DER-10 Technical Guidance for Site Investigation and Remediation, Appendix 5, "Allowable Constituent Levels for Imported Fill or Soil" Restricted Residential Use and Ecological Resources Soil Cleanup Objectives; and
 - c. No other organic compounds or inorganic analytes at concentrations above the lower of the NYSDEC CP-51: Soil Cleanup Guidance Residential Use, Protection of Ecological Resources, and Protection of Groundwater Supplemental Soil Cleanup Objectives.
 - d. For sites with no ecological resources (as described in CP-51, Section V.C.) the Soil Cleanup Objectives for Ecological Resources shall not apply. The determination regarding whether ecological resources are present shall be made by the Environmental consultant of the Commissioner.
3. The Contractor shall provide the Commissioner's Environmental consultant with laboratory data on material proposed for use as imported fill/backfill. The Contractor shall collect and analyze one representative sample of the material for each 500 cubic yards of fill/backfill proposed for use at the site. Each sample shall be analyzed for the complete list of 6 NYCRR Part 375 and NYSDEC CP-51 Supplemental Soil Cleanup Objectives parameters (as defined above) using acceptable laboratory reporting limits (below the regulatory comparison criteria) to demonstrate that the soil complies with the requirements for environmentally clean fill.
4. The results of laboratory analyses of samples representative of proposed environmentally clean fill shall be submitted in the format of the Environmental

consultant template tables attached to this Section. The Contractor shall strictly adhere to the format and content guidance of the Environmental consultant template tables.

1.06 QUALITY ASSURANCE

A. Qualifications

1. Company specializing in performing the Work of this Section shall have a minimum of 3 years experience and shall have worked on 3 projects of similar size.
2. Preparation of details of sheeting, shoring, bracing and underpinning shall be under the direct supervision of and bear the seal of a Licensed Professional Engineer of the State of New York experienced in the design of such work, who shall also be responsible for construction supervision of such.

B. Regulatory Requirements

1. Work of this Section shall conform to all requirements of the NYC Building Code and all applicable regulations and guidelines of all governmental authorities having jurisdiction, including, but not limited to, safety, health, and anti-pollution regulations. Where more stringent requirements than those contained in the Building Code or other applicable regulations are given in this Section, the requirements of this Section shall govern.
2. Work outside the street line shall conform to the requirements of the governmental authorities or utilities having jurisdiction (i.e. DOT, DEP, etc.). Where more stringent requirements than those provided by the applicable governmental Commissioner are given in this Section, the requirements of this Section shall govern.
3. Conform to the requirements of "Safety and Health Standards, Subpart P - Excavations, Trenching and Shoring" - OSHA.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Imported fill and aggregate materials to be used for project are to be stockpiled separately at the producer's facility and shall be accessible to inspection and quality control (QC) testing by the Commissioner.
- B. Stockpile material brought to the site prior to placing in order to allow for testing by the Commissioner's testing laboratory. Stockpile material in such a manner as to prevent erosion and dust. Provide silt curbs if necessary.
- C. Testing and certification of all imported environmentally clean fill and aggregate are the responsibilities of the Contractor.

1.08 PROJECT/SITE CONDITIONS

A. Existing Conditions

1. Site Information

- a. Obtain all Building Department data available on the lot and those adjacent lots affected or being affected by the project construction.
- b. The Commissioner makes no predictions or representations regarding the character or extent of soil, rock, or other subsurface conditions to be encountered during the work. The Contractor shall make its own deductions of the subsurface conditions that may affect the methods or cost of construction of the work hereunder, and agrees that it will make no claims for damages or compensations, except as are provided under the agreement should the Contractor find conditions during the progress of the work substantially different from those indicated on the geotechnical borings provided with the documents. Additional borings and other exploratory operations may be performed by the Contractor, at the Contractor's option and following the Commissioner's approval. No change in the Contract Sum will be authorized for such additional exploration undertaken by the Contractor.
- c. The subsurface information (borings or other subsurface explorations) contained in the Contract Documents were obtained primarily for use in preparing the foundation design and is included in the Contract Documents for the convenience of the Contractor.
- d. Soil and/or groundwater data given on borings or other subsurface explorations supplied by the Commissioner are not intended as warranties of accuracy or continuity between soil stratum. Contractor is responsible for interpretations or conclusions drawn therefrom. Additionally, depth to water measurements in environmental investigation reports shall not be relied upon for bidding purposes.

2. Existing Utilities

- a. Locate existing underground utilities:
 - 1) Provide adequate means of support and protection for utilities to remain during Work.
 - 2) Demolish and remove underground utilities designated to be removed. Coordinate with utility companies for shut-off services if lines are active.
- b. Consult immediately with the utility Commissioner for directions should uncharted or incorrectly charted piping or other utilities be encountered

during excavation. Cooperate with the utility Owner, and Owners of lots serviced by the utilities in keeping their respective services and facilities in operation. Repair damaged utilities to the satisfaction of the Utility Owner.

- c. Do not interrupt existing utilities serving facilities occupied and used by the Owner or others during occupied hours, except when permitted in writing by the Owner and the affected lot Owners, and only after acceptable temporary utility service has been provided. Do not proceed with interruption of services without providing a minimum of 48 hours notice to the affected parties and receiving their written approval.
- d. Coordinate all Work with the Work specified under the Contract Documents.

B. Coordination

Examine drawings to determine sequence of operations, and relation to work of other trades. Start of work will signify acceptance of field conditions and will acknowledge coordination with other trades.

C. Foundations and Other Changes

The Commissioner reserves the right to change the design of the foundation due to unforeseen soil conditions. If the foundation design is so changed, the contract price will be adjusted as set forth in the Contract Documents.

1.9 SEQUENCING AND SCHEDULING

- A. Perform work in such a manner to ensure a minimum interference with roads, walks, adjacent properties, and facilities to remain open. Do not close or obstruct these items without obtaining permits from the agencies having jurisdiction or the permission of the adjacent Owners.
- B. There shall be no petroleum-contaminated material and/or hazardous waste excavation and handling activities performed when the project site is in use by the Owner or others during occupied hours, except when permitted in writing by the Commissioner.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Restricted Excavated Material

Remove all debris not explicitly designated to be salvaged (to remain) from improvements and soil excavated during construction from premises and legally dispose of away from premises as part of the base bid. Any environmentally clean fill (as defined in paragraph

1.05F and tested to meet such requirement) meeting the gradation requirements of Paragraph B below may be reused on the site pending credit to the Commissioner.

B. Fill and Backfill

Only environmentally clean fill (as defined in paragraph 1.05F) shall be used as fill and backfill. All fill and backfill shall be material classified as controlled fill by the New York City Building Code. Composition shall consist of angular sands and gravels. Flat structured material such as mica (the main component of "mole" rock) falling into the acceptable gradation or other material affecting the permeability and structural characteristics of the sand material shall be no more than .4% of the total material. Material shall not contain salts or foreign materials of any kind and the material shall show a percentage of wear by the Los Angeles wear test (ASTM C131) of not more than 35%.

These fill materials shall contain no particles exceeding 4" in the largest dimension. No more than 30% of the material by weight shall be retained on a 3/4" sieve. Of the material passing the No. 4 sieve, no more than 10% shall pass the No. 200 sieve by weight. The Contractor shall provide the Commissioner with laboratory data on material proposed for use as fill/backfill. Samples shall be collected from imported material and material proposed for reuse on-site. The Contractor shall collect and analyze one representative sample of each material for every 500 cubic yards of imported fill/backfill brought to the site or material proposed for reuse on-site for the complete list of 6 NYCRR Part 375 and NYSDEC CP-51 Supplemental Soil Cleanup Objectives Parameters as defined in paragraph 1.05F.

C. Aggregate Base

1. Aggregate base course under pavements, driveways, and slabs shall be composed of crushed ledge rock (blue stone), roughly cubical or pyramidal in shape, and sand meeting the gradation and soundness requirements of New York State DOT, Item 3.04.02, Type 2. Material shall be uniform in quality and free of wood, loam, clay, dirt, roots, bark, and any other extraneous material. Material shall not contain salts or foreign materials of any kind. The aggregate shall be produced from material showing a percentage of wear by the Los Angeles wear test (ASTM C131) of not more than 35%.

2. Stone shall have the following gradation:

Sieve	Percent Passing by Weight
2"	100
1/4"	25-60
No. 40	5-40
No. 200	0-10

D. Crushed Stone

1. Crushed stone, to be used under interior slabs on grade and backfill at narrow excavations, shall be composed of crushed ledge rock (blue stone), roughly cubical or pyramidal in shape, with a gradation conforming to ASTM C33 No.

57 stone. Material shall be uniform in quality and free of wood, loam, clay, dirt, roots, bark, and any other extraneous material. Material shall not contain salts or foreign materials of any kind. The aggregate shall be produced from material showing a percentage of wear by the Los Angeles wear test (ASTM C131) of not more than 35%.

2. Stone shall have the following gradation:

Sieve	Percent Passing by Weight
1 $\frac{1}{2}$ "	100
1"	95-100
1/2"	25-60
No. 4	0-15
No. 8	0-5

E. Broken Stone Ballast

1. Broken stone ballast, to be used to stabilize poor soils, shall be composed of crushed ledge rock (blue stone), roughly cubical or pyramidal in shape, with a gradation conforming to ASTM C33 No. 3 stone. Material shall be uniform in quality and free of wood, loam, clay, dirt, roots, bark, and any other extraneous material. Material shall not contain salts or foreign materials of any kind. The aggregate shall be produced from material showing a percentage of wear by the Los Angeles wear test (ASTM C131) of not more than 35%.
2. Stone shall have the following gradation:

Sieve Size	Percent Passing by Weight
2 $\frac{1}{2}$ "	100
2"	90-100
1 $\frac{1}{2}$ "	35-70
1"	0-15
1/2"	0-5

F. Recycled Concrete Aggregate

1. As an option, recycled concrete aggregate may be used instead of ledge rock for aggregate base, crushed stone, and broken stone ballast (meeting the indicated gradations for each), depending on the soundness of aggregates, which are at the Engineer of Record's option. The material must be clean, with no deleterious material visible (wood, brick, metal, or other friable material) and meet the following criteria:
- a. Material shall consist of at least 99% by weight of Portland cement concrete or ledge rock.

- b. Material making up the remaining 1% shall be as follows:
 - 1) Wood - 0.1% maximum
 - 2) Brick, mica schist, metal, or other friable stone material - 0.4% maximum
 - 3) Asphaltic Concrete - 1% maximum
- c. Material shall be environmentally clean (as defined in Paragraph 1.05F).

G. Silt Fence

- 1. Filter Cloth:
 - a. Mirafi 100X
 - b. Stabilinka T140N
- 2. Woven Wire Fence: Minimum 15 gauge, maximum 6" mesh spacing
- 3. Fence Posts:
 - a. Steel either "T" or "U" type or 2"X4" Hardwood

H. Geotextile Filter Fabric

Nonwoven polypropylene fabric meeting the physical characteristics of the following products:

- 1. ProPex 4510 by Amoco Fabrics and Fibers Company.
- 2. 1100N by Mirafi Inc.

2.02 EQUIPMENT

- A. Provide proper compaction equipment to properly compact subgrade, fill and backfill, aggregate base, crushed stone and broken stone base. Subgrade compaction requirements are indicated in those sections. Employ a Licensed Professional Engineer to determine soil type and which equipment will give the proper compaction.

2.03 SOURCE QUALITY CONTROL

- A. Tests

The Commissioner's Testing Laboratory will perform the following laboratory tests:

1. Sieve Analysis: Performed in accordance with ASTM D422 on submitted fill samples to verify material meets gradation requirements. In addition, recycled concrete aggregate will be examined for materials conformance.
2. Moisture Density Curve: Optimum moisture content obtained from submitted fill samples, tested in accordance with ASTM D1557.

B. Inspection

1. Testing Laboratory

- a. The Commissioner will engage an approved Testing Laboratory or Special Inspection Agency to perform laboratory tests and field compaction testing on the fill/backfill materials and subgrade.
- b. The Laboratory will be responsible to and under the supervision of a Special Inspector.

2. Special Inspection

The Commissioner will assign, under the requirements as defined in Chapter 1 Title 28 of the Administrative Code and BC 1704.7 of the 2008 NYC Building Code, a Special Inspector to supervise the testing of the controlled filling operations and approval of the subgrade bearing capacity, as well as and inspection of underpinning and shoring operations as per BC 1704.9 and 1704.19 of the 2008 NYC Building Code.

3. Contractor's Responsibility

Inspections and testing performed by the Commissioner's agent(s) shall not relieve the Contractor of responsibility for performing all other testing and inspection specified herein or otherwise necessary to meet the quality control and quality assurance requirements of this Section.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verification of Conditions

Verify existing site conditions match those of the survey or pre-bid inspections. Notify the Commissioner in writing prior to commencement of Work of any discrepancies.

B. Preparation

1. Before starting any excavation work for new construction, ascertain the exact locations of all existing underground drain lines, piping, and conduits. Consult with the Mechanical Trades.

2. At location where any of the above services interfere with the excavation work, notify the Commissioner and the Mechanical Trade under whose jurisdiction such work falls before continuing with any more excavation.

3.02 PREPARATION AND PROTECTION

A. Condition Survey

1. General: The Contractor shall perform a condition survey of the adjoining properties and existing project site prior to beginning excavation.
2. Photographs: Take photographs of the building walls of the adjoining properties and existing site so that the surfaces may be examined during construction and compared with the pre-work condition. If any cracks or other stress signs are exhibited by the buildings, halt operations until corrective action has been provided and is acceptable to the Commissioner.
3. Survey
 - a. Retain a Licensed Surveyor to provide a survey of existing conditions of adjoining properties and existing project site.
 - b. Survey adjacent structures and improvements, establishing exact elevations at fixed points to act as benchmarks.
 - c. Clearly identify benchmarks and record existing elevations. Locate datum level used to establish benchmark elevations sufficiently distant so as not to be affected by movement resulting from excavation operations.
 - d. All work shall be laid out giving all points, lines, and levels from established points on the Drawings. Elevations shall be verified from existing benchmarks by the Surveyor.
 - e. During excavation, resurvey benchmarks weekly, employing a Licensed Land Surveyor or Licensed Professional Engineer. Maintain accurate log of surveyed elevations for comparison with original elevations.
 - f. Should benchmark readings indicate displacement, halt operations until corrective action has been provided and is acceptable to the Commissioner.

B. Shoring, Sheeting, Bracing, and Underpinning

1. General

- a. Inspect site, examine existing conditions and make all necessary preparations for the safe and proper sequence of work.

- b. Properly guard and protect excavations so as to prevent them from becoming dangerous to person or property.
- c. Properly slope sides of excavation or provide shoring, sheeting and bracing to prevent caving, erosion, or gulying of sides of excavations. The sides of all excavations that are 5 feet or greater in depth measured from adjacent ground surface to the deepest point, shall be protected to prevent the sides from caving in. Alternatively, excavation sides may be sloped not steeper than 45 degrees.
- d. Brace, shore, and protect existing structures when excavations are made adjacent to the existing structures or within a distance that they will be affected by the excavation. Underpin adjacent structures when excavations are carried to a depth that will require it by the NYC Building Code or when indicated on Drawings.
- e. Maintain sides and slope of excavation in safe condition until backfilling or other work is complete. Maintain shoring and bracing in place till completion of work.
- f. Provide materials for work in good serviceable order.
- g. All shoring, bracing, sheet piling, etc. is to be removed upon completion of the work where they are installed, including any portion thereof, outside of street and lot lines, unless allowed to remain by adjoining property Owner. Within the lot, and where permitted by adjoining property Owner, remove all wood and cut steel elements at a minimum to 4 feet below grade. Where they interfere with new work and utilities, remove elements in their entirety.

2. Inspection and Code Requirements

- a. Sheet piling, sheeting, shoring, bracing, and underpinning for protection of excavations and protection of adjacent structures and the public is the responsibility of the Contractor and shall comply with the requirements of the 2008 NYC Building Code; Chapter 33, Section BC 3309 Protection of Adjoining Property.
- b. The most stringent requirements of the Building Code, Contract Drawings, Specifications, or any authorities having jurisdiction shall govern this Work.
- c. Coordinate Work of this Section with Work of all other Divisions so as to properly, and completely, install all Work as drawn or specified.
- d. The Contractor shall engage the services of a third party Registered Professional Engineer (not a direct employee) to prepare details of

underpinning, cofferdams, caissons, bracing, sheeting, sheet piling, shoring, party wall stabilization, and other construction required for protection of excavations and support of adjacent properties or buildings. These drawings shall be submitted to the Engineer of Record for general review, which does not relieve the Contractor's Engineer of responsibility for the adequacy of the design.

- e. The Contractor's Engineer shall file Form PW-1 with the Building Department, thereby becoming the Engineer of Record for such protection work and is responsible for stability of all slopes and bracing and underpinning and for preparation of all design and shop drawings and their approval by the Building Department. The Commissioner will engage a Special Inspection Agency to perform the Special Inspections described in Sections BC 1704.9.1, BC 1704.19, and BC 3304.4.1 of the 2008 NYC Building Code for such work.
- f. No earthwork within the property line shall commence unless Contractor or permit holder notifies the Department of Buildings via phone or electronically within 24 to 48 hours prior to the commencement of such work. The Contractor shall preserve and protect from damage any adjoining structures.
- g. When an excavation to a depth of 5 to 10 feet is to be made within 10 feet of an adjacent building or over 10 feet anywhere on the site, the Contractor shall provide written notice to the Commissioner of the adjacent building not less than 10 days prior to the starting of excavation. The written notice shall describe the work, timeframe and schedule and contact information of the contractor and of the department. No excavation shall commence until the contractor has documented the existing conditions of all adjacent buildings in a pre-construction survey.
- h. Obtain approval and permit from the NYC Department of Building or NYCTA prior to commencement of any such excavation activity, as building is within 200 feet from a TA structure.

C. Water Control - Dewatering

- 1. Provide for the pumping and removal of all water that is encountered on the Site at any location, at any and all times, during the course of construction of the project and until the acceptance of the building. Prevent surface water and subsurface or groundwater from flowing into excavations and from flooding the project site and surrounding area in order to keep the site and foundation subgrades dry.
- 2. No additional payment shall be made to the Contractor for pumping and removal of water required for installation of Work at the Contract level. This pumping and removal applies to all water from any source whatsoever, and includes subsurface or ground water, seepage, leakage, drainage, trapped water, rain or snow,

overflows, etc., except for unforeseen water main breaks not caused by the Contractor's operations.

3. Furnish and operate all pumping equipment necessary to protect against damage to all structural installations subjected to hydrostatic pressure. Consult geotechnical borings for water levels. The groundwater table shall be assumed to be at least 3 feet higher than the highest level indicated on the borings as ground water levels will fluctuate.
4. Do not use sump pumps furnished for the new building for dewatering purposes.
5. During excavation for and placing of pile caps, footings, slabs, etc., the Contractor, at own expense, shall maintain ground water to a depth below the bottoms of the caps, footings, slabs, etc. that will prevent softening of foundation bottoms, undercutting of footings, and soil changes detrimental to stability of subgrades and foundations.
6. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from the excavations, including all surface water. Continue ground water dewatering until the caps, footings, etc. are backfilled and till the discontinuation of pumping will not endanger any construction as determined by the Commissioner. The structure shall be of adequate dead weight to counterbalance the uplift force of the water before discontinuation of dewatering. Obtain written approval from the Commissioner before subjecting the structure to hydrostatic pressure. Such approval shall not relieve the Contractor of responsibility for providing and maintaining the structural integrity of the structure. Remove all water from the building area.
7. Engage a Professional Engineer licensed in the state of New York knowledgeable in dewatering systems to design the dewatering system. The Engineer shall submit an Engineer's report to the Commissioner for record keeping. Include draw-down curves and other such information. Dewatering operation shall be performed with supervisory personnel who have had experience in dewatering work. Maintain adequate supervision and control to ensure that stability of excavated and constructed slopes and trenches are not adversely affected by water; erosion is controlled; flooding of excavations or trenches, or damage to structures does not occur.
8. Install and operate dewatering system or systems in such a manner as to avoid the movement of fines or loss of ground from below the bearing levels and so as not to influence the stability of surrounding areas. Whatever method employed by the Contractor shall include the facilities needed to eliminate loss of ground.
9. The Contractor shall utilize methods that minimize drawdown and pumping rates, and comply with dewatering permit.

10. The Contractor shall be responsible for all remedial action due to problems arising from improper/illegal dewatering. The Contractor shall obtain all permits from governing regulatory agencies, including but not limited to New York City Department of Environmental Protection (DEP) and New York State Department of Environmental Conservation (DEC), for dewatering and the off-site disposal of water.
11. Dispose of water from site in such manner as will not cause injury to the public health, nor to public or private property, nor to the work completed or in progress, nor to the surface of the streets, nor cause any interference with the use of the same by the public. Contaminated water generated from dewatering activities shall not be disposed of on site. At a minimum, a fractionation tank, oil/water separator, and granular activated carbon adsorption system shall be provided for treatment of contaminated water. Prevent silting of storm sewers by using settling tanks or other devices approved by the DEP. Clean sewer lines that are to be used for disposal of water and waste during construction. The Contractor is responsible for obtaining all necessary permits for disposal of liquids generated during dewatering operations and for the pretreatment of all liquids as required for disposal in accordance with all applicable rules and regulations.
12. Place all dewatering and discharge pipes and hoses that cross-traveled roadways in such a manner so as to eliminate any disruption of traffic flow. If so ordered by the Commissioner, place the pipe and hoses in shallow trenches that shall then be plated over. Firmly secure all plates so as to eliminate any possible shift or movement.
13. Dewatering by means of well points or deep wells will not be allowed in the Boroughs of Brooklyn or Queens where the rate of pumping exceeds 45 gallons per minute unless the appropriate permit has been secured from the New York State Department of Environmental Conservation. This shall be done by the Contractor at own expense.

D. Frost Protection

1. Furnish all facilities and materials needed to prevent the earth and/or rock at bottom of excavation from becoming frozen or unsuitable to receive the footings and/or pile caps.
2. Do not carry excavation to Contract levels during freezing weather without providing complete protection against freezing of the subgrade as hereinafter specified. Provide complete protection against freezing if freezing weather sets in after completion of the excavation to Contract levels. This protection shall include adequate heating facilities and coverage of the area to maintain temperatures above freezing until footings and/or pile caps have been concreted and backfilled. Where backfilling results in less than four feet of cover for the bottom of the footing and/or pile cap, protect subgrade against freezing.

3. When excavations for footings, piers or pile caps have been brought to the bottom elevations indicated on the Drawings and the bottoms of these excavations become frozen or otherwise unsuitable in the opinion of the Special Inspector because of inadequate protection by the Contractor, these excavations shall be carried to lower depths sufficient to provide stable bearings as determined by the Special Inspector and subject to approval by the Engineer of Record and without additional cost to the Commissioner.

E. Use of Explosives

The use of explosives shall be in strict conformance with regulations governing such use by New York City Department of Buildings and other authorities having jurisdiction. Explosives may not be used without the written approval of the Commissioner.

F. Erosion & Sediment Control

Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways. The Contractor shall formulate and carry out the Steps identified in a balanced erosion and sedimentation control plan when performing any land disturbance. Measures employed for limiting soil erosion and off-site pollution caused by sedimentation shall include, but not be limited to, vegetative cover and/or sediment control devices.

1. Vegetative Control Measure: Vegetation over an area slated for undergoing excavation, backfilling, or trenching is the best means for containing soil loss. Seeds or mulch shall be spread over a disturbed area that will remain open for a long period before the next construction activity begins. Criteria for selecting seed types for permanent vegetation shall be based upon plant adaptability to ground conditions, maintenance requirements or lack thereof.
 - a. Quick stabilization of sloped and/or disturbed ground shall be performed to ensure the establishment of planted seeds. Grading and stabilization over a large construction site shall not be delayed, pending the completion of all activities for the project. If necessary, soil stabilization or grading efforts shall be phased according to a phasing plan.
 - b. Existing trees, shrubs, and other ground cover is a buffer to soil erosion and they shall be protected. During construction, the Contractor shall exercise great care to preclude damages to existing vegetation that might be caused by construction equipment. Construct barriers made of wood or steel to surround trees and other vegetation.
 - c. Workers at the construction site shall be cognizant of the erosion and sediment plan and shall be involved in guarding against damages to vegetated areas caused by humans. Use tape, signs and other methods listed in the New York Guidelines for Urban Erosion and Sediment Control to highlight seeded areas.

2. Sediment Control Devices

Displaced soil particles produced by rainfall or surface run-off can have a harmful effect on the environment and create clogging problems in the drainage system. If vegetative cover is not appropriate, a structural sediment control device shall be employed to guard off against damages caused by sedimentation.

Commonly used sediment control devices that are also acceptable under the New York Guidelines for Urban Erosion and Sediment Control include:

a. Stabilized Construction Entrance

At entrances and exit points to the construction site, provide a stabilized pad of aggregates for capturing mud or sediment that may be transported by vehicular traffic. Use 2" stone or reclaimed concrete equivalent that is well compacted over the sub-grade to maintain the dimensions (width, length and depth) of the site entrances and exits. Build stabilized construction entrances having at a minimum, 12" thick stone or layered recycled concrete material with 12" depth. Replace aggregates on an as-needed basis after rainfall events.

b. Silt Fence

Perimeter of disturbed area shall be fenced-off using a geotextile fabric (filter cloth) similar to Mirafi 100X to minimize runoff velocity and limit damages caused by carried over sediment. Construction of silt fence shall conform to the following recommendations from the U.S Department of Agriculture:

- 1) Woven wire fence (14 ½ gauge and max. 6" mesh spacing) shall be fastened securely to supporting posts using wire ties or staples. Posts shall be 36" long and driven into the ground at least 18".
- 2) Sedimentation filtering fabric similar to Mirafi 100X (geotextile material) or an approved equal shall be fastened securely to woven wire fence with ties spaced every 24" at top and mid section.
- 3) When two (2) sections of the filtering fabric adjoin each other, they shall be overlapped by six (6) inches and folded.

c. Storm Drain Inlet Protection

Keep silting of underground storm drainage piping from occurring and contain off-site pollution caused by sediment laden run-off using a permeable barrier around drain inlets. Typical drain inlets protection to be utilized include: (1) stone & block drop inlet protection and (2) fabric drop inlet protection

1) Stone & Block Drop Inlet Protection

Build barrier made of blocks and stones that reach at least one (1) foot high in front of the storm drain inlet. The block protection shall be constructed in a manner that allows water to drain through a few block openings. Use clean stone or gravel 1/2- 3/4 inch in diameter placed 2 inches below the top of the block on a 2:1 slope or flatter as recommended by the U.S Department of Agriculture.

2) Fabric Drop Inlet Protection

Another means for preventing clogging of the drainage system caused by deposited sediment is to build a protective barrier made of filter fabric. Top of the barrier shall be so arranged as to enable overflow to drain into the drainage structure. Supporting stakes for the filtering fabric are necessary; they shall measure 3 feet long and surround the drainage structure in all sides. Stakes materials shall be 2" x 4" wood or equivalent metal. Burlap material may be used temporarily as a filtering fabric.

3. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
5. Document measures by digital photographs and logs of inspections.

G. Workability of Excavation Subgrade

1. Take all steps necessary to prepare or improve existing conditions for proposed foundation work, including general excavation throughout the project site.
2. Properly grade site and perform operations to avoid disturbing the existing subgrade and any intermediate subgrade.
3. If subgrade conditions are disturbed that prevent earthwork operations or safe operation of foundation installation equipment, the Contractor shall take steps to improve subgrade conditions at own expense. Many types of soils are sensitive to disturbances such as water saturation or construction traffic and become unworkable.

3.03 EXCAVATION - GENERAL

- A. Excavate all materials of every kind to the Contract elevations and dimensions required by the Drawings and Specifications and any additional material required for safe slope of excavation, regardless of the character of materials and obstructions encountered.

- B. No additional compensation will be allowed for excavation or foundation work carried below the levels shown on Drawings unless same has been authorized in writing by the Commissioner. Contractor is responsible for all remedial work due to unauthorized excavation.
- C. Level off and grade bottoms of excavations to receive footings, foundations, floors, etc.
- D. For footings and foundations, machine excavation is allowed to within one foot of final subgrade. Excavate balance by hand. Excavate to a tolerance of plus or minus 0.10' and extend a sufficient distance from the structures to permit placing and removal of formwork, installation of services, other construction, and for inspection.
- E. For pavements and slabs on grade, excavate to depths required for installation of aggregate base or pavement as specified herein or shown on Drawings.
- F. Excavation of pile caps as described in the Contract Documents.
- G. All excavations for foundations and footings must be completed and the underlying soil or rock material approved by the Special Inspector before concrete foundation work is started. The Contractor may, with the written approval of the Commissioner, proceed with concrete foundation work before the entire building excavation has been completed. In addition, excavation for foundations and footings shall conform to Section BC 3304 of the 2008 NYC Building Code unless more severe requirements are given in this Section.
- H. Remove all excavated material from the site and legally dispose of away from the premises in accordance with the requirements specified in this section. Burning of material on the site is not permitted.
- I. Trenching for pipes and conduits is described under "Excavation of Trenches."
- J. Exposed Ground Surfaces/Landscaped Areas:
 - 1. At seeded, sodded, or ground cover areas, excavate to 24" below finished grade. If rock occurs within 18" of finished grade, all rock shall be removed to a depth of 18". Where existing stone, concrete, brick, or other masonry occurs at these areas, such material shall be excavated and removed to a minimum depth of 24" from finished grade.
 - 2. In garden areas or where shrubbery/trees are required, including tree pits, excavate to 24" below finished grade, but if rock occurs within 36" of finished grade, all rock to a depth of 36" shall be removed. Where existing stone, concrete, brick, or other masonry occurs at these areas, such material shall be excavated and removed to a minimum depth of 24" from finished grade.
 - 3. For additional excavation requirements of tree pits below the general excavation levels called for under this article, refer to Section 02900.

3.04 EXCAVATION - ROCK

- A. Excavate rock where encountered by blasting or other means necessary.
- B. Excavation by blasting shall be permitted only when specifically approved by the Commissioner and by all authorities having jurisdiction, including the Explosive Unit of the Bureau of Fire Prevention of the New York City Fire Department. All irregularities of surface on lines of walls, or under columns, piers or footings shall be carefully examined and all loose or shaken rock shall be removed down to a solid horizontal bearing surface.
- C. Blasting shall be done by persons skilled in such work. Exercise care in the handling and storing of dynamite and other explosives as he shall be held responsible for any injury to persons or damage to property which may occur as a result of premature explosions, overcharges of explosives, failure to provide proper coverings, or the omission of any precautions in connection with the performance of the work that is required by the NYC Building Code or other city bureaus having jurisdiction over this Work.
- D. Place monitoring devices on all buildings adjacent to the site and as directed by governing authorities to ensure damage to property does not occur. Halt operations if damage is noted or if blasting limits set by the Fire Department are exceeded. Perform all remedial work required due to blasting.

3.05 EXCAVATION OF TRENCHES

A. General

- 1. Trenching for trench drains, pipes, and conduits shall be accomplished with an appropriate trenching machine, except hand trenching shall be used where machine may damage existing underground pipe, conduit, or other objects to remain.
- 2. Excavate trenches to elevations required to install pipes and conduits at required inverts, as required by governing regulatory agencies, as shown on Drawings, as specified herein, and to allow encasement in concrete when indicated on Drawings.
- 3. Remove loose material and proofroll trench subgrade with a vibratory plate or jumping compactor (a minimum of 6 passes, 3 in each direction, if material is fill) in the presence of the Special Inspector. Remove any soft spots and replace with controlled fill, compacting material in 4" lifts to 92% (95% in vehicular areas) of maximum dry density by ASTM D1557 at optimum moisture content.
- 4. Prevent trench bottoms from freezing until items are placed and the trench backfilled.
- 5. Fill trench with concrete to a depth even with the bottom of footings when excavations pass within 18" of the footings at a depth below the footing. Continue concrete 2'-0" each side of the footing.

6. Work outside the street line is governed by the regulatory Commissioner having jurisdiction for such.
7. Coordinate locations and excavation depths with work described in the Contract Documents.

B. Sectional Trench Drains (if required)

1. Excavate trench to width and depth sufficient to provide for concrete cover as indicated on Drawings and to permit workmen to properly install the sectional trench drain.
2. Carefully construct and grade the bottom of the trench to approximate the slope of the bottom of the trench drain. The drain bottom shall have solid bearing along its entire length and be true to line and grade when completed.
3. Slope the edges of the excavations as required to provide a smooth transition to the slab or asphalt subgrade.
4. Make excavations about the centerline of all the proposed drainage runs.
5. Prepare deeper excavations for the catch basins.
6. Compact subgrade as indicated in paragraph A above.
7. Trenches shall be dry when trench bottom is prepared and when bedding concrete is placed.

C. Piping (Drainage, water, oil, gas, etc.)

1. Excavate trenches to depths required and to width sufficient to permit workmen to properly install the pipe, but in no case shall there be less than 6" clearance on each side of the pipe.
2. Carefully grade and construct the bottom of the trenches so that the pipe between the joints shall have solid bearing along its entire length and be true to line and grade when in final position.
 - a. Where concrete encasement is required by Drawings, provide sufficient depth to accommodate concrete.
 - b. Where trench bottom is rock, provide an additional 6" of depth to allow for sand cushion.
3. Compact subgrade as indicated in paragraph A above.

4. The bottom of the trenches, where required, shall be hollowed for each hub (bell holes) to provide full-length barrel support of the pipe and to prevent loading at the bells.
5. Keep trenches dry during pipe laying. At water pipe, line trenches with non-woven geotextile filter fabric immediately before pipe laying to prevent soil contamination in the pipe.

D. Conduits

1. Excavate trenches to depths required and to width sufficient to permit workmen to properly install the conduit, but in no case shall there be less than 3" clearance on each side of the conduit. The depth shall not be less than that required to leave a space of not less than 20" between the highest point of the conduits and the finished grade.
2. Carefully grade and construct the bottom of trenches so that the conduits shall have solid bearing along their entire length and be true to line and grade when in final position.
3. Compact subgrade as indicated in paragraph A above.
4. Keep trenches dry during conduit laying.

3.06 DISPOSAL OF EXCAVATED MATERIAL

A. Description of Work

1. Deliver material excavated from the site to an approved off-site disposal facility identified in the Excavated Material Disposal Plan. The Excavated Material Disposal Plan must be prepared in accordance with paragraph B of this article and must be and approved by the Commissioner's Environmental consultant prior to the start of excavation. No claims of delay shall be permitted due to the Contractor's failure to obtain approval of the Excavated Material Disposal Plan from the Environmental consultant. All required sampling and testing are part of the Work and are to be done by the Contractor as part of this project at no additional cost to the Commissioner. The resulting sampling data is to be submitted to the Commissioner as an addendum to the Excavated Material Disposal Plan.
2. Non-Hazardous Excavated Material, as defined in Paragraph 1.05C, that has been excavated as part of the construction project, shall be transported to an off-site disposal facility approved by the Commissioner's Environmental consultant. All petroleum-contaminated material, as defined in Paragraph 1.05D, if discovered, shall be transported to an off-site disposal facility permitted to receive petroleum-contaminated material from known source areas. All hazardous waste, as defined in Paragraph 1.05E, if discovered, shall be transported to an off-site disposal facility approved by the Commissioner's Environmental consultant.

B. Excavated Material Disposal Plan

An Excavated Material Disposal Plan shall be prepared by the Contractor and approved by the Commissioner's Environmental consultant for non-hazardous excavated material at a minimum of four weeks prior to the start of excavation. A separate Excavated Material Disposal Plan for any additional categories of material, as defined in Paragraphs 1.05D and E, encountered during the excavation, shall be prepared by the Contractor and approved by Commissioner's Environmental consultant prior to removing the material off-site. The Excavated Material Disposal Plan shall be prepared and signed by a Certified Hazardous Materials Manager approved by the Institute of Hazardous Materials Management in Rockville, Maryland, or Qualified Environmental Professional, approved by the Institute of Professional Environmental Practice, Pittsburgh, Pennsylvania, or similar board-certified professions. The Excavated Material Disposal Plan shall be prepared in accordance with the Environmental consultant template attached to this Section. The Contractor shall strictly adhere to the format and content guidance of the Environmental consultant template. In the Excavated Material Disposal Plan, the Contractor shall, at a minimum:

1. Indicate how buried utilities (e.g. electric, gas, water, sewers, telephone, etc.) will be located and provide copies of the resulting information to the Commissioner.
2. Confirm appropriate contact will be made with underground facilities protective organizations –in accordance with applicable laws and regulations.
3. Provide a to-scale figure indicating the quantities of excavated material and proposed locations where discrete soil samples shall be collected and which discrete soil samples shall make up each composite sample.
4. Define the acceptance and waste characterization requirements of each proposed disposal facility and define the sampling rates (e.g., one composite sample / 500 cubic yards) along with the estimated quantity of material to be disposed for each proposed disposal facility.
5. Define the sampling methods (e.g. backhoe, Geoprobe[®], drill rig, etc.) to be used.
6. Define the analytical parameters and analytical methods for analyzing all samples.
7. Define how chain-of-custody will be maintained and recorded.
8. Define how the QA/QC of the Excavated Material Disposal Plan will be maintained and how it will be subject to audit by both the Commissioner and the Contractor.
9. Provide a listing, including company name, name of Commissioner, and address of facility, of the off-site disposal facility(ies) meeting the requirements listed in Item A above, for the specific material to be disposed and a copy of each facility's permit (NYSDEC and/or equivalent out of state) and a complete listing of the facility's pre-acceptance testing and disposal requirements for the specific material.

10. Health and Safety Plan for handling the material to be excavated.
11. Provide a listing, including company name and address, of proposed waste haulers. Provide for each proposed waste hauler a copy of the valid 6 NYCRR 364 Waste Transporter Permit. Contractor shall furnish a list approved by the Commissioner that identifies the make, model, truck number and registration plate number of each of the trucks that shall transport the material to the designated facility(ies). All proposed destination facilities, listed as required by 9 above, shall be listed in the waste transporter permits provided.
12. If applicable, provide a completed waste profile form for the proposed facility(ies) along with a cover letter on Contractor letterhead certifying that the Contractor has provided the disposal facility with the analytical data. Contractor must verify in writing that full disclosure of soil characterization has been provided to the disposal facility.

C. Material Suitability and Construction Methods:

1. All material excavated from the site shall be transported by the Contractor to an approved off-site designated facility. Environmentally clean material meeting controlled fill gradation may be reused pending credit to the Commissioner. When the Commissioner orders the Contractor to excavate during other than normal construction hours, the material shall be stockpiled on the site until the material can be delivered to the facility identified in the approved Excavated Material Disposal Plan. Stockpiled excavated soil shall be covered with heavy duty tarps, secured with sand bags. If there is no room on the site for stockpiling, provide containers for stockpiling or other means.
2. Provide all labor, equipment and material necessary to excavate, stockpile, load, handle, and transport excavated material from the site to the facility(ies) designated in the approved Excavated Material Disposal Plan, as described herein, and conditioned on the following:
 - a. Comply with all rules and regulations of the body governing the facility(ies) listed in the approved Excavated Material Disposal Plan.
 - b. Any sorting of the excavated material required by the designated facility(ies) is part of the Work and is the responsibility of the Contractor.
 - c. Prior to commencing off-site disposal, the Contractor shall furnish a list approved by the Commissioner that identifies the make, model, truck number and registration plate number of each of the trucks that shall transport the material to the designated facility(ies) defined in the Excavated Material Disposal Plan. Any change of trucks, or additional trucks, shall have prior approval at least 24 hours in advance. The Contractor shall also furnish a list, approved by the Commissioner, of the water-level volume of each truck, regardless of whether or not the truck possesses a DOT truck permit number indicating truck volume.

- d. The Contractor agrees and warrants that each load of such material has originated only from the Project Site described in this Project and has not been mixed with material from any other site.
- e. On a daily basis the Contractor shall provide originals of all dump tickets to the Commissioner.

D. Excavated Material

- 1. The excavated material may consist of one or more of the following: non-hazardous excavated material, petroleum-contaminated material and/or hazardous wastes. For the purpose of the base bid, the Contractor shall assume that all material excavated from the site meets the definition of non-hazardous excavated material, and will exceed 6 NYCRR 375-6 Unrestricted Use and Restricted Use Soil Cleanup Objectives and NYSDEC CP-51: Soil Cleanup Guidance Supplemental Soil Cleanup Objectives.
- 2. All excavated material from the site shall be disposed of in one of the following manners.
 - a. In accordance with the approved Excavated Material Disposal Plan developed for this specific material, the Contractor shall transport and dispose of all non-hazardous excavated material at an approved permitted off-site disposal facility approved by the Commissioner's Environmental consultant. If material is temporarily stockpiled on-site, the stockpile shall be covered and silt curbs shall be installed around the stockpile.
 - b. If required and directed by the Commissioner, the Contractor shall stockpile or stage petroleum-contaminated material, as defined in 1.05D, at the site pending sample analysis and off-site disposal. The stockpile shall be covered and silt curbs shall be installed around the stockpile. The Contractor shall negotiate with an approved off-site disposal facility licensed to receive petroleum-contaminated material. The Contractor shall provide the Commissioner with a copy of the off-site disposal facility's permit to receive petroleum-contaminated material as part of the separate Excavated Material Disposal Plan. Prior to disposal of this material, the Contractor shall obtain written authorization from the Commissioner. In addition the Contractor shall provide the Commissioner with original copies of all shipping papers including manifests, weigh tickets, and original invoices for the disposal of this material. The Contractor shall comply with all applicable federal, state, and local rules and regulations pertaining to the handling, management, loading, transportation, and disposal of petroleum-contaminated material.
 - c. If required and directed by the Commissioner, the Contractor shall stockpile or stage hazardous waste, as defined in Paragraph 1.05E at the site pending sample analysis and off-site disposal. The stockpile shall be covered and silt curbs shall be installed around the stockpile. The

Contractor shall provide the Commissioner with a copy of the off-site disposal facility's permit to receive hazardous waste as part of the separate Excavated Material Disposal Plan. Prior to disposal of this material, the Contractor shall obtain written authorization from the Commissioner. In addition the Contractor shall provide the Commissioner with original copies of all shipping papers including manifests, weigh tickets, and original invoices for the disposal of this material. The Contractor shall negotiate with an approved off-site disposal facility meeting the requirements of 40 CFR 265 and licensed to receive hazardous wastes. The Contractor shall comply with all applicable federal, state, and local rules and regulations pertaining to the handling, management, loading, transportation, and disposal of hazardous waste.

3. The Contractor shall provide all labor, equipment and material necessary to excavate, load, handle, and transport excavated material, as described herein, from the site to the designated facility(ies), and in accordance with the following:
 - a. The Contractor shall comply with all applicable federal, state, and local rules and regulations pertaining to the disposal of non-hazardous excavated material, and, if applicable, petroleum-contaminated material, and hazardous waste.
 - b. The Contractor shall use and identify, in the Excavated Material Disposal Plan, only properly licensed and insured off-site disposal facilities that can accept non-hazardous excavated material, and, if applicable, petroleum-contaminated material and/or hazardous waste.
 - c. Prior to commencing off-site disposal, the Contractor shall furnish to the Commissioner a list approved by the Commissioner that identifies the make, model, truck number and registration plate number of each of the trucks that will transport the material to the off-site facilities. Any change of trucks, or additional trucks, shall require prior approval at least 24 hours in advance. The Contractor shall also furnish to the Commissioner a list, approved by the Commissioner, of the water-level volume of each truck, regardless of whether the truck possesses a DOT truck permit number indicating truck volume.
4. The Contractor is responsible for implementing all appropriate dust and/or odor control measures, including, but not limited to, water suppression.
5. Prior to departure from the site, transport vehicles shipping excavated material shall be inspected and cleaned as necessary to prevent tracking material off-site. Contractor shall properly collect and properly dispose, at an Commissioner-approved facility, all waste generated from cleaning.
6. The Contractor shall provide all required notifications to federal, state and local agencies prior to transporting material off site. Copies of all notifications issued shall be transmitted to the Commissioner at the time of issuance.

7. The Contractor shall screen drivers of transport vehicles prior to engagement and prior to departure from the site. Vehicle drivers shall be fully-licensed and possess appropriate training.
8. Vehicles used to transport excavated material shall be designed, equipped, operated and maintained to prevent leakage, spillage and airborne emissions during transport. Only safe, suitable and well-maintained vehicles, which are properly labeled/placarded, manned, permitted and registered to perform the required transportation services, shall be used.

3.07 FILLING AND GRADING

A. General

1. Do not commence filling and backfilling operations until proposed fill and backfill have been approved by the Environmental consultant (in addition to gradation approvals), construction below finish grade has been approved, underground utilities and mechanical items inspected and tested, forms removed, waterproofing/membranes/coatings and other improvements installed, trash and debris removed, and temporary and permanent bracing installed.
2. Do not commence backfilling, filling and grading until existing subgrades have been compacted.
3. Backfilling of trenches is described under "Backfilling of Trenches".
4. Fill all excavations, backfill against all walls, and do all filling and grading necessary to bring the surfaces to the level required.
5. Do not backfill against concrete elements until the concrete has obtained its specified compressive strength.
6. Perform backfilling around foundation walls when in the opinion of the Engineer of Record floor beams and/or concrete slabs form sufficient bracing to withstand the backfill pressure. All other fill, backfill, and rolling to approximately finished grades shall then be completed.
7. Take particular care when rolling over areas where trenches or other excavations have been made and backfilled.
8. Fill voids caused by the removal of below grade improvements.
9. Grade bottoms of pavements and area way bottoms toward sediment pits or catch basins to maintain uniform thickness of the slabs.
10. A minimum of twenty-four (24) inches of environmentally clean fill (as defined in paragraph 1.05F) that has been tested utilizing laboratory reporting limits which are acceptable to the Commissioner (i.e., below the regulatory comparison criteria)

shall be used on all exposed ground surfaces, including landscaped areas (grass, sod, groundcover, shrub areas, tree areas, including tree pits, etc).

B. Compaction of existing subgrade

1. Site preparation

Existing subgrade shall be free from stumps, bushes, roots, sod, topsoil, rubbish, garbage, and any other material that may decay.

2. Grading

a. Prior to placing fill or backfill in any area, grading is to be performed as required to provide for drainage. Ditching or filling around the area shall be performed to intercept or divert all surface water. Within the area, the ground in which fill is to be placed shall be graded so as to provide for unobstructed drainage from every point to a sump or other disposal point.

b. On completion of grading as specified above, closely examine to determine whether excessive wetness, springs, or other seepage of water can be observed at any point. If such conditions exist, positive drainage in suitable form, such as french drains or tilling, must be provided before placement of fill is undertaken.

c. When the fill area has been prepared as specified above, compact the natural ground surface by methods indicated in 3 below.

3. Method of Compaction

a. Natural undisturbed material shall be graded and compacted to attain a uniform surface. These areas shall be determined by the Special Inspector.

b. Existing subgrade shall be proofrolled in the presence of the Special Inspector for the following conditions:

1) Subgrade consists of uncontrolled fills.

2) Identification of shallow loose zones of material or identification of soft/spongy material at surface.

c. Proofrolling shall be accomplished with a minimum of four passes using a compactor of minimum static weight of 19,000 lbs, a minimum dynamic force of 40,000 lbs, and a total applied force of not less than 7,500 per foot of drum width. In areas inaccessible to the heavy equipment, provide a minimum of six passes with a vibratory plate or jumping compactor. Fill shall not be placed until the subgrade is approved by the Special Inspector.

4. Soft Areas During Compaction: If any areas show pumping, noticeable weaving, or which are otherwise unsatisfactory, undercut material within the limits and extent ordered by the Special Inspector. These areas shall be replaced with controlled fill, compacted to 92% (95% in vehicular areas) of maximum dry density by ASTM D1557 at optimum moisture content, unless otherwise directed by the Engineer of Record.

C. Placement and Compaction of Fill and Backfill

1. Placement

- a. General: Begin fill and backfilling in the lowest section of the area. Spread material evenly by mechanical equipment or by manual means above the approved compacted subgrade in lifts not exceeding 6" to 8" for material compacted by heavy machinery and 4" for material compacted by hand tamping. Build layers as horizontally as practical to prevent thickness of lift from exceeding that specified but provide with sufficient longitudinal and transverse slope to provide for runoff of surface water from every point.
- b. Moisture Control: The moisture-density curve for the fill use shall be supplied to the Contractor as a guide in controlling moisture to achieve the required degree of compaction. If, in the opinion of the Special Inspector, fill material becomes too wet for the required compaction, the fill shall be dried by a method approved by the Special Inspector prior to commencing or continuing compaction operations. Likewise, if, in the opinion of the Special Inspector, the fill material becomes too dry for the required compaction, the fill shall be moistened by a method approved by the Special Inspector prior to commencing or continuing compaction operations.

2. Compaction: Compact each lift to the degree of compaction indicated below. The degree of compaction shall be checked by the Special Inspector and each successive lift shall not be placed or compacted until the previous lift is inspected and approved by the Special Inspector. Compact the fill and backfill to elevations and limits shown on Drawings and is subject to final inspection and approval by the Special Inspector. Extend the compacted fill beyond the berm lines on a slope downward at a maximum slope of two horizontal to one vertical to intersect the approved stripped subgrade. Maintain the fill slopes at all times.

- a. Areas to receive heavy vehicular traffic: 95% of the maximum dry laboratory density by D1557 at optimum moisture content.
- b. All other areas: 92% of the maximum dry laboratory density by D1557.

3. Drainage During Fill Operation: At all times, maintain and operate proper and adequate surface and subsurface drainage to the satisfaction of the Special Inspector in order to keep the construction site dry and in such condition that

placement and compaction of fill may proceed unhindered by saturation of the area. Submit method of dewatering to the Commissioner for prior approval. Such approval shall not relieve the Contractor of his responsibility to maintain the site dry during the compaction operation. See Article 3.02.

4. Frost: Do not place fill materials when either the fill materials or the previous lift (or subgrade) on which it is placed is frozen. In the event that any fill which has already been placed on the surface shall become frozen, it shall be scarified and re-compacted, or removed, to the approval of the Special Inspector before the next lift is placed. Remove or recompact any soft spots resulting from frost to the satisfaction of the Special Inspector before new fill is placed.

D. Placement and Compaction of Aggregate Bases, Crushed Stone, and Broken Stone Ballast

1. Provide aggregate base under all exterior pavements and wherever else indicated on the Drawings or specified herein. Provide crushed stone under all interior slabs. Provide 6" minimum unless specified otherwise elsewhere.
2. Verify finished subgrade is at proper level.
3. Prior to placement of material, reroll subgrade with a two-ton roller or hand tamper.
4. Place aggregate base, and crushed stone in layers of uniform thickness, but not exceeding 6". Compact material to either 80% of relative density or 92% (95% for heavy vehicular traffic areas) of maximum dry density at optimum moisture in accordance with ASTM D1557. Maintain optimum moisture content for compacting the material. Place material in single layer for aggregate courses six inches or less. Alternate blading and rolling to obtain a smooth, even, and uniformly compacted course.

3.08 BACKFILLING OF TRENCHES

A. General

1. Do not backfill trenches until tests and inspections have been made and the backfilling authorized by the Commissioner. Use care to avoid damage or displacement of pipe or conduit.
2. Backfill with controlled fill and compact each layer to 92% (95% for vehicular areas) of its maximum density as per ASTM D1557 using a vibratory plates, jumping compactors, or other approved means.

B. Piping

1. Backfill piping immediately after piping lines are tested and inspected and approved by representatives of the Department of Buildings, other regulatory agencies having jurisdiction, and the Commissioner.

2. For piping and trench drains encased in concrete, backfill immediately after concrete has attained its required strength and after inspection and approval by the Commissioner.
3. Backfill trenches by hand and place in uniform layers not exceeding 4" in depth up to a level of one foot over the crown of the pipe and/or sectional trench drain invert. Each layer shall be placed and then carefully and uniformly tamped, using a hand tamper in such a manner as to avoid injury and displacement of the pipe and/or sectional trench drain.
4. Backfill the remaining height of the trench as previously specified, except that the layers shall be uniformly compacted using a mechanical vibrator tamper. Limit the addition of water during backfilling to provide optimum moisture content for tamping procedures.

C. Conduits

1. Backfill trenches immediately after conduit pipes are laid therein, inspected, and approved by the Commissioner.
2. Backfill trench by hand and place in uniform layers not exceeding 4" in depth to a level of one foot above the top of the conduits. Each layer shall be placed and then carefully and uniformly tamped, using a hand tamper in such manner to avoid injury and displacement of the conduits.
3. Backfill the remaining height of the trench as previously specified, except that the layers shall be uniformly compacted using a mechanical vibrator tamper. Limit the addition of water during backfilling to provide optimum moisture content for tamping procedures.

3.09 FIELD QUALITY CONTROL

A. Tests

1. Sieve Analysis: The Commissioner's Laboratory will perform sieve analysis in accordance with ASTM D422 on fill and aggregate materials at the site prior to placement in order to verify conformance with the submitted samples. The laboratory will take one sample at a minimum for every 100 CY placed (or portion thereof) each day. If material appears to vary from approved material, more frequent testing will be done and if results indicate material varies from that approved, costs of such testing will be paid by the Contractor.
2. Field density tests: The Commissioner's Laboratory will perform in-place field density tests in accordance with either of the three following procedures; ASTM D1556, ASTM D2167, or ASTM D2922.

- a. Existing subgrade. One field density test for each 2000 ft², but in no case less than three tests.
- b. Fill areas - For each lift, one field density test for each 2000 ft², but in no case less than three tests.
- c. Backfill areas - For each area, two field density tests per lift at locations determined by Special Inspector and one test per lift for every 50 linear feet of trench.

3. Load Bearing Tests

If required, the Commissioner's testing laboratory will perform load bearing tests to determine the soil bearing capacity where suspect. Provide access to site and cooperate with the Commissioner's testing laboratory in completing the load bearing tests.

4. Environmentally Clean Fill/Backfill Tests

The Commissioner's testing laboratory, as a quality assurance measure, may perform applicable analysis of fill/backfill material samples to verify that the material meets the environmentally clean fill requirements.

5. Test Borings

The Commissioner, at its discretion, may take additional test borings. The Contractor shall provide access to site and cooperate with the Commissioner's boring contractor in completing the borings.

B. Inspection

1. Fill and Backfill Compaction: The Special Inspector will give approval for each lift in accordance with Sections BC 1704.7.2 and BC 1704.7.3 of the 2008 NYC Building Code. In the event that the compaction requirements are not satisfied, the lift shall be rerolled or removed and again tested until the required compaction is obtained.
2. Footing Subgrade: The Special Inspector is responsible for approval of bearing capacity for all footings in accordance with Section BC 1704.7.1 of the 2008 NYC Building Code.
3. Underpinning: The Special Inspector is responsible for inspection of underpinning in accordance with Section BC 1704.9.1. Contractor's licensed professional engineer is to file all design documents as specified in Article 3.02 of this Section.
4. Excavation - Sheet piling, Shoring, and Bracing: The Special Inspector is responsible for inspection of underpinning in accordance with Section BC 1704.19 and BC

3304.4.1. Contractor's licensed professional engineer is to file all design documents as specified in Article 3.02 of this Section.

5. Contractor's Responsibility: The Contractor shall notify the Commissioner at least 48 hours prior to filling operations, pouring of footings, and installation of underpinning and excavation support to allow for the Commissioner to have the appropriate personnel at the site.
6. Contractor's Inspections: Inspections and testing performed by the Commissioner shall not relieve the Contractor of responsibility for performing all other testing and inspection specified herein or otherwise necessary to meet the quality control and quality assurance requirements of this Section.

C. Responsibility

1. All required testing and/or analysis not specifically defined as being provided by the Commissioner shall be provided by the Contractor as part of the included Work and costs of this Project.
2. No testing and/or analysis by the Commissioner shall relieve the Contractor of the responsibility of conforming to the requirements of these specifications.
3. Time for conducting the tests and/or inspections defined in these specifications shall be considered as part of the Work of this Project and neither extension of time nor additional costs shall be accepted as a result.

3.10 PROTECTION

- A. Protect graded and compacted areas from traffic and erosion. Keep free of trash and debris.
- B. When completed compacted areas are disturbed by subsequent construction or weather, scarify surface, re-shape, and compact to required density prior to further construction.
- C. Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface or finish to match adjacent work, and eliminate evidence of restoration to greatest extent possible.
- D. A guardrail or solid enclosure at least 3 feet 6 inches high shall be provided along the open sides of excavations, except if the side slopes are one vertical to three horizontal or flatter.

END OF SECTION

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SECTION 321216

ASPHALTIC CONCRETE PAVING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide material, labor, equipment, and services required to install asphaltic concrete paving and related work within the lot lines as shown on Drawings.

1.02 NOT APPLICABLE

1.03 NOT APPLICABLE

1.04 REFERENCES

References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

- A. Standard Specifications - New York City Department of Transportation Bureau of Highway Operations.
- B. Construction Specifications for Asphaltic Concrete and Other Plant-Mix Types - The Asphalt Institute, Fourth Edition.
- C. Standard Specifications - Construction and Materials - New York State Department of Transportation.
- D. American Society of Testing and Materials (ASTM)
- E. American Association of State Highway and Transportation Officials - "Standard Specification for Transportation, Materials, Methods of Sampling and Testing".

1.05 DEFINITIONS

- A. Subbase

Either the compacted subgrade or compacted aggregate base that is to receive the base course.

- B. Base Course

Asphaltic concrete mixture, usually referred to as plant-mix (described by the term binder mixture by NYCDOT), that is used as a base for the final asphaltic wearing surface when a Portland cement concrete base is not used.

C. Surface Course

Final asphaltic concrete wearing surface, usually referred to as surfacing mix (described by the terms fine or extra fine asphaltic concrete mixture by NYCDOT), placed over plant-mix or portland cement concrete base.

1.06 QUALITY ASSURANCE

A. Qualifications

1. Producer: Company specializing in production of asphaltic concrete shall have more than three years experience.
2. Installer: Company specializing in installation of asphaltic concrete shall have more than three years experience and at least two jobs with similar quantity of material.

B. Regulatory Requirements

1. Work of this Section shall comply with the requirements of the NYC Building Code and those agencies having jurisdiction over noise, pollution, etc.
2. Requirements for asphaltic concrete, including, but not limited to handling, equipment, transportation etc., not specified herein shall conform to the more stringent of the New York City Department of Highway Standard Specifications, New York State Department of Transportation Standard Specifications, and AASHTO "Standard Specification for Transportation, Materials, Methods of Sampling and Testing".

1.07 ENVIRONMENTAL REQUIREMENTS

A. Asphaltic Concrete

1. Do not install asphaltic concrete paving when there is frost on the subbase or base; when the subbase or base is wet; or when the air temperature is 40°F or below.
2. Materials containing frost will be rejected.

B. Prime coat

Apply prime coat when air temperature is above 50°F and when temperature has not been below 35°F for 12 hours immediately prior to application. Do not apply when subbase is wet.

C. Tack coat

Apply tack coat when air temperature is above 50°F and when temperature has not been below 35°F for 12 hours immediately prior to application. Do not apply unless base is completely dry.

D. Pavement Sealer

Apply sealer under conditions similar to prime and tack coats.

E. Joint Sealer

Apply joint sealer when air and substrate temperatures are above 40°F and rising for 12 hours after application.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Pavement Sealer

1. Neyra Industries, Inc., Cincinnati, Ohio
2. VelveTop Products, Huntington Station NY

B. Reflective Cracking Membrane

1. Amoco Fabrics and Fibers Co., Atlanta, Ga. 30339
2. Polyguard Products, Inc., Ennis, Tx. 75120

C. Joint Sealer

1. W.R. Meadows

D. Herbicide

1. Allied Chemical Corp.
2. Ciba-Giegy Corp.
3. Dow Chemical U.S.A.
4. U.S. Borax and Chemical Corp.

E. Line Striping Paint

1. Sherwin Williams

2.02 MATERIALS

A. Asphaltic Concrete

Materials shall comply with Section 3.01 of NYCDOT Standard Specifications for each item.

B. Prime Coat

Cut-back asphalt type, AASHTO M82, (ASTM D2027) MC-30, MC-70 or MC-250.

C. Tack Coat

Emulsified Asphalt; AASHTO M140 (ASTM D977) or M208 (ASTM D2397); SS-1h, CSS-1 or CSS-1h, Diluted with one part water to one part emulsified asphalt.

D. Pavement Sealer

Polymer modified asphalt emulsion sealer meeting ASTM D2939, D140, D244, and D529; containing no coal tar, and less than 10 grams per liter of volatile organic compounds.

1. Neyra Jennite AE polymer modified asphalt sealer

2. VelveTop PM Polymer Modified Asphalt Sealer

E. Reflective Cracking Membrane

1. Woven or Non-woven polypropylene fabric precoated with a rubberized adhesive base at least 18" in width used for preventing cracks in substrate emanating through the asphalt topping.

2. Product:

a. Petrotac by Amoco Fabrics and Fibers Co., with Celotex primer

b. Polyguard NW 75 by Polyguard Products, Inc., with 650 RC Liquid Adhesive and Mastic to prime surface.

F. Joint Sealer

Cold-applied low modulus pourable two-component sealant comprised of polymeric compounds compatible for both Portland cement concrete and asphaltic concrete surfaces providing a flexible, rubber-like finish. Material shall not become brittle to temperatures as low as -20°F.

1. SOF-SEAL by W.R. Meadows

G. Herbicide

Commercial chemical for weed control, registered by the Environmental Protection Agency.

H. Line Striping Paint for Asphaltic Concrete Pavement

Latex traffic marking paint such as Setfast Latex Traffic Marking paint by Sherwin Williams.

2.03 EQUIPMENT

- A. Provide proper compaction equipment to properly compact asphaltic concrete pavement.

2.04 MIXES

- A. Bituminous material shall come from one source only.
 B. Bitumen and aggregate composition shall be plant mixed entirely.
 C. Composition
 1. Aggregate:

Percent Passing by Weight of Aggregate

Sieve Size	Surface Course (NYCDOT Extra Fine Surfacing Mix)	Surface Course (NYCDOT Fine Surfacing Mix- NYS Type 7F)	Base Course (NYC Binder- mix - NYSDOT Type 3)	Variation from Job Mix Formula* (Fine and Binder mix only)
1 1/2"	-	-	100	-
1"	-	-	95-100	-
1/2"	100	100	70-90	+6 (bin. mix only)
3/8"	98-100	-	-	-
1/4"	-	90-100	48-74	+7 (bin. mix only)
1/8"	-	45-70	32-62	+7 (+6 for fine)
No. 4	70-90	-	-	-
No. 8	38-65	-	-	-
No. 20	-	15-40	15-39	+7
No. 40	-	8-27	8-27	+7
No. 50	6-25	-	-	-
No. 80	-	4-16	4-16	+4
No. 200	2-8	2-6	2-8	+2

* This is the tolerance from the approved job mix, but may never be out of the accepted range

2. Asphaltic Cement (Bitumen)

Mix	Percent Bitumen by Total Weight Soluble in Chloroform Job Mix Formula*	Variation from
Plant-mix	4.5-6.5	+4
Fine Surfacing Mix	5.8-7.0	+4
Extra Fine Surfacing Mix	5.0-8.0	-

D. Penetration Grade of the asphaltic cement shall be 85-100.

E. The Contractor has the option to provide either the fine or extra-fine surfacing mix.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that all grades and/or concrete slabs onto which asphaltic concrete is to be placed are at the required levels prior to placement. Verify that all miscellaneous concrete work has been installed. Notify the Commissioner in writing of conditions that will interfere with the proper completion of this Work. Do not begin work until all improper conditions are remedied. Installation of aggregate subbase is described in Section 312100.

3.02 PREPARATION

A. Protection

1. Provide tarpaulins for use during conditions such as such as rain, chilling winds or unavoidable delay to cover and protect paving materials.
2. Protect pavement from debris and damage from equipment and other work.
3. Exercise care in applying bituminous materials to avoid smearing of adjoining concrete surfaces. Clean surfaces of bituminous materials when smearing occurs.

B. Surface Preparation

1. Remove all loose and foreign materials before proof rolling and application of herbicide and prime coat.
2. Proofroll prepared subbase surface to check for unstable areas and areas requiring additional compaction.
3. Do not begin paving work until deficient subbase areas have been corrected and are ready to receive paving.

4. Subbase shall be dry and free from any standing water.
5. Apply weed control agent in accordance with manufacturer's recommended dosages and application instructions. Apply to compacted, dry subbase prior to application of prime coat.
6. Apply prime coat at rate of 0.20 to 0.50 gal per sq yd over compacted subbase. Apply material to penetrate and seal, but not flood, surface. Cure and dry as long as necessary to attain penetration and to allow for evaporation of volatiles.
7. Asphaltic concrete placed on Portland cement concrete pavements or existing asphaltic concrete pavement.
 - a. Any joints (expansion, contraction, construction, etc.) in the base shall be covered with the reflective cracking membrane.
 - b. The surface onto which the membrane is placed shall be dry and free of debris. Clean joints over 1/8" wide by pneumatic means and fill with asphaltic joint filler.
 - c. Prime surface to receive membrane as specified by the membrane manufacturer. Place the membrane in strict accordance with the manufacturer's instructions. Ends shall be overlapped 4" to 6".
 - d. Placement of the surface course shall closely follow membrane laydown. Do not place more membrane than can be overlaid that working day.

3.03 WOOD FORMS

- A. Provide temporary wood forms at perimeter of areas to be paved where permanent side supports (i.e., curbs, gutters or edgings) have not been constructed. Forms are to remain in place until surface course has been thoroughly rolled and compacted to require thickness.
- B. Form out areas to be depressed, such as high jump pits, etc.
- C. Oil wood forms before placing any paving materials against them. Stake forms securely to line and grade, using at least 3 bracing stakes or pins to each ten feet of length, to properly resist pressure and impact of roller without springing form.
- D. Forms are to rest firmly upon the thoroughly compacted subbase through their entire length.
- E. Clean and re-oil forms each time before reuse.

3.04 PLACEMENT

- A. General
 1. Prior to installation of pavement, verify all miscellaneous concrete items have been installed.

2. Establish and maintain required lines and elevations.
3. Place asphaltic concrete mixture on prepared surface, spread and strike-off. Spread mixture at the temperature required by Table 404-1 of the NYSDOT Standard Specification. Place inaccessible and small areas by hand. Place each course to required grade, cross-section, and compacted thickness.
4. Begin rolling when mixture will bear roller weight without excessive displacement. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.
5. After final compression, field density shall be not less than 92% of the theoretical maximum density as determined by ASTM D2041.

B. Asphaltic Concrete Base Course - Plant-Mix

1. Provide plant-mix base unless Portland cement concrete base is shown on Drawings or specified herein.
2. Spread sufficient plant-mix to develop a uniform 4" thickness after rolling and compaction.
3. Sprinkle with clean water and compact with a vibratory 10-ton or greater roller. Smaller weight rollers may be required due to load prohibitions on existing structures. Provide multiple rollers for large areas. In areas where the use of a roller is impracticable, heavy mechanical tampers may be used to consolidate the material. Laydown temperature of mixture shall be adjusted to take into account the longer time of the many multiple passes required by smaller compactors or mechanical tampers to achieve the required density. Refer to NYCDOT Standard Specifications for other requirements.

C. Asphaltic Concrete Surface Course - Surfacing Mix

1. Prior to placement of surface course, apply tack coat to contact surfaces of previously constructed asphaltic or Portland cement concrete and surfaces abutting or projecting into asphaltic concrete pavement. Distribute at rate of 0.05 to 0.15 gal per sq yd of surface. Allow to dry until at proper condition to receive paving.
2. Place surface course over base only when base is dry and free from standing water.
3. Spread in loose layer and of such depth to result in a uniform course having the thickness of 1¹/₂" after compaction and rolling (1" for surface course over concrete base).
4. Compact the material with approved roller to a smooth even surface and to the levels indicated.

5. Roller shall be a minimum 10-ton tandem type having a rear wheel minimum compression of 225 lbs per lineal inch. Refer to subparagraph B.3 immediately above for other requirements.
6. Motion of roller shall be slow enough to avoid displacement of the surface rolled.
7. Keep roller wheels moistened with water to prevent adhesion of the materials to wheels, but without use of excessive amount. Use of any liquids other than water for this purpose is prohibited.
8. If the operation of laying materials is interrupted, the end of the laid material shall be left unrolled until the work is resumed so that there will be no joints in the topping.
9. If it is necessary to pass the roller over or to permit traffic to pass over such temporary end, thus consolidating it, cut back the material before recommencing laying operations in order to present a fresh clean surface for contact with the newly placed material.
10. Make joints between old and new pavements, or between successive days' work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density and smoothness as other sections of the asphaltic concrete course. Clean contact surfaces and apply tack coat.
11. The use of liquid bitumen or hot smoothing irons in finishing such joints is prohibited.
12. At locations adjacent to curbing and gutters inaccessible to rollers, compression shall be effected with iron tampers weighing not less than 25 lbs, having a maximum bearing area of 48in².
13. Any surfacing material (ie. Sealer or striping paint, etc.) to be placed on the asphaltic concrete surface shall only be done after the asphaltic concrete has cured and the oils have dissipated. Consult with the product manufacturer for their exact requirements.
14. Where asphaltic concrete abuts concrete walls, existing asphalt pavement or concrete pavements apply asphalt joint sealant. Neatly tape all sides of joints, including vertical surfaces where existing) to prevent damage and smearing of material on surfaces and protect until cured.

3.05 FINISH

- A. The rolled finish surface shall be free from porosity, fissures, or blemishes, true to crown and grade; free from depression, waves, bunches, or unevenness so as to allow complete runoff.
- B. Should defects in composition compactness or surface finish appear in the completed work, remove defective areas to full depth of the course and replace with thickness and finish specified.

- C. With permission of the Commissioner, minor surface defects may be repaired with approved sealing compound.
- D. Cracking, blistering, running, or deviation from requirements specified above that occur during the guarantee period are considered defects under the warranty conditions of the Contract.

3.06 PATCHING

- A. Remove and replace paving areas mixed with foreign materials and defective areas in a manner acceptable to the Commissioner. Cut-out such areas and fill with fresh, hot, asphaltic concrete. Compact by rolling to maximum surface density and smoothness.

3.07 PAVEMENT SEALER APPLICATION

- A. After asphaltic concrete surface course has been tested and approved for allowable tolerances and the surface is hardened to a degree acceptable to the sealer manufacturer (a minimum of 30 days), apply the sealer in accordance with the manufacturer's instructions.
- B. Sweep or mechanically clean surfaces thoroughly free of dust, dirt and foreign materials; remove oil and grease spots with household detergent. Flush entire surface with water; remove all remaining water puddles. Apply primer if recommended by the manufacturer.
- C. Dampen pavement as recommended by the manufacturer; pour sealer mix in spots or ribbons, then spread evenly with push broom or squeegee. Mechanical applicators may be used, and mix must be periodically agitated for uniformity. Two coats shall be applied, allowing for complete drying, tack free, between coats. Surface shall be uniform, with no holidays or pinholes.
- D. Allow sealer to dry about 24 hours minimum depending on weather conditions before opening surface to traffic. Temperature for drying conditions shall not be less than 50°F for 48 hours after application.
- E. Apply at a minimum rate per coat of 1.10 gallons of sealer concentrate for every 100 sq ft of surface, or more concentrate if required by the sealer manufacturer. Concentrate shall be mixed with water and clean, dry, silica sand in quantities recommended by the manufacturer. Typical sand content is 5 pounds per gallon of concentrate, and shall meet fineness rating recommended by manufacturer. Maximum water content is 15% of undiluted concentrate volume.
- F. Apply Line Markings as described in this Section and as shown on the Contract Drawings.
 - 1. Protection
Protect surfaces not to be painted. Avoid spray of any kind.
 - 2. Surface Preparation

- a. Prepare surface to satisfaction of the Commissioner prior to line painting.
- b. Remove by broom, vacuum, or blower all dust, dirt, and other loose materials on surface to be painted.
- c. Comply with manufacturer's latest requirements and recommendations.

3. Application

- a. Accurately measure and layout line markings.
 - b. Apply paint with mechanical equipment.
 - c. Paint lines as shown on the Drawings.
4. Provide uniform straight edges.
 5. Apply not less than two coats in accordance with manufacturer's recommended rates.
 6. Lines shall of width and length as indicated on the Contract Drawings.

3.08 TOLERANCES

- A. The thickness of the plant-mix and surface course shall not vary by more than 1/2".
- B. The finish elevation for the plant-mix shall not vary from plan grade by more than 1/2", the surface course by more than 1/4".
- C. The smoothness tolerance for the plant-mix is 1/4", the surface course 1/8", when measured as described under "Field Quality Control".

3.09 FIELD QUALITY CONTROL

A. Testing and Inspection

1. The Commissioner's inspector will take samples of the asphaltic concrete to check conformance with the design mix and will verify the in-place density.
2. Pay for any tests such as cores required by the Commissioner when such tests show non-conformance with the Drawings and Specifications.
3. Test finished surface of each asphaltic concrete course for smoothness, using 10-foot straightedge applied parallel with, and at right angles to, centerline of paved area.

4. Check the final surface for depressions by applying water in the presence of the Commissioner. Water should not pond and should flow to all catch basins and trench drains.

B. Survey

Provide survey showing elevation of finished surface on 25 foot intervals.

3.10 CLEANING

- A. After completion of paving operations, clean surfaces of excess or spilled asphalt materials to the satisfaction of the Commissioner.

3.11 PROTECTION

- A. After final rolling, do not permit vehicular traffic on asphaltic concrete pavement until it has cooled and hardened so as not to be marked and in no case sooner than 6 hours.
- B. Provide barricades and warning devices as required to protect pavement and the general public.
- C. Cover openings of structures in the area of paving until permanent coverings are placed.

END OF SECTION

SECTION 321313

SIDEWALK AND STREET PAVING

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide for all items of Work outside the street line that are under the jurisdiction of the New York City Department of Transportation (NYCDOT).
- B. Construct all concrete sidewalks, pavements, pedestrian ramps, concrete curbs, steel faced concrete curbs, drop curbs, tree pits, asphaltic concrete pavement, pavement markings and items shown on Drawings, specified herein, and as required by site conditions and NYCDOT.
- C. Pay for tests required by NYCDOT to ensure compliance with NYCDOT Specifications.

1.02 RELATED SECTIONS

- A. Earthwork..... Section 312100

1.03 NOT APPLICABLE

1.04 REFERENCES

References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

- A. "Standard Specifications - New York City Department of Transportation, Bureau of Highway Operations" dated June, 1986 with latest amendments. (NYCDOT Standard Specifications)
- B. "Standard Details of Construction" of the New York City Department of Transportation, Bureau of Traffic Operations - Street Design, dated August, 1988 with latest amendments. (NYCDOT Standard Details)

1.05 QUALITY ASSURANCE

- A. Qualifications
 - 1. Concrete Installer: Company specializing in performing the Work of this Section shall have three years minimum experience on successful projects of similar size.

2. Concrete Producer: Company specializing in the production of concrete shall have a minimum of three years experience.

B. Regulatory Requirements

Materials and methods of construction shall conform to:

1. "NYCDOT Standard Specifications": Section numbers referred to in Parts 2 and 3 of this Specification Section, such as "Section 4.13.3(b)" or "Section 2.23", etc. refer to the sections given in the NYCDOT Standard Specification which govern this work outside the street line.
2. "NYCDOT Standard Details": Drawing numbers referred to in Parts 2 and 3 of this Specification Section, such as "Drawing H-1044" or "Drawing H-1010", etc., refer to the Drawings in the NYCDOT Standard Details which govern this work outside the street line.

Where more stringent requirements are given in this Specification Section, the requirements of this Specification Section shall govern.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Sidewalk and Driveway Foundation Material

1. Material for sidewalk and driveway foundation course shall conform to the requirements of "Section 2.02" for size No. 3 broken stone or gravel. Foundation course shall be 6" thick.
2. Recycled Concrete Aggregate
 - a. As an option, recycled concrete aggregate may be used instead of the above specified stone base course (meeting the indicated gradations), depending on the soundness of aggregates, which are at the Engineer of Record's option. The material must be clean, with no deleterious material visible (wood, brick, metal, or other friable material) and meet the following criteria:
 - 1) Material shall consist of at least 90% by weight of Portland cement concrete or ledge rock.
 - 2) Material making up the remaining 10% shall be as follows:

Wood - 0.1% maximum

Brick, mica schist, metal, or other friable stone material - 0.4% maximum

Asphaltic Concrete - 10% maximum

- B. Concrete for Sidewalks
1. Concrete shall comply with the requirements of "Section 4.13.3(b)". Cement used shall be Type IIa.
 2. The recycled content in the concrete mix shall be 40% of the cementitious content or a minimum of 6% of the dry weight.
- C. Prefomed Expansion Joint Filler
- Material shall conform to the requirements of "Section 2.15", 1/4"thick, Type IV.
- D. Asphaltic Blown Joint Filler
- Material shall conform to the requirements of "Section 2.16".
- E. Welded Steel Wire Fabric
- Material shall conform to the requirements of "Section 2.25". Fabric shall be 6x6-W2.9xW2.9 wherever fabric is indicated.
- F. Steel Bars for Concrete Reinforcement
- Material shall conform to the requirements of "Section 2.23", Type I, Grade 60.
- G. Concrete for Curb
1. Concrete shall comply with the requirements of "Section 4.08.3", except the minimum compressive strength shall be 3500 psi.
 2. The recycled content in the concrete mix should be 40% of the cementitious content or a minimum of 6% of the dry weight.
- H. Concrete for Steel-faced Curb and Facing
1. Concrete and steel facing shall comply with the requirements of "Section 4.09.3", except the minimum compressive strength shall be 3500 psi.
 2. The recycled content in the concrete mix should be 40% of the cementitious content or a minimum of 6% of the dry weight.
- I. Asphaltic Concrete Base Course
- Material shall conform to the requirements of "Section 3.01" for binder mixture.

J. Concrete Base for Pavement

Material shall comply with the requirements of "Section 4.04.3".

K. Asphaltic Concrete Surface Course

Material shall conform to the requirements of "Section 3.01" for fine asphaltic concrete mixture.

L. Concrete Pavements

1. Concrete materials shall comply with the requirements for "Section 4.05.3".
2. The recycled content in the concrete mix should be 40% of the cementitious content or a minimum of 6% of the dry weight.

M. Dense Graded Stone Base Course

1. Material shall comply with requirements of "Section 6.46.3".
2. Recycled Concrete Aggregate
 - a. As an option, recycled concrete aggregate may be used instead of the above specified stone base course (meeting the indicated gradations), depending on the soundness of aggregates, which are at the Engineer of Record's option. The material must be clean, with no deleterious material visible (wood, brick, metal, or other friable material) and meet the following criteria:
 - 1) Material shall consist of at least 90% by weight of Portland cement concrete or ledge rock.
 - 2). Material making up the remaining 10% shall be as follows:

Wood - 0.1% maximum

Brick, mica schist, metal, or other friable stone material - 0.4% maximum

Asphaltic Concrete - 10% maximum

N. Granite Block Tree Pit

Granite block and sand for sand cushion and joint filler for use in tree pits shall comply with the requirements of "Section 6.06.3".

O. Painted Pavement Markings

Paint shall comply with the requirements for "Section 6.49.2", color as indicated on drawings or determined by NYCDOT.

P. Detectable Warning Pavers

Precast concrete pavers, 2" thick, with detectable warning truncated domes, meeting NYCDOT requirements. Non-slip texture. Compressive strength 7000 psi minimum per ASTM C140. Water absorption 5% maximum per ASTM C140 or C936. Freeze/thaw 50 cycles with less than 1% loss of dry weight per ASTM C67. Flexural strength 600 psi minimum per ASTM C293. Coefficient of friction 0.6% min. per ASTM C1028. Pavers shall be suitable for thick set mortar installation over concrete.

Color or shade to contrast with surrounding sidewalk, as selected by Project Architect.

2.02 SOURCE QUALITY CONTROL

A. Testing

Testing of Concrete is described in Section 321416 of this Specification.

B. Inspection

1. Portland Cement Concrete

Concrete work is treated as Special Inspection and is described in Section 321416 of this Specification.

2. Asphaltic Concrete

- a. The Commissioner will assign an inspector at the plant to ensure that the mix provided is that of the design mix.
- b. Provide the inspector with any required testing apparatus to ensure conformance.
- c. Notify the Commissioner 72 hours in advance of each asphaltic concrete placement so that the inspector can cover the work at the plant.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Do not start excavation around city monuments and bench marks until said monuments or bench marks have been referenced and reset or otherwise disposed of by the Chief

Engineer of the Bureau of Highways. Furnish labor and materials required to remove, care for, and reset all such monuments and bench marks.

- B. Carefully remove all existing traffic signs at locations where new sidewalks are to be installed and store on the premises in a safe place, protected from the weather. Ten days prior to their removal, notify in writing the New York City Department of Traffic when signs will be ready for pick-up by the Department of Traffic. Forward copy of the letter to the Traffic Department to the Commissioner.

3.02 CONSTRUCTION

A. Concrete Sidewalk

Construct concrete sidewalk in accordance with the requirements of "Section 4.13.4" and "Drawing H-1045", Type I. Score pattern shall be 5'-0" x 5'-0" or as shown on Drawings in accordance with D.I.S.M.A.

B. Concrete Driveway Pavement

Construct 7" concrete driveway pavement in accordance with the requirements of "Section 4.13.4" and "Drawing H-1045", Type III. The concrete shall be placed in one course to the full depth indicated.

C. Concrete Curb

Concrete curb shall be constructed in accordance with "Section 4.08.4" and "Drawing H-1044". Curb height shall be 18".

D. Steel-faced Concrete Curb

Steel-faced concrete curb shall be constructed in accordance with "Section 4.09.4" and "Drawing H-1010". Curb height shall be 18".

E. Pedestrian Ramps

1. Construct pedestrian ramps where shown on the Drawings and in accordance with the requirements of "Sections 4.13" and "4.09" and "Drawings H-1011", "Drawing H-1010" and "Drawing H-1045", Type III.
2. Where pedestrian ramps are to be constructed in existing sidewalk, carefully remove existing sidewalk to the nearest expansion joints. Contractor may remove existing sidewalk by saw cutting, but in no case shall any saw cut be made within 3'-0" of an existing expansion joint. Any sidewalk damaged beyond the limits of the new pedestrian ramps shall be restored by the Contractor at his own cost, the restoration to be in accordance with the specification for new concrete sidewalk.

F. Sidewalk Tree Pits

1. Construction of sidewalk tree pits shall be in accordance with "Section 4.16" and "Drawing H-1046" or as shown on Drawings.
2. Granite block in tree pits shall be constructed in accordance with "Section 6.06.4".

G. Asphaltic Concrete Pavement

1. Prepare earth subgrade in accordance with "Section 4.04.4A".
2. Construct subbase course to the compacted depth indicated on the Drawings and in accordance with "Section 4.01.4J".
3. Construct asphaltic concrete base course to the compacted depth indicated on the Drawings and in accordance with "Section 4.01.4E-I".
4. Construct asphaltic concrete surface course to the compacted depth indicated on the Drawings and in accordance with "Section 4.01.5B-D".

H. Asphaltic Concrete Pavement with Concrete Base

1. Prepare earth subgrade in accordance with "Section 4.04.4".
2. Construct concrete base to the levels indicated on the Drawings and in accordance with "Section 4.04.4".
3. Construct asphaltic concrete wearing course to the compacted depth indicated on the Drawings in accordance with "Section 4.02", using the material of 4.02.2(c); 3" course of binder mixture and surface mixture.

I. Painted Pavement Markings

Pavement markings shall be painted as shown on the Drawings and in accordance with the requirements of "Section 6.49.3".

J. Restoration of Existing Pavement

Existing roadway pavement damaged due to trenching or sewer installation operation shall be restored as shown on "Drawing H-1042A".

K. Restoration of Existing Sidewalk

Existing sidewalks, driveways and pedestrian ramps to remain damaged due to trenching or other excavations shall be restored as per the details for new work, with color to match the existing.

3.03 FIELD QUALITY CONTROL

A. Testing

1. Concrete testing is described in Section 321416 of this Specification.
2. Pay for tests required by NYCDOT to ensure compliance with NYCDOT Specifications.
3. Pay for any tests such as cores required by the Commissioner when such tests show non-conformance with the Drawings and Specifications.

B. Inspection

1. Concrete work is treated as Special Inspection and is described in Section 321416 of this Specification.
2. The Commissioner's inspector will take samples of the asphaltic concrete to check conformance with the design mix.

END OF SECTION

SECTION 321416

CONCRETE CURBS AND PAVEMENTS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Furnish material, equipment, labor, services required to provide for concrete curbs and pavements. Work includes the installation of formwork, reinforcement, expansion joints and other items listed herein within the site. Provide special formwork or formliners for concrete with smooth finishes. Allow ample time and facility for the Work of other Divisions to be installed.
- B. Refer to Section 321313 for pavement and curb work outside the street (lot) lines.

1.02 NOT APPLICABLE

1.03 RELATED SECTIONS

- A. Sidewalk and Street Paving.....Section 321313

1.04 REFERENCES

References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

- A. American Society of Testing and Materials (ASTM) standards, latest editions.
- B. American Concrete Institute (ACI) standards, latest editions.
- C. "Placing Reinforcing Bars - CRSI-WCRSI Recommended Practices", latest edition. Concrete Reinforcing Steel Institute.

1.05 DEFINITIONS

- A. Exposed to view

Situated so that it can be seen from eye level from a public location. A public location is that which is accessible to persons not responsible for operation or maintenance of the building.

1.06 DESIGN REQUIREMENTS

A. Performance Characteristics:

1. Curbs: Normal weight concrete with a minimum compressive strength of 3500 psi, air entrained, and a maximum water to cement ratio of 0.45
2. Exterior slabs on grade (pavements, stairs, etc): Normal weight concrete with a minimum compressive strength of 3500 psi, air entrained, and a maximum water to cement ratio of 0.40.

B. Mix design for concrete with smooth form is to contain a high-range water reducer (super plasticizer).

1.07 QUALITY ASSURANCE

A. Qualifications

1. Concrete Installer: Company specializing in performing the Work of this Section shall have three years minimum experience on successful projects of similar size.
2. Concrete Producer: Company specializing in the production of concrete shall be certified by the National Ready Mixed Concrete Association (NRMCA) and shall have certification by either a New York City Agency or the NYS Department of Transportation. The plant shall use NYSDOT approved trucks and drivers shall be certified by the NRMCA.
3. Rebar Detailer: Company shall be specialized in the detailing of reinforcing bar shop drawings with a minimum of three years experience.

B. Regulatory Requirements

1. Building Code: Work of this Section shall conform to all requirements of the NYC Building Code and all applicable regulations of governmental authorities having jurisdiction 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. Industry Standards: The ACI Standards listed under references apply to Work of this Section. Where more severe requirements than those contained in the Standards are given in this Section or the Building Code, requirements of this Section or the Building Code shall govern. The Contractor shall keep a copy of ACI SP-15 - "Field Reference Manual" at the site.

C. Certifications

Acquire cement and aggregate from same source for all work. If a change in suppliers is required, a new mix submittal must be produced with the new material and submitted for approval.

D. Coordination

Coordinate this work with the work of other Divisions so that items to be installed are done so correctly and in proper sequence.

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Protect material from the elements and from other damage on the site before, during, and after installation. Store reinforcement in location to prevent rusting, etc.
- B. Insure proper identification of reinforcement after bundles are broken.
- C. Replace and pay for material and work damaged to the satisfaction of the Commissioner.
- D. Epoxy-Coated Reinforcing Bars
 - 1. Equipment for handling epoxy-coated bars shall have protected contact areas. Lift Bundles of coated bars at multiple pick-up points to minimize bar-to-bar abrasion from sags in the bundles.
 - 2. Do not drop or drag coated bars or bundles of coated bars. Store coated bars on protective cribbing.
 - 3. Fading of the color of the coating shall not be cause for rejection of epoxy-coated reinforcing bars. Coating damage due to handling, shipment, and placing need not be repaired in cases where the damaged area is 0.1 in² or smaller. Repair damaged areas larger than 0.1 in² with patching material. The maximum amount of damage, including repaired and unrepaired areas, shall not exceed 2% of the surface area of each bar. Bars with greater than 2% damaged areas will be rejected. Patch in accordance with the patching material manufacturer's recommendations. Repair ends of bars cut in the field with the patching material.

1.09 ENVIRONMENTAL REQUIREMENTS

- A. Adequately protect concrete placed during rain, sleet, or snow, or when the mean daily temperature falls below 40°F or rises above 90°F as provided in Article 3.07.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Rough Formwork: Shall be Commercial Douglas Fir, DFPA: 5/8" thick minimum.

- B. Overlaid Plyform Formwork: Shall be B-Matte Formguard by Simpson Timber Company or equal by Dayton Richmond Concrete Accessories.
- C. Smooth Form Finish Formliner: Shall be #340 Smooth Face by Greenstreak or equal by Architectural Polymers.
- D. Release Agent: VOC compliant material such as those of the Cresset Chemical Company for coating forms.
- E. Form Ties: Wire ties not permitted. Form ties for exposed concrete shall be adjustable, leave no metal closer than 1¹/₂" to the surface, and free of devices which leave holes or depressions larger than 7/8" back of exposed surface.
- F. Reinforcing Bars: All reinforcing bars shall be of deformed type of new billet steel conforming to current requirements of ASTM A615 Grade 60. No rail or re-rolled steel will be permitted. All bars shall be epoxy coated in accordance with ASTM A775.
- G. Welded Steel Wire Fabric: Wire Fabric shall conform to the requirements of ASTM A185. All wire mesh shall be epoxy coated in accordance with ASTM A884.
- H. Supports for Reinforcement: Support for reinforcement supported by ground shall be coated wire bar supports or bar supports made of dielectric material or other acceptable materials or precast concrete block, 4" square minimum, having a compressive strength equal to that of the concrete being placed. Wire bar supports shall be coated with dielectric material for a minimum distance of 2" from the point of contact with the epoxy-coated reinforcing bars.
- I. Cement: Shall conform to ASTM C150 Type II and shall be of the non-air-entrained type.
- J. Admixtures
 - 1. The use of admixtures shall comply with the requirements of Section BC 1903.6 of the 2008 NYC Building Code. The final soluble chloride content in concrete, percent by weight of cement, due to the addition of admixtures and other ingredients shall not exceed 0.05 at 28 days.
 - 2. Air-entraining admixtures shall conform to ASTM C260.
 - 3. Chemical admixtures shall conform to ASTM C494.
 - 4. Slag cement: ASTM C989, Grade 100 or 120. Shall be GranCem slag cement as manufactured by the St. Lawrence Cement Company. The amount of cement required by the Building Code may be reduced by 8% as per the code with the use of slag cement that has been reviewed and approved by the Commissioner.
- K. Water: Shall be clean potable water free of injurious foreign matter conforming to the requirements of Section BC 1903.4 of the Building Code.

- L. Aggregate: Aggregate shall conform to ASTM C33, No.57, No.67 or No.8. Maximum size of coarse aggregate shall conform to paragraph 3.3.2 of ACI 318.
- M. Curing Compounds:
1. Clear Curing and Sealing Compound (A.I.M. Regulations - VOC Compliant, 350 g/l): Liquid type membrane-forming curing compound, clear styrene acrylate type, complying with ASTM C1315, Type I, Class A, 25% solids content minimum. Moisture loss shall be not more than 0.40 Kg/m² when applied at 300 sq. ft./gal. Manufacturer's certification is required.
 2. Curing Compounds shall be "Super Diamond Clear VOX" by The Euclid Chemical Company or "Masterkure 100W" by Master Builders.
- N. Bonding Agent
1. Epoxy/acrylic resin that will not form a vapor barrier with the concrete with the following properties:
 - a. Bond strength of 1800 psi in 2 hours when tested in accordance with ASTM C882.
 - b. Flexural strength of 2000 psi in 28 days when tested in accordance with ASTM C78.
 - c. Tensile strength of 600 psi in 28 days when tested in accordance with ASTM C496.
 2. Bonding agent shall be "CR246 Sto Bonding and Anti-corrosion Agent" by Sto Concrete Restoration Division or Armatec 110 by Sika Corp.
- O. Expansion Joint Filler: Closed-Cell Polyurethane or Closed-Cell Expanded polyethylene Joint Filler - Resilient, compressible, semi-rigid; W.R. Meadow's Ceramar; A.C. Horn's Closed Cell Plastic Foam Filler, Code 5401; Sonneborn's Sonoflex F.
- P. Expansion Joint Sealant: Type 1A Sealant
1. For Horizontal Joints: Two-part, self-leveling polyurethane sealant for traffic bearing construction; Mameco's Vulkem 255, Pecora's Urexpan NR-200, or Bostik's Chem-Calk 550 or Products Research & Chemical's RC-2SL.
 2. For Vertical Joints: Two-part, non-sag polyurethane sealant; Mameco's Vulkem 227, Pecora's Dynatrol II, or Bostik's Chem-Calk 500 or Products Research & Chemical's RC-2.

2.02 MIXES

A. General

Concrete for all parts of the Work shall be of the specified quality capable of being placed without excessive segregation and, when hardened, of developing all characteristics required by the Specifications and Drawings.

B. Strength

Strength requirements given in Part 1 of this Specification are based on 28-day compressive strength, unless high early strength is specified, in which case required strengths are based on 7-day compressive strength.

C. Method of Proportioning

1. Proportion concrete mix of strength listed in B above in accordance with the requirements of Section BC 1905.2.3 of the 2008 NYC Building Code. The Testing Laboratory and the Engineer of Record will review the design mix.
2. Mix designs are specific to material used, concrete producer, and method of placement. Each mix design must be reviewed and accepted by the Engineer of Record.
3. Proportion and produce normal weight concrete to have a maximum slump of 4" or less. A tolerance of up to 1" above the indicated maximum shall be allowed for individual batches provided the average for all batches or the most recent 10 batches tested, whichever is fewer, does not exceed the maximum limit. The slump shall be determined by ASTM C143. Concrete containing High Range Water Reducer shall have a slump not exceeding 9", unless otherwise approved by the Engineer of Record. The concrete shall arrive at the job site at a slump of 2" to 3", be verified by the Commissioner's representative, and the HRWR admixture added to increase the slump to the approved level.
4. Concrete shall be air-entrained with an air content for the grading size of coarse aggregate as follows:
 - a. No.8.....7¹/₂%
 - b. No.57 or 67.....6%

Tolerance on air content as delivered shall be +1.5%.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Prior to placement of concrete, verify that the concrete cover over the reinforcement is that specified on Drawings.
- B. Verify that reinforcement and all other embedded items are provided and held securely, positioned accurately, and will not be a detriment to concrete placement.
- C. Examine all adjoining work on which this Work is in anyway dependent for proper installation and workmanship. Report to the Commissioner any condition that prevents the performance of this Work.

3.02 PROTECTION

- A. Protect concrete members on grade and the subgrade from freezing before and after installation. Provide blankets and other items necessary.
- B. Protect adjacent finish materials and previously poured concrete against spatter during concrete placement.
- C. Provide and maintain barricades and safeguards around openings, etc. to protect workmen from injury and to comply with all Building Code, OSHA, and other authorities having jurisdiction regulations.

3.03 FORMWORK

- A. Provide formwork wherever necessary to confine concrete to the required shapes shown on Drawings. Follow all procedures of Section 2 of ACI 301, ACI 347, and Section BC 1906 of the 2008 NYC Building Code. Formwork, reinforcement, and embedded items shall be clean of all accumulated mortar from previous concreting and other foreign material. Repair or replace any formwork as required.
- B. Cover the surfaces of the rough or overlaid plyform formwork (when used) with an approved form release agent that will effectively prevent absorption of moisture, prevent bond with the concrete, and which will not stain the concrete surfaces. Do not apply oil or release agents on formwork for concrete to receive additional concrete (such as at construction joints). Apply at a rate that will help achieve the finish specified below. Follow manufacture's recommendations.
- C. Adequately support and substantially brace formwork to hold lines and shape. Securely brace forms against lateral deflection. Formwork shall be tight jointed to prevent leakage of concrete.
- D. Place chamfer strips in the corners of forms to produce beveled edges (chamfers) on permanently exposed surfaces.

- E. Provide "Rough Form Finish" for surfaces not exposed to view. Use plywood or metal forms coated with a release agent.
- F. Provide "Smooth Form Finish" for surfaces exposed to view and the elements. Use dress, square-edged lumber with form liner or overlaid plyform forms with applicable release agent. Do not exceed manufacturer's recommendations for number of re-uses for the form liner or overlaid plyform. Arrange the forms or form liner in an orderly and symmetrical fashion, keeping the number of seams to a practical minimum.
- G. Remove forms in such a manner as to assure the complete safety of the structure as required by Section BC 1906.5 of the 2008 NYC Building Code. Formwork not supporting the weight of the concrete may be removed as soon as the concrete has hardened sufficiently to resist damage from removal operations and as required by H below.
- H. When repair of surface defects or finishing is required at an early age, remove forms as soon as the concrete has hardened sufficiently to resist damage from removal operations.

3.04 REINFORCEMENT

- A. Place reinforcement in accordance with CRSI "Placing Reinforcement Bars", Section 3 of ACI 301, and Section BC 1907.5 of the 2008 NYC Building Code.
- B. Unless otherwise permitted, welding of crossing bars (tack welding) for assembly of reinforcement is prohibited.
- C. Support and fasten together all reinforcement to prevent displacement by construction loads or placing of concrete.
- D. Lifting of bars and welded wire fabric into position during placement of concrete is not permitted.
- E. Where the concrete surface will be exposed to the weather in the finished structure, the portions of all accessories within 1/2" of the concrete surface shall be non-corrosive or protected against corrosion.
- F. Provide minimum protective cover given in Section BC 1907.7 of the 2008 NYC Building Code if not indicated on Drawings.
- G. All splices not shown on the Project Drawings shall be shown on the shop drawings and approved by the Engineer of Record.
- H. All embedment lengths not shown on the Project Drawings shall be shown on the shop drawings and approved by the Engineer of Record.

3.05 PREPARATION

- A. Remove ice, excess water, trash, and rubbish from forms.

- B. Remove hardened concrete from inner surfaces of conveying equipment and all formwork, reinforcement, and dowels.
- C. Prepare previously placed concrete to be in contact with new concrete in the manner described under "Construction Joints".
- D. Prepare existing concrete to be in contact with new concrete by roughening and cleaning the surface and applying a bonding agent. Surface must be free of laitance. Concrete must be placed after agent cures and within 24 hours of applying bonding agent in accordance with the directions of the manufacturer.
- E. Do not place concrete on frozen ground.

3.06 JOINTS AND EMBEDDED ITEMS

A. Construction Joints

- 1. Make joints not shown on Drawings at locations that will least impair the strength of the structure and comply with requirements of Section BC 1906.8 of the 2008 NYC Building Code. Such location is subject to the approval of the Engineer of Record.
- 2. Continue reinforcement across joints. Provide longitudinal keys at least 1 $\frac{1}{2}$ " deep in walls and provide other keys as required.
- 3. Thoroughly clean concrete surface of oil, grease, and other contaminants and remove all laitance prior to placement of adjoining concrete. Roughen surface of the concrete in an approved manner that will expose the aggregate uniformly and will not leave laitance, loosened particles of aggregate, or damaged concrete at the surface. Dampen surface immediately prior to placement.

B. Expansion Joints

- 1. Do not extend reinforcement or other embedded metal items bonded to concrete continuously through expansion joint. Provide smooth dowels greased on one end at the joints or insert into pvc sleeve of length greater than the dowel length by .75" minimum.
- 2. Provide expansion joint filler at the joint of the sizes indicated on the Drawings or specified herein.

C. Embedded items

- 1. Place all fence sleeves, shoes, and other embedded items required for the Work of other Divisions or for their support prior to concreting.

2. Provide ample notice and opportunity for items of other Division to be introduced and/or furnished for installation before concrete is placed. Coordinate the Work of the other Divisions so all items are placed in their proper location.
3. Set metal pipe sleeves, sockets, shoes, etc. into concrete to receive fence posts or any other items, all as indicated on details.

3.07 MIXING AND PLACING CONCRETE

A. General

1. Notify Commissioner at least 48 hours in advance of each concrete placement. Do not place concrete without approval of the Commissioner.
2. Do not allow rainwater to increase mixing water nor damage surface finish.
3. When placing concrete in cold weather (below 40°F), concrete shall have an accelerating admixture added.
4. Production of concrete, including batching and mixing, shall be done in accordance with the requirements of Section 4 of ACI 301 and Section BC 1905.8 of the Building Code.
5. Placement of concrete shall be done in accordance with the requirements of Section 5 of ACI 301 and Sections BC 1905.9 through 1905.13 of the Building Code. All consolidation shall be done by vibration.

B. Mixing

1. Batch, mix, and transport ready-mixed concrete in accordance with the appropriate sections of ASTM C94 and Section BC 1905.8.2 of the 2008 NYC Building Code. Truck mixers and agitators shall meet the requirements of the Truck Mixers Manufacturer's Bureau or shall comply with Section 8.1.2 of ASTM C94 and shall be NYSDOT approved. All trucks shall have working revolution counters and site gages.
2. Batch and mix other concrete in accordance with subsection 4.3.1 of ACI 301.
3. Use of chemical admixtures must be approved by the Engineer of Record.
4. Unless otherwise approved by the Engineer of Record, concrete shall be deposited within 1½ hours or 300 revolutions of the mixing drum, whichever comes first, after introduction of water to the cement or cement to the aggregate. When the ambient temperature rises above 90°F, the time shall be decreased to 1 hour.
5. Tempering and control of mixing water

- a. Mix concrete only in quantities for immediate use. Concrete which has started to set shall not be retempered, but shall be discarded. Water shall not be added at the site.
 - b. For concrete containing HRWR (Superplasticizer), if loss of slump occurs, HRWR may be redosed at the site as long as a "flash set" has not occurred. Redosage procedures must be discussed and approved by the Engineer of Record and the admixture manufacturer.
- C. Placing: Place concrete in accordance with ACI 304R, ACI 318, and Sections BC 1905.9 and BC 1905.10 of the 2008 NYC Building Code.
1. Consolidate all concrete by vibration so that the concrete is thoroughly worked around the reinforcement, around embedded items and into corners of forms, eliminating all air or stone pocket or weakness. Internal vibrators shall be the largest size and most powerful that can be used in the Work, as described in Table 5.1.5 of ACI 309R, with a minimum frequency of 7000 revolutions per minute and shall be operated by competent workmen. Over-vibrating and use of vibrators to transport concrete within forms is not permitted. Insert and withdraw vibrators at many points, from 18" to 30" apart. At each insertion, the duration shall be sufficient to consolidate the concrete but not sufficient to cause segregation, generally from 5 to 15 sec duration. Keep a spare vibrator on the job site during all concrete placing operations.
 2. Cold Weather Concrete Protection

When the mean daily temperature of the atmosphere is less than 40°F during concreting, or within 24 hours thereafter, follow the procedures outlined in ACI 306R to protect the concrete. Temperature of the plastic concrete shall be no lower than 55°F. Heat all forms, reinforcing steel, and surfaces to receive concrete above the freezing point and keep them completely free of frost, snow, and ice.
 3. Hot Weather Protection: When the mean daily temperature of the atmosphere is over 90°F during concreting, follow the procedures outlined in ACI 305R to protect the concrete.

3.08 FINISHING OF FORMED SURFACES AND REPAIR OF SURFACE DEFECTS

A. General

1. Remove forms as soon as practicable.
2. Repair surface defects, including tie holes and cracks, immediately after form removal. Patches shall be of quality to match the specified finish.
3. Remove oil, grease, compounds, and other contaminants from surfaces and areas to be repaired.

4. Provide finishes specified below immediately after form removal.
5. Provide curing and protection.

B. Repair of Surface Defects

Repair surface defects in accordance with subsection 5.3.6 of ACI 301. At the Commissioner's discretion, repair mortars and coatings shall be employed to rectify defects. Materials shall be as selected by the Commissioner.

C. Tie Holes and Other Repairs

1. Remove ties, nails, and other form accessories below the concrete surface when the surface is exposed to view and/or the elements. For surfaces not exposed to view or the above mentioned conditions, remove metal to the surface.
2. Undercut surfaces of holes. After cleaning and thoroughly dampening the holes, fill them solid with the patching mortar. The mortar shall match the color of the existing concrete for concrete exposed to view as specified in paragraph B above.

D. Formed Finishes

1. Rough Form Finish: Provide for concrete not exposed to view.
 - a. Repair concrete surface as indicated above.
 - b. Chip or rub off fins exceeding 1/4" in height.
2. Smooth Form Finish: Provide for concrete exposed to view. Provide for concrete exposed to view. Concrete shall have a CS 3 or better finish as developed by the Cresset Chemical Company and shall have been placed without the need for patching or removal of fins, etc.
 - a. Repair concrete surfaces as indicated above.
 - b. Chip or rub off fins completely and grind smooth.
 - c. Provide smooth rubbed finish as follows:
 1. Produce on newly hardened concrete no later than the day following form removal.
 2. Wet the surfaces and rub with a No. 16 carborundum brick or other equal abrasive to obtain a smooth, even surface of uniform appearance without applying any cement or other coating.
 3. Obtain the final finish by thoroughly rubbing with a No. 30 carborundum brick. The surface shall be wet for a period of 3

days. The Commissioner shall be the sole judge if the finish is proper.

E. Acceptance of Concrete Finish

If the finish produced is not acceptable to the Commissioner, the Contractor shall be responsible for all costs incurred to produce an acceptable finish by whatever means determined by the Commissioner. Remove stains, rust, efflorescence, and other surface deposits to the satisfaction of the Commissioner.

3.09 PAVEMENTS AND SLABS

A. General

1. Mixing and placing shall be carefully coordinated with finishing. Do not place concrete more rapidly than it can be spread, straightedged, and darbied or bull floated. Provide leveling, floating, troweling, etc. at the correct time interval after pouring to prevent dusting and a non-durable surface as specified in ACI 302.1R. These operations must be performed before bleeding water has an opportunity to collect on the surface.
2. To obtain good surfaces and avoid cold joints, the size of finishing crews shall be planned with due regard for the effects of concrete temperature and atmospheric conditions on the rate of hardening of the concrete.

B. Finishing

1. Slope pavements uniformly toward drains. If pitch or elevations are not shown on Drawings, provide a minimum of 1/8" per foot.
2. Finish pavement surface to a true smooth plane and texture with a toothed roller or float with a wood float. Score concrete pavement in squares of approximately 5'-0" and/or as shown on Drawings. Each rectangular slab shall have all edges neatly rounded with proper tools and be bounded on all sides by a troweled border about 1" in width.
3. Level ramp, step and driveway surfaces with wood float and follow with a broom finish perpendicular to direction of traffic.

C. Placement

1. General

- a. Aggregate base material and preparation is given in Section 312100.
- b. Where pavements to remain are damaged or destroyed as a result of the Work, patch, repair, or replace as required. Color to match existing.

- c. Subgrade and/or aggregate base shall be free of frost before concrete placing begins.
 - d. Control Joints:
 - 1) Primary Method: Soff-Cut System method, by Soff-Cut International, Corona, CA (800)776-3328. Finisher must have documented successful experience in the use of this method prior to this project. Install cuts within 2 hours after final finish at each saw cut location. Use 1/8 inch thick blade, cutting 1¹/₄ inch into slab.
 - 2) Optional Method (Where Soff-Cut System Method Equipment is Not Available): Properly time cutting with the set of the concrete. Saw-cut control joints within 12 hours after finishing. Start cutting as soon as the concrete has hardened sufficiently to prevent aggregates being dislodged by the saw. Complete cutting before shrinkage stresses become sufficient to produce cracking. Use 1/4 inch thick blade, cutting 1/4 slab depth.
 - e. Dampen subgrade or aggregate base immediately prior to placement of concrete.
 - f. Pour slab to required thickness after installation of reinforcement.
2. Pavements
- a. Provide 4" thick concrete slab unless otherwise indicated.
 - b. Provide 6x6-W2.9xW2.9 WWF placed 1¹/₂" from top surface.
3. Driveways
- a. Provide 7" thick concrete slab.
 - b. Provide 4x4-W4xW4 placed 2" from top surface.
4. Expansion joints
- a. Provide expansion joints for all exterior concrete pavement, slabs under asphalt, driveways, etc. specified under this Section. Expansion joints shall occur at intervals not to exceed 20' in each direction or as indicated on Drawings.
 - b. Provide continuous expansion joints at the following locations: Driveways and other concrete pavements abutting area walls, buildings, retaining or any other walls, check pieces, steps, curbs.

- c. Expansion joint shall be 1/2" wide, full depth minus 1/4" to allow for the poured joint sealer.

3.10 MISCELLANEOUS CONCRETE WORK

- A. Provide curbs, footings, walls, ramps, and other miscellaneous concrete work.

3.11 PATCHING AND BONDING TO EXISTING CONCRETE

- A. Provide bonding agent whenever new concrete is to be poured against existing concrete, whenever the time between concrete pours is longer than that allowed for proper bond, and wherever bonding agent is indicated on the Drawings to be applied.
- B. Remove loose concrete from surface to be bonded with new concrete and clean. Remove rust from reinforcement and structural steel by power chipping and power driven brushes.
- C. Apply bonding agent in accordance with manufacturer's specifications. Pour concrete as soon as bonding agent has cured and within 24 hours after placement. If the 24-hour period has elapsed, then the bonding agent must be reapplied.

3.12 CURING AND PROTECTION

A. General

- 1. Begin curing concrete immediately after placement and finishing. Protect all freshly deposited concrete from premature drying and excessively hot or cold temperatures and maintain it with minimal moisture loss at a relatively constant temperature for the period of time necessary for the hydration of the cement and proper hardening of the concrete. Detailed procedures are given in ACI 308.
- 2. Do not apply curing compounds to surfaces receiving additional concrete. Provide only wet curing.

B. Procedure

- 1. Concrete surfaces not in contact with forms:
 - a. Ponding or continuous non-manual sprinkling.
 - b. Absorptive mat or fabric, sand, or other covering kept continuously wet.
 - c. Curing compounds conforming to ASTM C1315.
- 2. Concrete surfaces in contact with forms:
 - a. Minimize moisture loss from forms exposed to heating by the sun by keeping forms wet until they are removed.

- b. After form removal, cure with one of the methods listed in 1 above.
 3. Continue curing until a total of 7 days has elapsed during which the temperature of the air in contact with concrete has remained above 50°F. Prevent rapid drying during and at the end of the curing period.
 4. Remove all curing compounds with cleaners recommended by curing compound manufacturer.
- C. Cold Weather Curing
- Concrete must be protected from water loss. This shall be accomplished by the application as soon as possible without harm to the concrete surfaces of either (a) exhaust steam, or vapor-resistant paper or polyethylene film, or (b) curing compounds. In all other respects, curing shall conform to applicable provisions of this Section. Concrete temperature shall be maintained between 50°F and 70°F.
- D. Hot Weather Curing
1. During the period June 1 to October 1 or when hot weather conditions require it, maintain continuous water curing for a minimum period of twenty-four hours. Provide for wind breaks, shading, and other necessary provisions.
 2. After 24 hours, curing shall be by one of the methods specified under B above. In all other respects, curing shall conform to applicable provisions of this Specification. Upon termination of the specified moist curing, every effort should be made to reduce the rate of drying by avoiding air circulation.
- E. Protection from mechanical injury: Protect concrete from mechanical disturbances during curing period as described under "Protection and Cleaning".

3.13 TOLERANCES

- A. Construct formwork so that concrete surfaces will conform to the tolerance limits listed in ACI 117.
- B. Establish and maintain in an undisturbed condition and until final completion and acceptance of the project sufficient control points and bench marks to be used for reference purposes to check tolerances.
- C. Place reinforcing bars in accordance with the tolerances given in Section BC 1907.5.2 of the 2008 NYC Building Code.
- D. Move bars as necessary to avoid interference with other reinforcement, conduits, or imbedded items. If bars are moved more than one bar diameter, or enough to exceed the above tolerances, the resulting arrangements are subject to approval by the Engineer of Record.

- E. Place concrete to meet tolerances specified in ACI 117, unless specified otherwise herein.

3.14 FIELD QUALITY CONTROL

A. Tests

Tests to be performed by the Commissioner's Testing Laboratory during construction are as follows:

1. Compliance of materials to Specifications tested from production samples.
2. Determination of the slump of the concrete for each sample taken and whenever consistency of the concrete appears to vary using ASTM C143. The Testing Laboratory will reject any concrete that does not meet the slump requirements.
3. Determination of water content of freshly mixed concrete utilizing the procedure of AASHTO TP23. Concrete that does not meet the maximum water to cement ratio or the proportions given in the approved design mix will be immediately rejected regardless of slump.
4. Strength tests: The frequency of conducting strength tests of concrete shall be in accordance with Section BC 1905.6.2 of the 2008 NYC Building Code, with additional cylinders taken for an additional strength test and one cylinder for a 7-day break. Strength tests shall be performed for each 50 cubic yards, or portions thereof, of concrete placed in any one day's concreting. Specimens will be stored at the site in the insulated curing box provided by the Contractor. Each group of specimens is considered one strength test. One cylinder will be broken at 7 days for information. Strength test shall be at 28 days for acceptance. The cylinders for the additional strength test will be utilized for either a strength test or other types of testing only if the 28-day breaks are low or durability of the concrete is in question. If one specimen in a test manifests evidence of improper sampling, molding, or testing, it shall be discarded and the average strength of the remaining cylinders shall be considered the test result. Should all specimens in a test show any of the above defects, the entire test shall be discarded.
5. Determination of air content and unit weight of concrete sample for each strength test in accordance with ASTM C173 or C231 and ASTM C138.
6. Determination of temperature of concrete sample for each strength test.
7. Determination of water soluble chloride content in the concrete, percent by weight of cement, of each sample.

B. Inspection

1. Refer to "Source Quality Control" for responsibility and procedure.

2. The lab will inspect placement of reinforcement and thickness of members prior to placement.
3. Keep a record of all inspections, the name of the persons making them, and the name of the foreman in charge of formwork at the site. Submit to the Commissioner's representative on the site a copy of the inspection records prior to each concrete placement.
4. The Contractor shall cooperate in the making of all tests by the Laboratory Technician by:
 - a. Providing an insulated curing box of sufficient size and strength to contain all specimens made in any four consecutive working days. The Contractor shall furnish an outlet to provide the necessary temperature in the storage box, pending delivery to the Laboratory of the test cylinders.
 - b. Providing a buggy for transporting the concrete taken from the mixer (and/or point of placement) to the location of the curing box for testing and the preparation of specimens.
 - c. Protecting the property of the Laboratory and keeping test specimens free from vibration and other disturbances.
 - d. Providing a microwave of the size specified in AASHTO TP23 and a portable generator.

C. Evaluation and Acceptance of Concrete

1. Strength tests on concrete will be evaluated according to Section BC 1905.6.3.3 of the 2008 NYC Building Code by the Engineer of Record. If the tests fail, the adequacy of the concrete will be checked according to the requirements of Section BC 1905.6.5 of the Building Code. Concrete exposed to the elements with indications of poor durability will be rejected regardless of strength and will be subject to petrographic examination.
2. Pay for additional costs of labor and materials required at the job for all damages resulting from testing. Remove and replace concrete work that is not of adequate strength or weather resistance and cannot be made to work by remedial methods acceptable to the Commissioner at own cost. The Contractor shall be held responsible for all delays and damages to the work of other Divisions that occur as a result of non-conformance.
3. Pay for all expenses borne by the Commissioner resulting from low strength test procedures or evidence of poor durability (such as high slump) specified above.

3.15 PROTECTION AND CLEANING

- A. During the curing period, and thereafter as conditions may require, protect the concrete from damaging mechanical disturbances, particularly excessive load stresses, heavy shock, and excess vibration. Protect all finished concrete surfaces from damage caused by construction equipment, materials or methods, and by rain or running water.

3.16 ACCEPTANCE OF CONCRETE WORK

- A. The provisions of Subchapter 1.6 of ACI 301 apply to the acceptance of the concrete work.
- B. Concrete work judged inadequate by structural analysis, core test, results of load test or deemed unacceptable due to appearance or durability concerns shall be repaired, reinforced with additional construction if so directed by the Engineer of Record, or be replaced if so directed by the Engineer at the Contractor's expense.

END OF SECTION

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SECTION 330513

PRECAST CONCRETE DRAINAGE STRUCTURES

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Provide precast concrete drainage structures as indicated on the Drawings and as specified herein. Subsequently, in this Section, these items will be referred to as "precast units".
- B. Provide all frames, covers, traps, steps/rungs, and other miscellaneous items to be fabricated with or installed on the precast units.

1.02 RELATED SECTIONS

- A. Concrete Curbs & Pavements Section 321416

1.03 REFERENCES

- A. American Society for Testing and Materials (ASTM)
- B. Federal Specifications (FS)
- C. American Association of State Highway and Transportation Officials (AASHTO)
- D. Standard Sewer Specifications – The City of New York, Department of Design and Construction, Division of Infrastructure (NYC DDC)
- E. Sewer Design Standards - The City of New York City, Department of Environmental Protection (NYC DEP)
- F. International Concrete Repair Institute (ICRI)

1.04 DESIGN REQUIREMENTS

- A. Precast units shall meet NYC DEP requirements and be capable of withstanding an AASHTO HS20 loading.
- B. Precast units shall be manufactured using normal weight concrete with a minimum compressive strength of 4000 psi, air-entrained, and a maximum water to cement ratio of 0.42 as per Class 40 concrete of the NYC DDC Standard Sewer Specification.

1.05 QUALITY ASSURANCE

- A. Qualifications

1. Precast Unit Manufacturer: Company specializing in the production of precast concrete site structures shall have a minimum of three years experience.
2. Concrete Laboratory: Concrete laboratory providing design mixes and quality control inspection shall be New York City licensed and shall meet the requirements of ASTM E329.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, and handle precast units in such manner so as not to damage the units.
- B. Materials shall be delivered in manufacturer's sealed and undamaged packaging. Each package shall contain clear and legible labels that meet requirements of local, state and federal regulations identifying manufacturer's name, product name, quantity of material, and batch number.
- C. Protect material from the elements and from other damage at site.
- D. Replace and pay for material and work damaged to the satisfaction of the Commissioner.
- E. Do not apply grout at temperatures below 40°F. Follow manufacturer's recommendations for placement temperatures, which is typically at an optimum range of 50°F to 80°F. Provide hot and cold weather procedures at other temperatures.

PART 2 - PRODUCT

2.01 MANUFACTURERS

- A. Precast Units
 1. Afco Precast Corp., Middle Island, NY 11953
 2. Coastal Pipeline Products Corp., Calverton, NY 11933
- B. Coatings
 1. Tnemec Company, Inc. Kansas City, MO 64141
 2. Carboline Company St. Louis, MO 63144
 3. Sherwin Williams Corp. Cleveland, OH 44101
 4. M. A. B. Paint Broomall, PA 19008.
 5. Mercury Paint Corp. Brooklyn, NY 11203
- C. Cast Iron Frames and Covers

1. Campbell Foundry Co. Harrison NJ 07029
2. Neenah Foundry Co. Neenah WI 54956
3. McKinley Iron Works, Inc. Worth TX 76101

D. Precast Unit Steps/Rungs

1. Campbell Foundry Co. Harrison NJ 07029
2. Neenah Foundry Co. Neenah WI 54956
3. McKinley Iron Works, Inc. Worth TX 76101
4. M.A. Industries Inc. Peach Tree City, GA 30269

E. SELF-SEALING BUTYL GASKET

1. Hamilton Kent Kent, OH 44240
2. Allstate Gasket & Packing, Inc. Hicksville, NY 11801
3. Darcoid Co., Inc. Hicksville, NY 11801

F. Expansion Screw Anchors

1. Simpson Strong-Tie Co., Inc. Addison, IL 60101
2. Powers Fastening, Inc. New Rochelle, NY
10802
3. Hilti Corp. Tulsa, OK 21148

G. Grout

1. Sika Corp., Lyndhurst, NJ 07071
2. Euclid Chemical Company, Cleveland, OH 44110
3. Five Star Products, Inc., Fairfield, CT 06824

2.02 MATERIALS

A. Cement

Shall conform to ASTM C150, Type II, and shall be of the non air-entrained types:

B. Admixtures

1. The use of admixtures shall comply with the requirements of Section BC 1903.6 of the 2008 NYC Building Code. The final soluble chloride content in concrete, percent by weight of cement, due to the addition of admixtures and other ingredients shall not exceed .05 at 28 days.
2. Air-entraining admixtures shall conform to ASTM C260.
3. Chemical admixtures shall conform to ASTM C494.
4. Slag cement: ASTM C989, Grade 100 or 120. Shall be GranCem slag cement as manufactured by the St. Lawrence Cement Company. The amount of cement required by the Building Code may be reduced by 8% as per the code with the use of slag cement that has been reviewed and approved by the Commissioner.

C. Water

Shall be clean potable water free of injurious foreign matter conforming to the requirements for water specified in ASTM C94.

D. Aggregates

Fine and coarse aggregates shall be regarded as separate ingredients. Each size of coarse aggregate, as well as the combination of sizes when two or more are used, shall conform to the appropriate grading requirements of the applicable ASTM specifications. Maximum size of coarse aggregate shall conform to paragraph 3.3.3 of ACI 318. Aggregates shall conform to ASTM C33 and be of Size No.67 or No.8.

E. Concrete Reinforcement

1. Reinforcing Bars: All reinforcing bars shall be of deformed type of new billet steel conforming to current requirements of ASTM A615, grade 60. No rail or re-rolled steel will be permitted.
2. Welded Steel Wire Fabric: Wire Fabric shall conform to the requirements of ASTM A185.

F. Manhole/Detention Basin Frame and Cover

Neenah Foundry Co. #R-1656, cast iron frame and cover with Type "G" tightening bar (pentagonal head) or equal product manufactured by Campbell Foundry or McKinley Iron Works, Inc.

G. Catch Basin Frame and Cover

Neenah Foundry Co. #R-3573-2Q, cast iron frame and grate, with Type "G" tightening bar (pentagonal head) or equal product manufactured by Campbell Foundry or McKinley Iron Works, Inc.

H. Traps

Neenah Foundry Co. # R-3701 trap, cast iron or equal product manufactured by Campbell Foundry or McKinley Iron Works, Inc.

I. Precast Unit Steps/rungs:

1. Campbell Foundry Co. Pattern #2592 (cast iron, diamond non-skid design) or equal product manufactured by Neenah Foundry or McKinley Iron Works, Inc. with stainless bolts and washers with Ackerman-Johnson Expansive Screw Anchors (Cat. No. 762-62, with non-corrosive brass cones) and 1/4-inch thick neoprene gaskets.
2. M.A. Industries Inc. Model PS-4-B copolymer polypropylene plastic surrounding 1/2-inch diameter grade 60 reinforcement.

J. Self-sealing Butyl Gasket

7/8" x 7/8" or 1" diameter conforming to Fed. Spec. SS-S-00210.

K. Expansion Screw Anchors with malleable lead shields in accordance with Federal Specifications FF-S-325C, Group 1, Type 1, Class 1.

L. Interior Coating

Two component high solids epoxy polyamide coating in accordance with ANSI/NSF Standard 61 meeting the performance characteristics of Tnemec Series 66 Hi-Build Epoxoline or Carboline Carboguard 888.

M. Exterior Coating

Two component coal tar-epoxy coating meeting the performance characteristics of Tnemec 46-413 Tneme-Tar or Carboline Bitumastic 300M.

N. Grout

1. Grout shall be non-shrink, non-metallic, cement based material meeting ASTM 1107 and CRD C-621 with the following characteristics:
 - a. Minimum compressive strength of 6000 psi @ 28 days when testing in accordance with ASTM C109 or CRD C-621.
 - b. Slight positive expansion when tested in accordance with CRD C-621 or ASTM C827.

2. Products:

- a. SikaGrout 212 by Sika Corp.
- b. Dry Pack Grout and NS Grout by Euclid Chemical Company
- c. "Five Star Grout" by U.S. Grout Corp.

2.03 MIXES

A. General

Concrete for all parts of the Work shall be of the specified quality capable of being placed without excessive segregation and, when hardened, of developing all characteristics required by the Specifications and Drawings.

B. Strength

Strength requirements given in Part 1 of this Specification are based on 28-day compressive strength.

C. Provide the following air content for the grading size of coarse aggregate as follows:

1. No.8.....7¹/₂%
2. No. 57 or 67.....6%

Tolerance on air content as delivered shall be +1.5%.

2.04 FABRICATION

- A. Fabricate the precast units to the sizes and shapes shown on the Drawings, with pipe openings, precast collars, rungs/steps, lift inserts and other items as indicated.
- B. Cast units in tight, well-built forms; vibrate concrete to ensure smooth, laitance-free surfaces.
- C. Finished units shall be warp-free, of uniform thicknesses with shapes, sizes, pipe openings, inserts and all other details as shown on the Drawings and as specified herein.
- D. Provide 5/8" threaded dowels at pipe opening locations to provide attachment for piping.
- E. Provide scoring for bond on bottom slab of the precast units as detailed on the Drawings. Provide keys at all joints.

2.05 PROTECTIVE COATINGS

- A. Interior coating for precast units

1. Surface preparation
 - a. Surfaces shall be cleaned free of dust, oil, grease, laitance, or any other foreign matter.
 - b. Surfaces shall be acid etched or whipblasted to provide an ICRI CSP 1 surface prep.
2. The epoxy coating is to be applied in two applications. While the surface preparation is to be done at the plant, the contractor has the option of having the first application of the coating done in the plant or having both applications done in the field. Apply at a rate of 4.0 mils DFT per coat. Apply in strict accordance with the manufacturer's recommendations.

B. Exterior coating for precast units

Provide for units and surfaces specified to receive it.

1. Surface preparation
 - a. Surfaces shall be cleaned free of dust, oil, grease, laitance, or any other foreign matter.
 - b. Surfaces shall be acid etched or whipblasted to provide an ICRI CSP 1 surface prep.
2. The coal tar-epoxy coating is to be applied in two applications. While the surface preparation is to be done at the plant, the contractor has the option of having the first application of the coating done in the plant or having both applications done in the field. Apply at a rate of 8.0 mils DFT per coat. Apply in strict accordance with the manufacturer's recommendations.

2.06 SOURCE QUALITY CONTROL

- A. Special inspection and testing shall be conducted at the manufacturer's plant by a Testing Laboratory approved by the Commissioner.
- B. Special inspection and testing shall be in compliance with the 2008 New York City Building Code and shall be in compliance with the standards of construction established by the Bureau of Sewers for manhole construction, and shall include, but not be limited to the following procedures:
 1. All testing shall be in accordance with New York City Building Code requirements and the applicable ASTM's.
 2. Perform daily batch plant inspection to ascertain that proper concrete material gradations are performed. Sieve both fine and coarse aggregates to check gradations.

3. Calculate fineness modulus and percent moisture on a daily basis.
 4. Verify mill certificates for cement.
 5. Verify mix designs by checking computer printout tapes or scale measurement proportioning of materials.
 6. Inspect formwork and reinforcement for manhole, risers, bases, collars and covers.
 7. Inspect methods and concrete placement.
 8. Prepare a minimum of four concrete cylinders for each 50 yards batched.
 9. Tag and verify, independently, manholes and catch basins and ancillary parts with each group of cylinders.
 10. Tag and report cylinders with corresponding manhole castings on a daily basis.
 11. Check slump, air content, weight per cubic foot and temperature for each batch prepared.
 12. Store cylinders in a proper humidified room under Laboratory's directions.
 13. Inspect and verify that formwork remains intact in a properly controlled area for 24 hours minimum.
 14. Cap and break cylinders at 7 and 28 days or until full design strength is achieved. At that time break a minimum of two cylinders. Store the remaining cylinders prepared in a batch for 28 days before discarding.
 15. Inspect completed precast unit components for defects and voids prior to shipment to the job-site.
 16. Monitor material and finish product handling to assure that unnecessary vibrations are not imparted to the cast concrete.
- C. The Contractor shall submit to the Commissioner before delivering the precast units to the jobsite, the following:
1. Copies of daily logs of the testing laboratory, indicating pertinent information.
 2. Certification from the testing laboratory that construction of the precast units is in compliance with the requirements of the Department of Design and Construction, Division of Infrastructure, and Department of Environmental Protection of the City of New York.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install precast units at locations shown on the Drawings; place level and plumb, and to proper depths. Catch basins are to be placed to ensure that the long direction of the slot of the grating will be perpendicular to the flow of pedestrian traffic. Coordinate with pipe connection locations. Install butyl gaskets at joints on both horizontal surfaces of keyed joint, in such manner to seal each joint completely, providing adequate lap. One 9" or less diameter opening per unit is permitted to be core drilled in the field due to fabrication errors. Any other unit requiring greater diameter or greater opening shall be rejected.
- B. Install precast collars and manhole brick set in Type M mortar to allow for placement of the covers at the correct rim invert elevation.
- C. Install cast iron frames and covers, and traps, as detailed on the Drawings and as recommended by the manufacturer. Grates are to be placed with the long direction of the slot perpendicular to the flow of pedestrian traffic when placed in walkways.
- D. Units with large spalls (greater than 2" in depth and 2 SF in area) and openings greater than 9" in diameter placed in the wrong location are rejected and shall be replaced. Minor spalls and openings 9" or less placed in the wrong location are to be patched as follows:
- a. Roughen surface or perimeter of opening to a fractured aggregate surface.
 - b. In openings, drill and install a minimum of four 1/2" dia ss expansion anchors with 4" extension.
 - c. At openings, install butyl sealant around perimeter.
 - d. Apply slurry coat of hydraulic repair mortar of type approved by the A/E of Record to all surfaces to receive repair mortar.
 - e. Install hydraulic repair mortar to match existing contours and thicknesses of members.
- E. After installation of the precast units and before backfilling, provide protective coatings as follows:
1. Interior: If the first coat was applied in the shop, lightly clean and roughen the surface and touch up areas of damage with the same coating. Apply a second coat at 4.0 mils DFT. IF both coats are to be applied in the field, apply each coat at 4.0 mils DFT per coat, allowing the manufacturer's recommended cure time between coats. If second coat is not installed within manufacturer's specified time parameters, lightly roughen prior to second coat.
 2. Exterior, for those surfaces and units designated to receive it: If the first coat was applied in the shop, lightly clean and roughen the surface and touch up areas of

damage with the same coating. Apply a second coat at 8.0 mils DFT. IF both coats are to be applied in the field, apply each coat at 8.0 mils DFT per coat, allowing the manufacturer's recommended cure time between coats. If second coat is not installed within manufacturer's specified parameters, lightly roughen prior to second coat.

- F. Make pipe-to-precast unit connections using non-shrink grout.

3.02 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 that prevents the performance of this Work.
- B. Repair surfaces to receive grout as approved by the Engineer of Record to ensure that the maximum allowed thickness of material is not exceeded.

3.03 SURFACE PREPARATION

- A. Concrete surface shall be free of all loose material.
- B. Steel shall be clean and free of corrosion.
- C. Surfaces shall be free of oil, grease, loose paint, corrosive deposits, dust, laitance and other contaminants.
- D. Sleeves and holes shall be clean of water, dust and debris.

3.04 APPLICATION

- A. Perform all grouting in accordance with the recommendations of ACI, CSI, and the grout manufacturer's published specifications for site preparation, product mixing, and placing. For grouting in weather below 50°F, contact manufacturer for cold weather instructions.
- B. Arrange with the manufacturer of the grout for the services of a qualified field representative to instruct the work crews in the mixing of components, preparation of surfaces, technique of installation, and inspection procedures.
- C. Place grout at a no more than "flowable" consistency, carefully using the manufacturer's recommended water content.
- D. Locations
1. Provide grout 1" thick minimum, 2" thick maximum, unless otherwise specified, under column base plates and beam bearing plates. Work grout under plates to provide full and even bearing. Grouting is to be done prior to placement of any concrete on the structure.

2. Provide grout for grouting fence posts into sleeves. Grout is to be placed at a "plastic" consistency and crowned at the post to shed water away from the post onto the adjoining concrete surface.
 3. Provide grout for grouting bars in concrete and for "Dry Packing". Follow manufacturer's procedure for mixing and installation.
 4. Provide grout under equipment bases.
 5. Provide for grouting in pipes entering precast units.
 6. Provide grout wherever else it is indicated on Drawings or Specifications.
- E. Follow manufacturer's instructions for curing.

3.05 PROTECTION AND CLEANING

- A. Clean all adjacent area of excess material and clean all floors and walls of powder and droppings.

3.06 FIELD QUALITY CONTROL

- A. The Commissioner's Testing Laboratory will inspect the grouting procedure and take cube specimens to test compressive strength.
- B. The Commissioner will inspect and reject any that are of inadequate strength or contains cracks or other defects. These areas shall be fixed at contractor's expense.
- C. Engage the services of the material manufacturer's representative to instruct in the proper mixing and usage of the material to ensure the grout is placed at the correct consistency and manner.

END OF SECTION

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SECTION 334100

STORM DRAINAGE SYSTEMS

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. Furnish labor, materials, equipment, and services to install storm drainage piping on site. All piping shall be installed complete with couplings, rings, collars, fittings etc., as required by the Drawings and as specified herein.

1.02 RELATED SECTIONS

- A. Earthwork..... Section 312100

1.03 REFERENCES

References and industry standards listed in this Section are applicable to the Work. Unless more restrictive criteria or differing requirements are explicitly stated in the Specifications, or mandated by governing codes or regulations, the recommendations, suggestions, and requirements described in the referenced standards shall be deemed mandatory and applicable to the Work.

- A. American Society of Testing and Materials (ASTM) standards, latest editions.
 - A74 Standard Specification for Cast Iron Soil Pipe and Fittings.
 - C76 Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
 - C443 Standard Specification for Joints for Circular Concrete Sewer and Culvert pipe, Using Rubber Gaskets.
 - D3212 Standard Testing Method for Watertight Joint
 - D2321 Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers & Other Gravity-Flow Applications
 - F477 Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
- B. American National Standards Institute (ANSI) standards, latest editions.
 - A21.10
 - A21.11

A21.51

- C. Standard Sewer Specifications – The City of New York, Department of Design and Construction, Division of Infrastructure (DDC)

1.04 QUALITY ASSURANCE

A. Qualifications

1. Manufacturer: Company specializing in the production of each type of pipe specified shall have a minimum of three years experience.
2. Installer: Company specializing in the installation of each type of pipe shall have a minimum of three years experience.

B. Regulatory Requirements

1. Building Code: Work of this Section within the Street Line shall conform to all requirements of the NYC Building Code. Where more severe requirements than those contained in the Building Code are given in this Section, the requirement of this Section shall govern.
2. Department of Environmental Protection (DEP): Work of this Section outside the Street Line shall conform to all requirements of the NYC Department of Environmental Protection. Where more severe requirements than those required by the DEP are given in this Section, the requirements of this Section shall govern.
3. Licensed Master Plumber
 - a. A licensed Master Plumber is responsible for work with Iron Pipe and for all work outside the Street Line.
 - b. Licensed Master Plumber shall be in full compliance with the Licensing and Regulatory Powers set forth in Title 26 of the Building Code, including but not limited to Articles 1 and 2 of Subchapter 2.
 - c. The Licensed Master Plumber shall file and obtain all permits required by the NYC Building Department and Department of Environmental Protection and shall call for, be present at, and supervise all tests as required by the Building Department and DEP.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver material to site, undamaged and clearly identified with ANSI and/or ASTM number and other required markings.

- B. Store material above ground and protect from elements. Prevent damage from stacking.
- C. Protect pipe during handling against impact shocks and free fall. Do not permit hooks to come in contact with premolded joint surfaces.
- D. Handle pipe having premolded joint rings or attached couplings so that no weight, including the weight of the pipe itself, will bear on or be supported by the jointing material. Take care to avoid dragging the spigot ring on contact with gravel, crushed stone, or other hard objects.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Cast Iron Pipe (C.I.P)

- 1. Cast iron pipe shall be evenly coated, cylindrical, smooth, free from all defects, of uniform thickness and weights required by the New York City rules governing Plumbing and Drainage, and shall be of the grade known in commerce as "Service Weight". Each length of pipe and each fitting shall be plainly marked with the manufacturer's initials or registered trademark and with the letters "SV" to indicate "Service Weight".
- 2. The markings may be cast, stenciled, or otherwise applied on the pipe so as to be clear and legible at the time of installation. The marking shall be cast on fittings and shall be located away from the spigot end so as not to interfere with proper jointing upon installation. Cast iron soil pipe and fittings shall comply with ASTM A74.
- 3. Fittings for cast iron pipes shall be service weight pattern, manufactured in accordance with the current ASTM Standard and shall correspond with the pipe in all particulars.
- 4. Joints in cast iron pipes shall be caulked joints made with picked oakum and molten lead, 12 oz of which must be used for each inch in diameter of the pipes at each joint and must be poured in at one time. The lead to be used for this purpose shall be of soft "Pig" or "Bar".
- 5. After cooling and shrinking, the lead shall be thoroughly caulked and the joints made impermeable to gases and liquids and also be capable of withstanding the test applied. The face of the lead joints shall finish flush with the face of the hub and be left without putty, paints, or cement. Whenever joints are made on the floor or surface they shall be recaulked after being placed in position.

B. Ductile Iron Pipe (D.I.P.)

- 1. Pipe shall be centrifugally cast ductile iron pipe, 60-42-10 grade, conforming to ASTM A21.51, Class 56. Pipe shall have an outer coating of coal tar. Ductile

iron fittings shall have a pressure classification of at least equal to that of the pipe with which they are used. Fittings, joints, and accessories shall comply with the requirement of ANSI A21.10 and ANSI A21.11. All ductile iron pipe shall conform to Section 2.06 of the Standard Sewer Specifications, DDC, except for pipe lining requirement.

2. Push-on rubber gasketed joint pipe shall be Super Bell-Tite Joint of Amstead Industries or Tyton Joint of U.S. Pipe and Foundry. Push-on joint fittings shall be U.S. Pipe's Tyton Fittings. Fittings shall be Thickness Class 56 for all sizes of pipe.
3. All pipe shall have markings indicating weight, class, manufacturer's name, year of manufacture, and the letters DI. Markings shall be cast or painted conspicuously in white paint that will withstand field handling on the outside of each pipe length, fitting, and special casting after the exterior shop coat has hardened.

C. Precast Reinforced Concrete Pipe (RCP)

1. Precast reinforced concrete pipe shall conform to ASTM C76 and shall be Class III, Wall B of that Standard.
2. The pipe shall be made by a manufacturer who has had previous experience in the manufacture of precast reinforced concrete pipe. Inside surface of pipe shall be smooth.
3. Visual Inspection: Precast reinforced concrete pipe shall be subject to visual inspection at the site of the work. Individual imperfect pieces may be rejected on account of any of the following:
 - a. Fractures or Cracks: Fractures or cracks passing through the shell, except that a single end crack that does not exceed the depth of the joint shall not be cause of rejection. However, if such single end cracks exist in more than 10% of the pipe inspected, all defective pipe shall be rejected.
 - b. Mixing and Molding Imperfections: Defects that indicate imperfect mixing and molding.
 - c. Surface Defects: Surface defects indicating honeycombed or open texture.
 - d. Spalls: Spalls deeper than one-half the depth of the joint or extending more than 4" around the circumference. However, if spalls not deeper than one-half the depth of the joint or extending not more than 4" around the circumference exist in more than 10% of the pipe, all the defective pipe shall be rejected.

- e. **Misplaced Reinforcement:** Exposure of the circumferential reinforcement when such exposure would indicate that the reinforcement is misplaced.
 - f. **Water Deficiency:** The complete absence of distinct web-like marking, which is indicative of a possible deficiency of water in the concrete mix, from the external surface of pipe made by any process in which the forms are removed immediately after the concrete has been placed.
- 4. Holes drilled or cast into pipe for lifting bolts shall be adequately plugged with a suitable precast concrete plug that shall be properly grouted and sealed before backfill is placed.
 - 5. Pipe joints and gaskets that are rejected because of failure to conform to the requirements of ASTM C443 and pipe damaged from handling or any cause whatsoever, whether in or out of the trench, shall be removed from the site by the Contractor and replaced without additional cost to the Commissioner.

D. High Density Polyethylene Pipe (HDPE)

- 1. High Density Polyethylene pipe and fittings shall have smoothed interior and corrugated annular exterior. The material of construction shall consist of closed foam cell having a minimum compressive strength of 20 psi, which will provide high stress resistance to cracks.
- 2. The bell-and-spigot HDPE piping network shall be joined using watertight connections in accordance with the requirements of ASTM D3212. Elastomeric seals (Gaskets) made of polyisoprene and meeting the requirements of ASTM F477 shall show no visible leaks when tested under a 10 ft hydrostatic water test. Provide those by Hancor Co. or other manufacturer than can provide watertight joints.
- 3. To prevent crumbling and provide better joint performance of the HDPE pipe, the bell and spigot ends shall be reinforced, including a bell tolerance device. The bell tolerance device must be installed by the pipe manufacturer.

E. Backfill Material

Controlled fill as specified in Section 312100.

F. Broken Stone Bedding (For Pipe Beyond Street Line)

Broken stone shall be uniformly graded from 3/4" to 1/4" cubical in shape, unweathered stone complying with ASTM C33, size #67, as per Section 4.14.2 of the Standard Sewer Specifications, DDC.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Do not begin Work till existing subgrade has been properly compacted.

3.02 PREPARATION

- A. After delivery alongside the trench or pit, carefully examine each piece of reinforced concrete pipe for soundness and specification compliance. Acceptable pipe shall be marked with paint or other permanent marking material so that the marks are plainly visible after installation in the trench and before the pipe is covered.

3.03 INSTALLATION

- A. Layout piping in strict accordance with Drawings. Excavate trenches as described in Section 312100 to lines and grades required for their proper installation. When applicable, provide enough depth to allow for concrete encasement or cradle.
- B. Unless otherwise indicated, lay all pipe straight between changes in alignment and at uniform grade between changes in grade. Provide full-length support of pipe. Excavate bell holes for each pipe joint. When jointed in the trench, the pipe shall form a true and smooth line.
- C. Provide for and install all joints, couplings, fittings, rings and connections as per manufacturers' instructions and applicable ASTM and ANSI standards. Clean joint contact surfaces immediately prior to jointing. Use lubricants, primers, or adhesives as recommended by the pipe or joint manufacturer.
- D. Keep trenches dry during pipe laying.
- E. Whenever practicable, start pipe laying at the lowest point and install the pipe so that the spigot ends point in the direction of flow.
- F. Ductile Iron Pipe
 - 1. Cutting Pipe
 - a. Every care shall be taken in handling and laying pipe and fittings to avoid damaging the pipe and coatings, scratching or marring machined surfaces, and abrasion of the pipe coating.
 - b. Any fitting showing a crack and any fitting or pipe which has received a severe blow that may have caused an incipient fracture, even though no such fracture can be seen, shall be marked as rejected and removed at once from the Work.
 - c. In any pipe showing a distinct crack and in which it is believed there is no incipient fracture beyond the limits of the visible crack, the cracked portions, if so approved, may be cut off by and at the expense of the

Contractor before the pipe is laid so that the pipe used is perfectly sound. The cut shall be made in the sound barrel at a point at least 12" from the visible limits of the crack.

- d. Cut pipe only by means of abrasive saws, hack saws, wheel type cutters, or milling type cutters. The use of "squeeze" type pipe cutters, cutting torches, diamond points, and dog chisels will not be permitted. Examine all cut ends for possible cracks caused by cutting.

2. Installing Pipe and Fittings

- a. No defective pipe or fittings shall be laid or placed in the piping, and any piece discovered to be defective after having been laid or placed shall be removed and replaced by a sound and satisfactory piece.
- b. Clear each pipe and fitting of all debris, dirt, etc. before being laid and keep clean until accepted in the completed work.
- c. Lay pipe and fittings accurately to the lines and grades indicated on the Drawings or required. Care shall be taken to insure a good alignment both horizontally and vertically.
- d. Trenches for pipe shall be in accordance with Section 4.02 of the Standard Sewer Specifications, DDC.
- e. Pipes and fittings shall be subjected to careful inspection and a hammer test just before being laid or installed.

G. Piping Outside Street Line

1. Connections shall be laid on a 6" thick compacted layer of broken stone. The 6" thick layer of broken stone shall be placed on the subgrade of the trench for its full width. The subgrade must be prepared to the proper grade so that the ductile iron pipe may be placed on the broken stone base accurately to line and grade in agreement with the Drawings, Specifications, and as directed by the Commissioner.
2. Broken stone shall also be placed around the pipe to a depth of one-half (1/2) the outer diameter of the pipe and for the full width of the trench. The rest of the trench shall be backfilled and compacted as specified in the Standard Sewer Specifications, DDC.

H. Perform all work required to be done by a Licensed Master Plumber under his direct supervision.

I. Connect piping to other pipes and to manholes and catch basins. Provide proper support at connections to man-holes and catch basins to prevent shear due to backfilling and loads. Grout joint with non-shrink grout.

- J. Do not backfill until all lines are tested and approved. Backfill trenches as described in Section 312100. Backfilling of trenches outside the street line shall comply with Section 4.06 of the Standard Sewer Specifications, DDC.

3.04 FIELD QUALITY CONTROL

A. Tests

1. All piping shall be field tested for leakage by the Contractor at own expense. When the pipe lines are laid in excavation or bedded in concrete, the testing shall be done prior to refilling or placing the concrete covering. All joints shall be examined during the test and all leaks shall be repaired to the satisfaction of the Commissioner. The Contractor shall thoroughly clean all piping before placement and keep all lines free from every kind of foreign matter of whatever origin.
2. Perform tests required by the Building Department and Sewer Department in the presence of their representative and the Commissioner.
 - a. Test piping by applying 10' of head pressure for one hour.
 - b. Testing shall be in accordance with the requirements of the Bureau of Sewers Standard.

B. Inspection

1. The Commissioner reserves the right to order the Contractor to disassemble or take apart any or all material and equipment called for in order that it may be inspected to see that it has been constructed in strict accordance with the Drawings, Specifications, and details. If, after inspection, it is found to fully comply, the Contractor shall properly reassemble all such material and equipment at the Commissioner's expense.
2. Any material or equipment that does not fully comply with the requirements of the Drawings and Specifications shall be rejected and shall be at once removed from the premises and shall be replaced with new material and equipment that complies fully with the requirements of the Drawings and Specifications at the Contractor's expense.

3.05 ADJUSTMENTS

- A. Thoroughly clean and adjust any irregularities to the satisfaction of the Commissioner.

END OF SECTION

-Final-
Phase I Environmental Site Assessment Report
For
121 Plymouth Relocation to 424 Wythe Avenue
New York City Department of Transportation, Paint Storage Facility
424 Wythe Avenue
Brooklyn, New York, 11211

DDC PROJECT NO. HWKF029B
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EXECUTIVE SUMMARY

On behalf of the New York City Department of Design and Construction (NYCDDC), Louis Berger & Assoc., PC (LBA) conducted a Phase I Environmental Site Assessment (ESA) of the New York City Department of Transportation (NYCDOT) paint storage facility located at 424 Wythe Avenue in Brooklyn, New York (hereinafter referred to as the Site). The northwest and southwest portions of the Site are proposed to be utilized by the NYCDOT for the installation of bulk paint and chemical storage containers to accommodate the decommissioning of the NYCDOT paint storage facility located at 121 Plymouth Street, Brooklyn, NY. The new facilities will consist of two prefabricated explosion-proof storage containers (500 square feet [SF]) for paint and other combustible materials, and one prefabricated structure (approximately 4,000-5,000 SF) for the storage of non-combustible painting equipment. As the NYCDOT currently owns the property, there will be no property acquisition or transfer associated with the project. The Site is identified as Block 2454, Lot 1 by the New York City Tax Assessors Records. The Site is approximately 1.93 acres and is located directly underneath the eastern end of the Williamsburg Bridge in an area characterized by light manufacturing, commercial and residential use.

The Site consists of a bituminous asphalt-paved lot and a 1-story concrete brick workshop building, hazardous materials storage area, empty drum storage area, 1-story concrete brick electrical equipment building, diesel fuel and potassium acetate aboveground storage tanks (ASTs) and storm water drainage conduits from the Williamsburg Bridge which discharge directly onto the Site. None of the on-site buildings contains basements. General use of the Site is for workshop operations, storage, parking and support functions for City-employed bridge painters. The Site is bounded to the north by South 5th Street and the Spencer Corp./GMI Corp building and apartments, to the east by Wythe Avenue, beyond which is a vacant, asphalt covered lot, to the south by South 6th Street and an auto repair facility, and to the west by an anchorage point for the Williamsburg Bridge, beyond which is a NYCDOT bridge painting facility (17 South 6th Street). Historical use of the Site consisted of industrial and manufacturing operations, including licorice manufacturing, and commercial and residential properties. According to the Sanborn map review, the current on-site workshop building was constructed sometime between 1935 and 1947.

The main objective of the Phase I ESA is to identify recognized environmental conditions (RECs) that may affect the suitability of the northwest and southwest portions of the Site for additional paint and chemical storage operations. Recognized environmental conditions are defined in American Society of Testing and Materials (ASTM) Standard Practice E 1527-05 as the presence or likely presence, use, or release on the Site of hazardous substances or petroleum products. The Phase I ESA also includes a preliminary evaluation of specific potential environmental issues or conditions that are, according to ASTM E 1527-05, considered non-scope considerations. These issues include radon, asbestos-containing materials (ACMs), polychlorinated biphenyls (PCBs) and lead-based paint (LBP). The Phase I ESA included a review of environmental



agency databases and historical documents; visual observation of the Site and adjoining properties; and interviews with a Site representative.

In addition, such assessment is typically conducted for purposes of environmental due diligence in order to qualify for the innocent landowner defense under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) for property transfer transactions. However, no property transfer is proposed for the Site; therefore, the innocent landowner defense is not applicable.

A review of historical sources revealed that the Site was used for manufacturing purposes as early as the 1800s, based on the Sanborn fire insurance map review. Historic Site operations are considered a REC. Surrounding land usage has also historically been industrial/manufacturing/commercial in nature, which is also considered a REC.

Based on a review of geotechnical boring logs generated by the New York City Department of General Services (NYCDGS) (NYCDGS, 1991), fill material is present at the Site. This material was likely brought on-site during the construction of the Williamsburg Bridge in the early 1900s and is considered a REC due to its unknown environmental quality.

Based on a review of the regulatory database report, the Site appears in the RCRIS, FINDS, PBS UST and NY Manifest databases. These listings are all considered RECs. The Site is a large quantity generator (LQG) of ignitable hazardous wastes. The Site formerly contained one (1) fuel oil underground storage tank (UST) which was removed in 1995. No releases were reported in connection with the UST; however, no closure documents describing the location of the tank, or the condition of the tank and the surrounding soil at the time of closure were available for LBA's review.

An inspection of the Site was conducted by representatives of LBA and NYCDDC on July 6, 2012. The majority of the Site consists of an asphalt-paved lot. A 1-story concrete block workshop is located in the southeastern section of the Site. A fenced-in hazardous material storage area and an empty drum storage area are located adjacent to the north of the workshop. A 1-story concrete block building for electrical equipment is present on the western portion of the Site. A flammable storage structure is located in the northern section of the Site. All of the structures were locked and inaccessible for inspection.

Two (2) 6,250-gallon ASTs for potassium acetate, a deicer, are located on a concrete platform in the southeastern area of the Site. No secondary containment structures were noted and no staining was observed in the vicinity. Additionally, two (2) 250-gallon diesel ASTs are located near the northern property boundary. Both ASTs have secondary containment structures/features; however, heavy staining was observed at the tank base and within the metal containment basin of one of the ASTs. Minor staining of the asphalt, likely attributable to filling operations, and a used spill kit were also present in the vicinity of the ASTs. The surrounding asphalt was in sound condition. Staining of



the asphalt is considered a *de minimis* condition due to the relatively minor amount observed.

In addition to the bulk storage operations at the Site, various quantities of paints and sealers are stored in discrete locations throughout the Site. Petroleum and hazardous materials storage operations are considered a REC due to the potential for any undocumented releases to impact the soil and groundwater at the Site.

Summary of RECs and Potential Environmental Issues

The Phase I ESA has identified the following RECs and potential environmental issues:

On-Site

The Phase I ESA identified the following five (5) on-site RECs and eight (8) environmental issues that have the potential to affect conditions at the Site:

- Based on a review of geotechnical boring logs provided by NYCDDC, fill material is present at the Site (NYCDGS, 1991), which is considered a REC since its quality is unknown.
- The Site was historically used for licorice manufacturing purposes in the late 1800s. It is possible that historic Site operations involved the use of petroleum products and/or other hazardous materials, which could have potentially impacted the soil and groundwater at the Site. Therefore, historical on-site manufacturing operations are considered a REC.
- The Site is currently owned by the NYCDOT and is utilized by the Bureau of Bridges. Hazardous materials are stored in the southern portion of the Site, as well as in discrete locations across the Site. This is considered a potential REC due to the potential for any undocumented releases to impact the soil and groundwater at the Site.
- Flammable materials are stored in the southern portion of the Site. This is considered a potential REC due to the potential for any undocumented releases to impact the soil and groundwater at the Site.
- The Site was identified in the RCRAInfo database as a large quantity generator (LQG) of hazardous ignitable waste. Although no releases or violations have been reported, this listing is considered a potential REC due to the potential for any undocumented releases of this hazardous waste material to impact soil and groundwater at the Site.
- Two (2) 6,250-gallon ASTs are used at the Site for the storage of potassium acetate, a deicer. Although NYSDEC does not identify potassium acetate as a hazardous substance, the ASTs may still be subject to the bulk storage requirements of the



Compilation of Codes, Rules and Regulations of the State of New York (NYCRR)
Part 596.

- Two (2) 250-gallon diesel ASTs in secondary containment structures are present at the Site. The base of one AST and the interior of its metal containment basin were heavily stained. Staining of the asphalt around this AST was also observed, and can likely be attributed to filling operations. The ASTs are considered an environmental concern; however, the staining of the surrounding asphalt is considered a *de minimis* condition due to the relatively minor amount observed.
- A 1,500-gallon fuel oil UST (PBS No. 2-242306) was formerly present at the Site for heating the on-site workshop building. According to the PBS Facility Information Report provided by NYSDEC, the UST was closed and removed on 10/1/1995. There are no reported releases associated with this UST; however, no closure documents pertaining to the location of the tank, or the condition of the tank and the surrounding soil at the time of closure were available for LBA's review. This former UST is considered an environmental concern.
- Approximately six (6) 12-inch stormwater drains discharge water from the Williamsburg Bridge support structures on-site directly onto the asphalt pavement on the Site. As the quality of the effluent is unknown, this is considered an environmental concern.
- Based on the age of the on-site building, it is possible that ACM is present. The potential presence of ACM is considered an environmental concern.
- The NYCDOT indicated that LBP was formerly present on-site. Based on the age of the building, it is possible that LBP is still present. The potential presence of LBP-containing materials is considered an environmental concern.
- It is possible that polychlorinated biphenyl (PCB)-containing electrical equipment is located within the building labeled "High voltage", which was locked and inaccessible at the time of LBA's Site reconnaissance. The potential presence of PCBs is considered an environmental concern.
- The NYCDOT has indicated that fluorescent light fixtures are utilized on-site. The presence of this mercury-containing equipment is considered an environmental concern.

Off-Site

The Phase I ESA identified the following off-site RECs and environmental issues that have the potential to affect conditions at the Site:

- Historical and current manufacturing/industrial/commercial operations were identified in the area surrounding the Site and may have the potential to impact the



environmental quality of the Site due to proximity and/or assumed hydraulic gradient to the west and are considered a REC. Four such specific off-site properties are identified below.

- *426 Wythe Avenue*: Current auto repair facility; historical toolworks, chromium plating and polishing, and woodworks.
 - *373 Wythe Avenue*: Currently under residential construction: historical chromium plating and polishing operations
 - *17 South 6th Street*: Currently and historically occupied by a NYCDOT bridge painting facility. Formerly contained a gasoline UST, which had resulted in soil and groundwater contamination. Spill case No. 9611385 was closed in 2005.
 - *67 South 6th Street*: Historical trucking and auto repair operations since the 1920s.
- The NYCDOT representative identified historic LBP delamination from the Williamsburg Bridge as a potential source of soil contamination at the Site due to its position beneath the Bridge. This is considered an environmental concern.

If construction will be performed at the Site impacting the subsurface, a Phase II Environmental Site Investigation (ESI) is recommended to determine whether the identified RECs and environmental issues have affected the suitability of the Site for installation of prefabricated paint and chemical storage structures to accommodate the decommissioning of the NYCDOT storage facility at 121 Plymouth Street. The following is further recommended based solely on the proposed scope of work:

- Installation of a total of four (4) soil borings in the proposed area of installation of the three (3) structures to evaluate whether the soil has been impacted by historical and current Site operations. LBG recommends installation of one (1) soil boring in each of the footprints of the 500-SF containers for paint and other combustible materials, and two (2) soil borings in the footprint of the 4,000- to 5,000-SF container for the storage of non-combustible painting equipment.
- Register existing 6,250-gallon potassium acetate solution ASTs with applicable local, State and Federal requirements, if applicable

It should be noted that the other RECs and environmental concerns identified may warrant an investigation; however, no additional investigation is recommended at the present time, based on LBA's understanding of the current scope. Should future additional activities be proposed for the Site, further investigation may be necessary.



1.0 INTRODUCTION

On behalf of the New York City Department of Design and Construction (NYCDDC), Louis Berger & Assoc., PC (LBA) conducted a Phase I Environmental Site Assessment (ESA) of the New York City Department of Transportation (NYCDOT) bridge painting facility located at 424 Wythe Avenue in Brooklyn, New York (hereinafter referred to as the Site). The northwest and southwest portions of the Site are proposed to be utilized by the NYCDOT for the installation of bulk paint and chemical storage containers to accommodate the decommissioning of the NYCDOT paint storage facility located at 121 Plymouth Street, Brooklyn, NY. The new facilities will consist of two prefabricated explosion-proof storage containers (500 square feet [SF]) for paint and other combustible materials, and one prefabricated structure (approximately 4,000-5,000 SF) for the storage of non-combustible painting equipment. As the NYCDOT currently owns the property, there will be no property acquisition or transfer associated with the project. The Site is identified as Block 2454, Lot 1 by the New York City Tax Assessors Records. The Site is approximately 1.93 acres and is located directly underneath the eastern end of the Williamsburg Bridge in an area characterized by light manufacturing, commercial and residential use.

The Site is currently owned by the New York City Department of Transportation. The Site reconnaissance was performed on July 6, 2012 by Ms. Rebecca Tummon of NYCDDC and Mr. Evan Mankoff and Mr. Mark Freed of LBA. The weather conditions at the time of the site inspection were sunny with a slight breeze with a temperature of 95 degrees Fahrenheit. A topographic Site Location Map is presented as Figure 1. A Site Plan is presented as Figure 2. Photographs taken during the site reconnaissance are presented in Appendix A.

1.1 Purpose and Scope

The purpose of this assessment is to identify Recognized Environmental Conditions (RECs) and certain other environmental issues or conditions as they existed at the Site at the time of the site visit. The assessment is intended to identify conditions that would have the potential to impact the value of the Site or the development and use of the Site for paint and chemical storage operations. Although a Phase I ESA is typically conducted for purposes of environmental due diligence in order to qualify for the innocent landowner defense under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) during property transfers, no such transactions are associated with this project. The Phase I ESA included, but was not limited to, an assessment of the following potential environmental issues: current and historical site usage; current and historical usage of adjoining properties; regulatory agency records review; on-site solid waste management and disposal practices; on-site hazardous materials and petroleum products management; wetlands; dry-cleaners; ACM; PCB management; LBP and radon.



This evaluation was conducted in accordance with the ASTM E 1527-05. The scope of work completed for this evaluation included the following:

- Documenting the physical characteristics of the Site through a review of available topographic, geologic, wetland, flood plain and groundwater data.
- Researching the Site history through a review of reasonably ascertainable standard sources such as fire insurance maps, city directories, aerial photographs, historical topographic maps and interviews.
- Documenting current Site conditions, via observations and interviews, regarding the presence or absence of hazardous substances/petroleum products; the generation, treatment, storage, or disposal of hazardous, regulated, or medical wastes; and, the presence of petroleum and chemical storage tanks (above and below ground).
- Determining the usage of adjoining and nearby properties to identify the likelihood for environmental conditions (if present and/or suspected) to migrate onto the Site.
- An evaluation of information contained within federal and state environmental databases and other local environmental records, within specific search distances.

In addition, the following environmental issues that are outside the scope of ASTM E 1527-05 were also evaluated:

- A review of available topographic maps and wetland maps to identify the potential presence of historic fill and historic water bodies at the Site or organic rich subsurface materials that have the potential to generate methane beneath the Site.
- A review of available radon data for the Site vicinity.
- A visual assessment for suspect ACM.
- A visual assessment for suspect LBP.
- An assessment of potential PCB containing equipment.

1.2 Deviations

The following deviation from ASTM E 1527-05 is noted:

- LBA did not enter and inspect the on-site structures or the hazardous and flammable materials storage areas as they were locked and inaccessible.

1.3 Data Gaps

This Phase I ESA was limited to exterior observations only as the on-site structures and the hazardous and flammable materials storage areas were locked and inaccessible during the Site reconnaissance. Based on the respective use of these facilities as a workshop, high-voltage equipment storage and hazardous and flammable material storage areas, the



potential exists for petroleum products and/or hazardous materials usage and storage within these facilities.

1.4 Limitations

LBA has prepared this Phase I ESA using reasonable efforts in each phase of its work to identify RECs associated with hazardous substances, wastes and petroleum products at the Site. The methodology of the Phase I ESA is generally consistent with ASTM E 1527-05. Findings within this report are based on information collected from observations made on the day of the site investigation and from reasonably ascertainable information obtained from governing public agencies and private sources.

This report is not definitive and should not be assumed to be a complete or specific definition of the conditions above or below grade. Information in this report is not intended to be used as a construction document and should not be used for demolition, renovation or other construction purposes. LBA makes no representation or warranty that the past or current operations at the Site are or have been in compliance with all applicable Federal, State and local laws, regulations and codes.

Regardless of the findings stated in this report, LBA is not responsible for consequences or conditions arising from facts that were concealed, withheld or not fully disclosed at the time that the evaluation was conducted.

This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

The regulatory database report provided is based on an evaluation of the data collected and compiled by a contracted data research company. The report focuses on the Site and neighboring properties that could impact the Site. Neighboring properties listed in government environmental records are identified within specific search distances. The search distance varies depending upon the particular government record being checked. The regulatory research is designed to meet the requirements of ASTM E 1527-05. The information provided in the regulatory database report is assumed to be correct and complete.

There is no proposed transfer of property associated with the Site; therefore, an assessment regarding the relationship of purchase price of the property to fair market value of the property is not applicable.



2.0 SITE DESCRIPTION

2.1 *Site Location and Description*

The Site is located at 424 Wythe Avenue in the Borough of Brooklyn, Kings County, New York and is identified as Block 2454, Lot 1 by the New York City Department of Buildings (NYCDOB) and is located directly underneath the eastern end of the Williamsburg Bridge. The New York City Planning Commission maps the Site as being zoned within a light manufacturing district (designated M1-2). According to the New York City Office of Environmental Remediation (NYCOER) Searchable Property Environmental E-Database, there is no E-Designation assigned to the Site.

The majority of the Site consists of a bituminous asphalt-paved lot. Other on-site features include a 1-story concrete brick workshop, hazardous materials storage area, empty drum storage area, 1-story concrete brick electrical equipment building, diesel fuel and potassium acetate storage tanks, and parking and storage space.

According to NYCDOT, the Site is serviced by City water, sanitary sewer and storm sewer utilities. Heating for the Site is provided by forced air natural gas-fired steam. Cooling at the Site is provided by window-unit air-conditioning. Approximately six (6) 12-inch diameter storm water conduits from the Williamsburg Bridge exist throughout the Site and discharge directly onto the Site.

The Site is bounded to the north by South 5th Street and the Spencer Corp./GMI Corp. building and apartments, to the east by Wythe Avenue, beyond which is a vacant, asphalt-covered lot, to the south by South 6th Street and an auto repair facility, and to the west by an anchorage point for the Williamsburg Bridge, beyond which is a NYCDOT bridge painting facility (17 South 6th Street). A topographic map showing the location of the Site is presented as Figure 1. A Site plan showing the physical layout is presented as Figure 2. Photographs of Site and surrounding areas are included in Appendix A.

2.2 *Physical Setting*

2.2.1 *Topography*

Based on a review of a topographic survey of the Site provided by the NYCDDC, the elevation of the Site ranges from approximately 36 feet (ft) above mean sea level (MSL) along the eastern side to approximately 27 ft above MSL along the western side. Based on a review of the United States Geological Survey (USGS) 7.5-Minute Quadrangle Map, Brooklyn, NY, dated 1995, the Site and surrounding area slope to the west, towards the East River. A copy of the topographic map is presented in Figure 1.

2.2.2 *Geology*

Based on a review of geotechnical boring logs generated for the Site and provided by the NYCDDC, the Site is immediately underlain by approximately 2 feet of fill material consisting of brown silty-sand with brick and coal fragments (NYCDGS, 1991). The



United States Department of Agriculture (USDA) *NYC Reconnaissance Soil Survey* maps these surficial soils as the pavement & buildings, wet substratum-Laguardia-Ebbets complex, which are classified as a loamy fill consisting of a mixture of natural and anthropogenic soils over swamp, tidal marsh or water with 50 to 80 percent of the surface covered by impervious pavements and buildings (USDA, 2005).

Surficial fill material is underlain primarily by brown and orange clayey and silty sand with some gravel and cobble occurrences to depths of approximately 80 to 90 feet below ground surface (bgs) and is followed by white to dark gray clayey sand and silt to approximately 160 feet bgs. The *Ground-Water Resources of Kings and Queens Counties, Long Island, New York*, map these deposits as Pleistocene aged ground moraine deposits consisting of clay, sand, gravel and boulders (Buxton, 1999). Crystalline gneiss bedrock was encountered during the geotechnical investigation at a depth of approximately 160 feet bgs.

2.2.3 Hydrology

Based on a review of geotechnical boring logs generated for the Site and provided by the NYCDDC, groundwater was encountered at approximately 13 to 17 feet bgs (NYCDGS, 1991). Groundwater beneath the Site occurs within the upper glacial aquifer of the ground moraine deposits and exists under unconfined (water table) conditions (Buxton, 1999). The upper glacial aquifer is a substantial water bearing aquifer, retaining much of the freshwater recharge that enters the aquifer system of Kings County (Buxton, 1999). Historically, the upper glacial aquifer was utilized for both public supply and industrial pumping until 1947 when New York City stopped all public supply pumping in Kings County (Buxton, 1999).

The nearest surface water body to the Site is the East River, which is located approximately 370 feet west of the Site. Based on the elevation of the Site and surrounding area and the elevation of the East River, groundwater is anticipated to flow west, towards the East River. Estimated groundwater levels and/or flow direction(s) may vary due to seasonal fluctuations in precipitation, local usage demands, geology, underground structures, or dewatering operations.

Two (2) storm water catch basins were observed on-site during the Site reconnaissance. These drains were located on the downgradient side of the Site. Additionally, six (6) storm water drains, originating from the Williamsburg Bridge, discharge onto the Site. The surrounding area is serviced by storm water catch basins and drains.

According to the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory, there are no wetlands located on the Site (USFWS, 2012). Additionally, the environmental database report provided by Environmental Data Resources, Inc. (EDR) of Milford, CT (EDR, 2012a) indicates that no federally-regulated wetlands are located on-site. The environmental database report does map wetlands along the banks of the East River, located approximately 450 feet northwest of the Site (EDR, 2012a). A copy of the wetland map is included in Appendix B.



According to the environmental database report, the Site is not located within either the 100- or 500-year flood plain. A copy of the flood plain map was not available for inclusion into this report.

2.2.4 Radon

Radon is a colorless, odorless radioactive gas that results from the natural breakdown of uranium minerals in soil, rock and water, which subsequently enters the atmosphere. It can concentrate in buildings, entering through cracks and other penetrations of a building foundation. Some areas are more likely to have elevated concentrations of radon than others, reflecting subsurface lithologic conditions.

The New York State Department of Health (NYSDOH) maintains a database of radon test results on a county level. A review of the NYSDOH database indicates that Kings County is in the Federal Radon Zone with an average indoor level of 1.93 pCi/L, which is below the United States Environmental Protection Agency (USEPA) Action Level of 4.0 pCi/L. Based on this data, radon is not considered an environmental issue at the Site.



3.0 ADJOINING PROPERTIES

The general area of the Site is characterized by light industrial, residential and commercial use. The following table summarizes the adjoining property uses:

Direction	Facility Name/Description	Street Address/Location	Current Use
North	Spencer, GMI Corp; Café & Apartments	39 South 5 th Street; 57 South 5 th Street	Unknown; Residential and restaurant
South	Auto Repair; Apartments	426 Wythe Avenue; along South 6 th Street	Auto repair; Residential
East	Vacant paved lot	375 Wythe Avenue	Vacant
West	NYCDOT Bridges Division	17 South 6 th Street	Warehouse

Based on observations made during the Site inspection, current use of the adjoining properties to the west and south as a NYCDOT facility and auto repair facility, respectively, is considered a REC due to proximity to the Site and the possibility of petroleum and other hazardous materials contamination.



4.0 HISTORICAL USE RESEARCH

Historical topographic maps, aerial photographs, Sanborn Maps, and city directories provide an assessment of the Site historical use.

4.1 *Land Title Records and Tax Records*

LBA reviewed prior ownership information for the Site provided in an environmental lien search report provided by EDR (EDR, 2012f). All available public deed records and Tax Records were reviewed by EDR for the Site. The current owner was listed as City of New York. A copy of the environmental lien search report is included in Appendix C.

Year	Listings
9/22/1897	Grantor: John Drescher Grantee: City of New York Instrument: Book 7, Page 541
9/22/1897	Grantor: John Drescher Grantee: City of New York Instrument: Book 7, Page 540
10/6/1897	Grantor: Mary A. Hayes Grantee: City of New York Instrument: Book 8, Page 28
10/6/1897	Grantor: Mary A. Hayes Grantee: City of New York Instrument: Book 8, Page 26
7/19/1900	Grantor: Mary J. Conldin Grantee: City of New York Instrument: Book 13, Page 403

Deed records appear to indicate that the City of New York began to acquire the property comprising the Site in the late 1890's and has owned the property since at least 1897. No environmental liens or activity and use limitations (AULs) are imposed on the Site.

The review of current and historical ownership and tax records information did not reveal evidence of environmental conditions associated with prior use of the Site.

4.2 *Historical Topographic Maps*

LBA reviewed available historical USGS Topographic Quadrangles for information regarding past uses of the Site (EDR, 2012b). A copy of the historical USGS topographic map is included in Appendix D.



Year	Comments
1900	Site: No structures are depicted on-site. Surrounding Properties: Roadways and tax blocks are depicted; however, no other details are provided.
1947	Site: The Williamsburg Bridge obscures the view of the Site; however, the Site is identified as developed. Surrounding Properties: The surrounding property is identified as developed and populated. There is evidence of filling to the west of the Site, along the East River.
1956	Site: A building is depicted on-site. Surrounding Properties: The surrounding area is depicted as heavily developed. There is further evidence of filling west of the Site.
1967, 1979, 1995	Site: No change Surrounding Properties: No change

The review of historical USGS Topographic Quadrangles indicated recognized environmental conditions at the Site and surrounding areas. The area west of the Site has been historically filled, likely beginning prior to 1900 and continuing until at least 1956. Based on the proximity of the Site to the East River and to the Williamsburg Bridge anchor points, and based on evidence of filling activities in the vicinity of the Site, it is likely that the Site was filled sometime prior to 1900. Furthermore, fill material was identified during a geotechnical investigation conducted at the Site in 1991 (NYCDGS, 1991). Fill material beneath the Site is considered a REC in association with the Site.

4.3 Historical Aerial Photographs

LBA reviewed aerial photographs of the Site and surrounding areas provided by EDR (EDR, 2012d) in order to identify historical land use that may have involved hazardous substances and petroleum products. These photographs ranged from 1924 to 2006. Due to the Site's location beneath the Williamsburg Bridge, the bridge obscures the majority of the Site in all aerial photographs. Descriptions of the Site were generated from the visible portions of the Site only. The following table summarizes descriptions and interpretations from the aerial photograph reviews:

Year	Comments
1924	Site: The Site appears vacant. Surrounding Properties: The surrounding properties are heavily developed.
1943, 1954	Site: The current on-site structure is depicted. Surrounding Properties: The surrounding properties are heavily developed.
1966	Site: The current on-site structure is depicted and it appears that the Site in front of the building has been paved. Surrounding Properties: The surrounding properties are heavily developed.



Year	Comments
1975	Site: The current on-site structure is depicted. Vehicles are visible along the north side of the building and in the vacant space to the west of the building. Surrounding Properties: The surrounding properties are heavily developed.
1984	Site: No change Surrounding Properties: No change
1994	Site: An addition appears to have been constructed on a portion of the north face of the building. This location corresponds with the hazardous materials storage area identified during the Site reconnaissance. Vehicles are visible on-site. Surrounding Properties: The surrounding properties are heavily developed.
1995, 2006	Site: No change Surrounding Properties: No change

The review of aerial photographs indicated recognized environmental conditions at the Site and surrounding areas. It appears that the hazardous materials storage area identified at the Site during the Site reconnaissance was constructed sometime between 1984 and 1994. The hazardous materials storage area represents a REC associated with the Site. Copies of aerial photographs are included in Appendix E.

4.4 Sanborn Fire Insurance Maps

A search for historical Sanborn fire insurance maps for the Site and adjoining properties was conducted by EDR (EDR, 2012e). The following table presents descriptions and interpretations from historical fire insurance map review:

Year	Comments
1887	Site: Site consists of domestic properties, 2 and commercial properties; and Young & Smylie Licorice Manufacturing with mixing and boiling tanks and engines, boiler shop, vinegar house with pumps, and job printing. Surrounding Properties: North – NY Stamping Company with steam house, and residential properties. East – Several multi-story residential properties. South – Several multi-story residential properties and commercial properties, including a machine shop, patterns shop and brass foundry. Southwest – boarding and livery; iron foundry. West – Vinegar works; residential properties; commercial properties; barrel and oil storage, liquors.



Year	Comments
1904	<p>Site: Vacant; buildings demolished to construct an anchorage point for the Williamsburg Bridge.</p> <p>Surrounding Properties: North - American Printing Ink Works; Lyon Manufacturing Company, Patent Medicines. East - Vacant; commercial and residential properties. South - King Paint Manufacturing Company; rolling mill; leather and brass factories; commercial and residential properties. West - Bridge anchorage and vacant.</p>
1918	<p>Site: No change</p> <p>Surrounding Properties: North - The Empire Tin Ware Co. Inc.; Lyon Manufacturing Company, Patent Medicines; Royal Baking Powder Company; Residential. East - No change. South - W. Wurster Co.; The Haas Wool Stock Co.; brass and leather factories; commercial and residential properties. West - Vacant</p>
1922	<p>Site: No Sanborn coverage</p> <p>Surrounding Properties: No Sanborn coverage</p>
1928	<p>Site: Vacant</p> <p>Surrounding Properties: No Sanborn coverage to north, east and partially south. West - Building owned by NYC. South - Ross Iron Works</p>
1935	<p>Site: Vacant</p> <p>Surrounding Properties: North - The Empire Tin Ware Co. Inc.; Lyon Manufacturing Company, Patent Medicines; Royal Baking Powder Company; commercial and residential properties. East - Playground and comfort station; residential. South - Ross Works Inc.; residential and commercial properties; brass foundry; pattern making furnaces; industrial/Manufacturing operations. West - Department of Street Cleaning Garage with a gasoline tank near the northern boundary.</p>
1947	<p>Site: Current on-site building depicted and identified as a one-story storage and office building.</p> <p>Surrounding Properties: North - The Lyon Manufacturing Company, Patent Medicines; Rags and Waste Paper Storage. East - No change. South - Paper box warehouse; paper converting; flats; residential and commercial properties, galvanizing works; pattern making; brass foundry; industrial/Manufacturing operations. West - Department of Sanitation with a gasoline tank near the southern boundary. The northern tank is no longer depicted.</p>
1950	<p>Site: No change</p> <p>Surrounding Properties: South - No change except for the addition of steel drum storage. North, East and West - No change</p>
1965	<p>Site: No change</p> <p>Surrounding Properties: North - Vacant; Rags and Waste Paper Storage; commercial and residential properties. East - No change. South - industrial/manufacturing; flats; commercial and residential; filling station. West - No change.</p>



Year	Comments
1977	Site: No change Surrounding Properties: North – Flats; Rags and Waste Paper Storage; commercial and residential properties. East – No change. South – industrial/manufacturing; flats; commercial and residential; parking. West – No change.
1979, 1980, 1981, 1982, 1984, 1986	Site: No change Surrounding Properties: No change
1987	Site: No change Surrounding Properties: North – Food Products Inc.; flats; vacant; commercial and residential properties. East, South, West – No change
1989	Site: No change Surrounding Properties: North – Warehouse; flats, vacant; commercial and residential properties. East, South, West – No change
1991	Site: No change Surrounding Properties: East – Identified as playground but no structures depicted. North, South, West – No change
1992, 1993, 1995, 1996	Site: No change Surrounding Properties: No change
2001	Site: No change except that the southwest portion of Site is identified as Parking Surrounding Properties: No change
2002 - 2007	Site: No change Surrounding Properties: No change

The review of fire insurance maps indicated evidence of recognized environmental conditions at the Site and surrounding areas. Historically, the Site was used for a variety of manufacturing/industrial operations, including licorice manufacturing, boiler shop and job printing. Additionally, the immediate surrounding properties to the north, south and west have been utilized for long-term manufacturing/industrial/commercial operations that may have involved the use of petroleum and/or hazardous materials. Historical on- and off site operations are considered a REC associated with the Site.

A copy of the historical Sanborn Fire Insurance Maps is included in Appendix F.



4.5 City Directories

A review of historical city directories from 1928 to 2005, in approximate 5-year intervals, was conducted by EDR (EDR, 2012c). The Site was not identified in the city directory; however, listings for surrounding properties were available. The city directory included 12 pages of property listings for the surrounding area. Therefore, the following table provides a general summary of property usage surrounding the Site according to the city directories and specifically identifies only tenants of potential environmental concern that could have potentially impacted the Site. A copy of the historical city directories can be found in Appendix G. The city directory search performed by EDR searches all addresses within 100 feet of the target property. In this case, the only addresses provided by the search were for the surrounding properties and information pertaining to the Site was not provided by EDR.

Year	Comments
1928, 1934, 1940, 1945, 1949	Site: No listings Surrounding Properties: 67 S. 6 th Street – Byrnes Express & Trucking Co.
1960	Site: No listings Surrounding Properties: 426 Wythe Avenue – Fulton Tool Co.
1965	Site: No listings Surrounding Properties: 426 Wythe Avenue – Fischer Morris Plating, Chromium Plating and Polishing Corp.; 67 S. 6 th Street – Byrnes Express & Trucking Co.
1970	Site: No listings Surrounding Properties: 426 Wythe Avenue – Fischer Morris Plating, Chromium Plating and Polishing Corp.
1973	Site: No listings Surrounding Properties: 426 Wythe Avenue – Fischer Morris Plating, Chromium Plating and Polishing Corp.; 67 S. 6 th Street – Vince's Auto Repair
1976	Site: No listings Surrounding Properties: 426 Wythe Avenue – H&L Woodcraft Corp; Fischer Morris Plating; 67 S. 6 th Street – Vince's Auto Repair
1985, 1997, 2000	Site: No listings Surrounding Properties: 67 S. 6 th Street – Vince's Auto Repair
2005	Site: No listings Surrounding Properties: 426 Wythe Avenue – I S Auto Group, LLC; 67 S. 6 th Street – Vince's Auto Repair

The review of city directories indicated potential recognized environmental conditions in the surrounding areas. The property at 426 Wythe Avenue is located to the south of the



Site, across South 6th Street. The city directory indicates that this property was used for historical chromium plating operations. This property is currently utilized by a commercial car repair facility. Additionally, the property located at 67 S. 6th Street, assumed to be hydraulically upgradient of the Site, has historically been used for trucking and auto repair operations. Based on historical and/or current use, proximity to the Site and/or assumed hydraulic gradient to the west, these two facilities are considered potential RECs with respect to the Site.

4.6 Prior Reports

No prior reports were made available for LBA's review.



5.0 REGULATORY AGENCY RECORD REVIEWS

The databases discussed in this section, provided by EDR (EDR, 2012a), were reviewed for information regarding documented and/or suspected releases of regulated hazardous substances and/or petroleum products on or near the Site. LBA also reviewed the "unmappable" (also referred to as "orphan") listings within the database report, cross-referencing available address information and facility names. Unmappable sites are listings that cannot be plotted with confidence, but are identified as being located within the general area of the Site based on the partial street address, city name, or zip code. In general, a listing cannot be mapped due to inaccurate or incomplete address information in the database that was supplied by the corresponding regulatory agency. Listings from the unmappable summary which were identified by LBA as a result of the area reconnaissance and/or cross-referencing to mapped listings are included in the corresponding database discussion within this section. A copy of the federal and state agency regulatory database is presented in Appendix H.

5.1 Federal and State Regulatory Agency Database Reviews

A summary of sites identified through the federal and state regulatory agency databases review is provided in the following table:

Federal and State List	Site Address Appears on List	Search Radius*	No. of Sites within Search Radius	Last Updated
National Priorities List for Federal Superfund Cleanup (NPL)	No	1 Mile	0	5/8/2012
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)	No	1/2 Mile	1	12/27/2011
CERCLIS No Further Remedial Action Planned (CERC-NFRAP)	No	1/2 Mile	0	12/28/2011
Resource Conservation and Recovery Information System – Treatment, Storage or Disposal Facilities (RCRIS-TSD)/RCRIS Corrective Action Activity (CORRACTS)	No	1 Mile	1 / 1	3/15/2012 / 8/19/2011
Resource Conservation and Recovery Information System – Generators/Transporters (RCRIS Gen/Trans)	Yes	1/4 Mile	8	3/15/2012
Facility Index System/Facility Identification Initiative Program Summary Report (FINDS)	Yes	Site	NA	10/23/2011
Emergency Response Notification System (ERNS)	No	Site	NA	4/2/2012



Federal and State List	Site Address Appears on List	Search Radius*	No. of Sites within Search Radius	Last Updated
Hazardous Substance Waste Disposal Site Inventory (HSWDS)	No	1 Mile	0	1/1/2003
State Inactive Hazardous Waste Sites (SHWS)	No	1 Mile	4	5/21/2012
Solid Waste/Landfills Facilities Sites (SWF/LF)	No	1/2 Mile	7	4/11/2012
New York State Spills Information (NY Spills)/Leaking Underground Storage Tanks (LTANKS)	No	1/2 Mile	14 / 13	3/29/2012 / 3/29/2012
Petroleum Bulk Storage Tanks (USTs/ASTs)	Yes / No	1/4 Mile / 1/4 Mile	15 / 33	5/9/2012 / 5/9/2012
Chemical Bulk Storage Tanks (USTs/ASTs)	No*	1/4 Mile	1	1/1/2002 / 5/9/2012
New York Manifest	Yes	1/4 Mile	23	5/1/2012
Registered Dry Cleaners	No	1/4 Mile	0	12/20/2011
Manufactured Gas Plants	No	1 Mile	8	NA
Toxic Release Inventory System (TRIS)	No	Site	NA	12/31/2009
New York Voluntary Cleanup Agreements (NY VCP) / Brownfield Cleanup Program (BCP)	No	1 Mile	2 / 1	5/21/2012 / 5/21/2012

*Although the Site was not identified in the CBS UST/AST database, two (2) 6,250-gallon plastic ASTs containing a 50-percent aqueous solution of potassium acetate are located on-site and were installed in 2001. According to the NYSDEC, potassium acetate is not a regulated hazardous substance.

The Site was identified in the FINDS database with a RCRAInfo listing as a biennial hazardous waste reporter, in the UST and Historical Petroleum Bulk Storage database (HIST UST) as an unregulated PBS facility, in the NY MANIFEST database with several listings for the years 2008, 2009, 2010 and 2011, and in the RCRA-Large Quantity Generator (LQG) database for waste types D001 (ignitables). These listings are considered RECs in connection with the Site due to the potential for impacts to the Site arising from undocumented releases of hazardous wastes and/or petroleum products.

The following subsections provide a discussion of the properties which have been identified within the search radius and listed in the table:

National Priorities Listing (NPL) – Environmental Protection Agency Superfund

The United States Environmental Protection Agency (USEPA) National Priorities Listing (NPL), or Superfund List, is a Federal listing of uncontrolled or abandoned hazardous waste sites. The list is created from the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) database (see next



subsection) and is primarily based upon a score that each site or facility receives from the USEPA's Hazard Ranking System. After a site or facility has been identified as a CERCLIS site, the USEPA conducts an assessment of the property. The ranking score associated with the degree of contamination found is one of the determinations made as to whether the site is placed on the NPL. These sites are then prioritized for possible long-term remedial action and referred to the state for further action under state programs.

Neither the Site nor other facilities within a one-mile radius are listed on the NPL database.

Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)

The CERCLIS list is a compilation of records from a nationwide database created to maintain and regulate those facilities or sites that the USEPA has investigated or will investigate for suspected or uncontrolled releases of hazardous substances, contaminants or pollutants as reported by states, municipalities, private companies and private citizens under the CERCLA or the Superfund Program. Once a site is placed on the CERCLIS list, it may be subjected to several additional levels of evaluation to determine the severity of the contamination. These levels of evaluation range from discovery and preliminary assessment to site inspection, and possibly to the Hazard Ranking System. Such a determination could ultimately place the site under consideration for inclusion on the NPL. Inclusion on the CERCLIS list does not confirm the presence of an environmental problem or a public health threat.

The Site is not listed in the CERCLIS database. The single property identified within one-half mile radius in the CERCLIS database is not expected to impact the environmental integrity of the Site and is not considered a REC.

CERCLIS No Further Remedial Action Planned (CERC-NFRAP)

The CERC-NFRAP is a database that provides a list of sites that have been removed from the CERCLIS database. Following the initial investigation, sites are removed from the CERCLIS database because no contamination was found, or contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious and did not require Federal Superfund action or NPL consideration.

Neither the Site nor any other facilities within a one-half mile radius of the Site are listed in the CERCLIS database.



Resource Conservation and Recovery Information System - Treatment, Storage, or Disposal Facilities (RCRIS-TSD)/RCRIS Corrective Action Activity (CORRACTS)

The Resource Conservation and Recovery Act (RCRA) program identifies and tracks hazardous wastes from the point of generation to the point of disposal. The Resource Conservation and Recovery Information System (RCRIS) database tracks those facilities that treat, store and/or dispose of hazardous materials as defined by RCRA (referred to as TSD facilities). The RCRIS Corrective Action Activity (CORRACTS) database identifies TSD facilities that have conducted, or are currently conducting, corrective action(s) as regulated under RCRA.

The Site is not listed in the RCRIS-TSD or the CORRACTS database. None of the facilities located within a one-half mile radius from the Site in the RCRIS-TSD or within a one-mile radius from the Site in the CORRACTS database are expected to impact the environmental integrity of the Site and are, therefore, not considered RECs with respect to the Site.

Resource Conservation and Recovery Information System Generators/Transporters (RCRIS Gen/Trans)

This list includes operations that generate or transport hazardous waste, which must obtain a hazardous waste generator identification number or transporter permit.

The Site was identified as a Large Quantity Generator (LQG) in the database. Additionally, the database revealed the presence of 3 LQG facilities, 2 Small Quantity Generator (SQG) facilities and 3 Conditionally Exempt Small Quantity Generators (CESQG) within a one-quarter mile radius of the Site. The database identified 8 registered RCRA hazardous waste generator facilities within a one-quarter mile from the Site. The following sites have the potential to impact the environmental integrity of the Site and are considered a REC:

Listing	Map ID	Distance/ Direction	Assumed Hydraulic Gradient	Status/Available Data
424 Wythe Avenue	A3	Site	Not Applicable	LQG - EPA ID NYR000145813. Generates waste type D001 (ignitables). No violations reported. Also appears on the UST/HIST UST, Manifest and FINDS databases.



Listing	Map ID	Distance/ Direction	Assumed Hydraulic Gradient	Status/Available Data
Chromium Plating & Polishing 373 Wythe Avenue	G21	< 1/8 mile East	Crossgradient	SQG - EPA ID NYD041975715. Former LGQ. Facility has received notices of violations in the generator department for which compliance has been achieved. Also appears on the FINDS, LTANKS and HIST LTANKS, and Manifest databases.

The Site is identified in the LQG database as 424 Wythe Avenue. No violations have been reported for the Site; however, hazardous material generation at the Site is considered a REC due to the potential for impacts to the Site from undocumented releases of hazardous ignitable wastes.

The facility located at 373 Wythe Avenue is considered a REC due to proximity to the Site, historical chrome plating operations, history of releases and generator status.

The remaining 7 sites are not considered RECs due to the assumed hydraulic gradient to the west-northwest, lack of reported releases or spills, lack of reported violations or violations where compliance has been achieved or violations in office or record keeping departments, and/or distance from the Site.

Facility Index System/Facility Identification Initiative Program Summary Report (FINDS)

The Facility Index System/Facility Identification Initiative Program Summary Report (FINDS) contains facility information from several databases including the Federal Permit Compliance System Wastewater Discharges database, the USEPA Civil Enforcement Docket, and the New York State Air Discharge database.

The Site is listed in the FINDS database as 424 Wythe Avenue with a RCRAInfo listing and as a biennial hazardous waste reporter, which is considered a REC due to the generation of hazardous waste.

Emergency Response Notification System (ERNS)

The Emergency Response Notification System (ERNS) is a national database used to collect information on reported releases of oil and hazardous substances.

The Site is not listed on the ERNS database.



Hazardous Waste Disposal Site Inventory (HSWDS)

The Hazardous Waste Disposal Site Inventory database includes any known or suspected hazardous waste disposal sites.

Neither the Site nor other facilities within a one-mile radius are listed on the HSWDS database.

State Inactive Hazardous Waste Sites (SHWS)

The New York State Inactive Hazardous Waste Sites (SHWS) database, compiled by the NYSDEC, maintains information regarding the investigation and cleanup of suspected hazardous waste sites.

The database identified 4 SHWS database facilities within a one-mile radius of the Site. None of these facilities have the potential to impact the environmental integrity of the Site based on the assumed hydraulic gradient to the west-northwest, presence of a hydraulic barrier and/or case status, and are not considered RECs with regard to the Site.

Solid Waste/Landfill Facilities (SWF/LF)

The SWF/LF database is a comprehensive listing of State permitted/recorded solid waste facilities.

The database identified 7 SWF/LF database facilities within a one-half mile radius of the Site. The following sites have the potential to impact the environmental integrity of the Site and are considered a REC:

Listing	Map ID	Distance/ Direction	Assumed Hydraulic Gradient	Status/Available Data
Lot 16, Taxblock 2469 426 Wythe Avenue	E24	< 1/8 mile Southeast	Crossgradient	Inactive vehicle dismantling. Also appears in the E Designation database for window/wall attenuation & alternate ventilation

This facility is currently occupied by an auto repair facility and is considered a REC based on historic and current operations.

The remaining 6 sites are not considered RECs due to the assumed hydraulic gradient to the west-northwest, lack or reported releases and/or case status.



New York State Spills Information Database (NY Spills)/Leaking Underground Storage Tanks (LTANKS)

The NY Spills and LTANKS databases were researched to identify listings within one-half mile of the Site, spill cases that were listed as open cases, or listings that were identified as RECs. The NY spills database search identified 14 listings located within approximately 0.5 miles of the target property. The LTANKS database identified 13 listings located within 0.5 miles of the Site. The NY Spills/LTANKS that are considered RECs, based on proximity to the Site, quantity of release, status as active or closed, and assumed hydraulic gradient relative to the Site, are listed in the table below.

Listing	Map ID	Distance/ Direction	Assumed Hydraulic Gradient	Status/Available Data
NYCDOT Garage 17 South 6 th Street	F12	< 1/8 mile Adjacent to the West	Downgradient	NY Spill Case No. 9611385. Spill occurred on 12/16/1996. During removal of a gas tank gasoline odors were noticed. Impacted soil was excavated and removed. Confirmed GW contamination with decreasing contaminant concentrations. Spill closed on 11/15/2005.
Chromium Plating & Polishing 373 Wythe Avenue	G20	< 1/8 mile East	Crossgradient	LTANKS Spill No. 8801453. UST failed a tightness test on 5/17/1988. Tank was repaired, retested and passed.

Of the 27 combined spill sites, no spills were identified at the Site building. The remainder of the 25 NY Spills and LTANKS cases not listed in the above table are not considered RECs based on their distance from the Site and/or closed status.

Petroleum Bulk Storage Tanks (USTs/ASTs)

The NYSDEC petroleum bulk storage (PBS) tank database was researched to identify listings for the Site and properties located within one-quarter mile from the Site.

The Site was identified in the UST database as 424 Wythe Avenue. The databases identified the presence of 33 petroleum bulk storage tank facilities (i.e., 15 UST listings and 18 AST listings) located within one-quarter mile from the Site. The following sites have the potential to impact the environmental integrity of the Site and are considered a REC:



Listing	Map ID	Distance/ Direction	Assumed Hydraulic Gradient	Status/Available Data
424 Wythe Avenue	A2	Site	Not Applicable	PBS No. 2-242306. One (1) 1,500-gallon steel/carbon steel fuel oil UST. Secondary containment not provided. Overfill product level gauge. No leaks detected. Installation dates not reported. UST closed and removed on 10/1/1995.
Chromium Plating & Polishing 373 Wythe Avenue	G20	< 1/8 mile East	Crossgradient	PBS No. 2-095214. One (1) 5,000 gallon steel/carbon steel UST. Secondary containment not provided. Vent whistle overfill protection. UST installed on 5/1/1970. Tank failed a tightness test on 5/17/1988 (Spill No 8801453). Tank was repaired, retested and passed. Spill was closed on 3/4/1994. UST closed and removed on 6/25/2007.

The Site is identified in the UST database with one closed and removed UST. Although the UST was closed and removed, the former presence of the UST is considered an environmental concern associated with the Site. Based on the historical operations at the Chromium Plating & Polishing facility at 373 Wythe Avenue, that facility is considered a REC with regard to the Site. The remaining 32 sites are not considered RECs due to lack of reported releases, case status and/or assumed hydraulic gradient to the west-northwest.

Chemical Bulk Storage Tanks (USTs/ASTs)

The NYSDEC Chemical Bulk Storage (CBS) Tanks List includes a list of facilities that store regulated hazardous substances in USTs of any size and ASTs greater than 185-gallons in capacity.

The databases identified the presence 1 CBS UST/AST facility located within one-quarter mile from the Site. This facility does not appear to have the potential to impact the environmental integrity of the Site and is not considered a REC.

Although the Site was not identified in the CBS UST/AST database, two (2) 6,250-gallon plastic ASTs containing a 50-percent aqueous solution of potassium acetate are located on-site and were installed in 2001. According to the NYSDEC, potassium acetate is not a regulated hazardous substance.



New York Manifest

The manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

The Site was identified in the NY Manifest database as 424 Wythe Avenue. The databases revealed the presence of 23 New York Manifest facilities located within one-quarter mile from the Site. The following site has the potential to impact the environmental integrity of the Site and is considered a REC:

Listing	Map ID	Distance/ Direction	Assumed Hydraulic Gradient	Status/Available Data
424 Wythe Avenue	A2	Site	Not applicable	EPA ID: NYR000145813. Site is listed with 25 Manifest documents for the years 2008, 2009, 2010 and 2011. Unreported waste types transported in metal drums for incineration. No violations reported.
Chromium Plating & Polishing 373 Wythe Avenue	G21 and G22	< 1/8 mile East	Crossgradient	EPA ID: NYD041975715. Site is listed as having 42 Manifest listings for NY and CT for the years 1990, 1991, 1993, 1994, 1996, 1997, 2000, 2002 and 2003. Waste types include F001, F006 (electroplating waste), D001 (ignitables) and unreported wastes. Handling methods listed as recovery and biological, chemical or physical treatment. The quantities listed in each Manifest document vary but over 100,000 lbs of F006 have been generated.

Hazardous materials generation at the Site is considered a REC due to the potential for undocumented releases to impact the Site. Hazardous waste generation at the Chromium Plating & Polishing facility is also considered a REC with regard to the Site due to its proximity to the Site. The remaining 22 sites are not considered RECs due to lack of reported violations, distance from the Site and/or the assumed hydraulic gradient to the west.

Registered Dry Cleaners (NYSDEC)

The list of registered dry cleaners, compiled by the NYSDEC, identifies dry cleaning facilities within one-quarter mile radius of the Site.

Neither the Site nor other facilities located within a one-quarter mile radius were identified on the NYSDEC Registered Dry Cleaners database.



Manufactured Gas Plants

The list of former manufactured gas (coal gas) sites identified 8 former manufactured gas facilities within one mile of the Site. Based on the assumed hydraulic gradient to the west-northwest, presence of a hydraulic barrier and/or case status, none of these facilities are expected to have an adverse impact on the Site and are not considered RECs with regard to the Site.

Toxic Release Inventory System (TRIS)

The Toxic Release Inventory System (TRIS) is a national database used to collect information and report releases of toxic chemicals to the air, water and land in reportable quantities.

The Site is not listed on the TRIS database.

New York Voluntary Cleanup Agreements (NY VCP)/ Brownfield Cleanup Program (BCP)

The voluntary remedial program uses private monies to remediate contaminated sites and return them to productive use. The program covers nearly every kind of contamination. The list of NY VCP/ Brownfield Cleanup Program (BCP) sites identified 2 NY VCP and 1 BCP facility within one mile of the Site. Based on the assumed hydraulic gradient to the west-northwest, none of the facilities are expected to have an adverse impact on the Site and are not considered RECs with respect to the Site.

5.2 Local Regulatory Agency Research

Additional federal, state and local records sources were reviewed to supplement information obtained through review of standard environmental record sources. The additional records and sources consulted in conjunction with this Phase I ESA are listed below. Copies of correspondence to and received from these record sources are included in Appendix I.

5.2.1 United States Environmental Protection Agency (USEPA)

An online search of the USEPA website was conducted on July 27, 2012 to determine if they hold records pertaining to the Site. The EPA database identifies the Site as an active biennial hazardous waste reporter and a LQG in the RCRA Information System under Information System ID NYR0000145813. No violations are reported.

5.2.2 New York State Department of Environmental Conservation (NYSDEC)

A Freedom of Information Act Letter (FOIL) dated July 2, 2012 was filed with the NYSDEC to determine if they hold records pertaining to the Site. The NYSDEC responded to the request on July 20, 2012 with responsive records. The NYSDEC provided a Bulk Petroleum Storage Program Facility Information Report for 424 Wythe Avenue. The Information Report identifies one (1) steel 1,500-gallon No. 2 fuel oil UST



that was closed and removed from the property on 10/1/1995. The UST had steel piping, product level gauging, no leak detection, submersible pumping and dispensing methods and was last tested on 12/1/1990 before removal.

5.2.3 New York City Department of Buildings (NYCDOB)

NYCDOB records were reviewed on July 27, 2012 to determine whether there were references to buildings, tanks or other structures, property usage or inspection reports that may have indicated the presence, past use, or release of hazardous substances, wastes or petroleum products at the Site.

NYCDOB records reviewed indicated the presence of one (1) NYCDOB violation, which was dismissed on 6/23/2011 and no Environmental Control Board (ECB) violations. The dismissed NYCDOB violation pertains to a boiler system and, due to its dismissed status, is not considered a REC.

5.2.4 New York City Department of Environmental Protection (NYCDEP)

A FOIL dated July 2, 2012 was filed with the New York City Department of Environmental Protection (NYCDEP) to determine if the NYCDEP holds records pertaining to the Site. The NYCDEP responded to the request on July 24, 2012 indicating that no records were available for the Site.

5.2.5 New York City Department of Health (NYCDOH)

A FOIL dated July 2, 2012 was filed with the New York City Department of Health (NYCDOH) in an effort to determine if the NYCDOH had any records pertaining to the Site. The NYCDOH Office of Environmental Investigations responded to the request on July 23, 2012 indicating that there were no records of investigation at the Site.

5.2.6 New York City Fire Department (FDNY)

A Fire Department Record Search Request regarding tanks stored and/or removed at the Site, the history of leaks, and pending violation orders was made on August 2, 2012. The FDNY responded to the request on August 21, 2012 indicating that there were no records available for the Site.



6.0 SITE RECONNAISSANCE AND INTERVIEWS

The site reconnaissance was conducted on July 6, 2012 by Ms. Rebecca Tummon of NYCDDC and by Mr. Evan Mankoff and Mr. Mark Freed of LBA. The weather conditions at the time of the site inspection were sunny with a slight breeze with a temperature of 95 degrees Fahrenheit. The Site reconnaissance focused on evidence of spills, staining, ASTs, USTs and any other indication of potential RECs associated with the Site. The Site reconnaissance was limited to observations of surficial conditions only. Furthermore, the Site reconnaissance was limited to the exterior portions of the Site, as all on-site buildings and structures were locked. Inaccessible areas included a 1-story concrete block building (identified as a workshop), a hazardous materials storage area surrounded by a chain-link fence, a small 1-story concrete block building labeled "high voltage" and a walk-in storage unit labeled "flammable". The Site is located directly underneath the eastern end of the Williamsburg Bridge at 424 Wythe Avenue. A Site plan is provided as Figure 2.

The Site is currently owned by the NYCDOT and is utilized by the Bureau of Bridges for hazardous material and petroleum storage, parking, storage and day-to-day operations. The Site is bounded by Wythe Avenue to the east, beyond which is a vacant, asphalt-covered lot, by South 5th Street and the Spencer Corp./GMI Corp. building to the north, by South 6th Street and an auto repair facility to the South, and to the west by an anchorage point for the Williamsburg Bridge, beyond which is a NYCDOT bridge painting facility (17 South 6th Street). Generally, the Site is surrounded by residential, commercial and government properties. Groundwater monitoring wells were noted immediately adjacent to the Site along South 6th Street and adjacent to the 17 South 6th Street property. These wells were installed during an investigation of a gasoline release at 17 South 6th Street. Two (2) 10-inch subsurface oil utility pipes were marked-out along Wythe Avenue but did not connect to the Site.

The majority of the Site consists of a bituminous asphalt-paved lot with a 1-story workshop building, hazardous materials storage area, empty drum storage area, 1-story building labeled "high-voltage", and parking and storage space. The Site is located directly beneath the Williamsburg Bridge and was noted to slope from east to west, where storm drains are located. Approximately six (6) 12-inch diameter storm water drainage pipes run down the length of the Williamsburg Bridge support structures (located on-site) and discharge directly onto the paved surface of the Site. Approximately eleven (11) City-owned vehicles, including trucks, vans and a water tanker truck, and three (3) generators were parked and stored at the Site during the reconnaissance.

Access to the Site is gained from Wythe Avenue with the remainder of the Site surrounded by chain-link fencing. A 1-story concrete block building is located along the southeastern corner of the Site. This building was identified by the NYCDOT as a workshop for City-employed bridge painters. The building contains an overhead bay door that opens into the Site. The building was locked and inaccessible at the time of the



Site reconnaissance; however, the NYCDOT indicated that the building contains fluorescent light fixtures and is estimated to approximately 90 years old.

A hazardous materials storage area is located along the approximate center of the north face of the workshop building. One side of the storage area abuts the building, while the remaining perimeter is surrounded by sheet metal and a chain-link fence with a sheet metal roof. An inspection of the hazardous material storage area was limited to observations that could be made from outside of the fence, as this area was locked during the Site reconnaissance. Five (5) 55-gallon drums of acrylic sealer (labeled empty), approximately twelve (12) 5-gallon empty containers of graffiti remover, approximately five (5) 55-gallon drums of Mercury-200 (contains xylene and n.but.alc.), and several unlabeled and open 5-gallon buckets located on top of the Mercury-200 drums were stored in the area during the Site reconnaissance. All drums and buckets showed heavy paint staining. All of the Mercury-200 drums, at least one of the acrylic sealer drums, and all of the graffiti remover containers appeared to be stored on spill containment pallets. The asphalt within the hazardous materials storage area appeared to show signs of staining; however, a thorough inspection was not possible due to inaccessibility to this area.

Adjacent to the hazardous materials storage area on the west is an empty drum storage area. Approximately seventeen (17) empty drums, an air conditioner and four (4) clothes dryers were stored in this area. The asphalt in this area appeared to be in good condition with no signs of cracking or staining.

Two (2) 6,250-gallon plastic ASTs containing potassium acetate in a 50-percent aqueous solution are located adjacent to the workshop building along Wythe Avenue on a slightly elevated concrete platform. Dispenser tubes lead from each tank and connect to a joint, valve-controlled dispenser head located between the two (2) ASTs. The concrete pad beneath the ASTs and surrounding asphalt was in good condition with no signs of cracks or staining. According to the NYCDOT, these tanks were installed in 2001.

The western side of the Site contains a small 1-story concrete brick building labeled "high-voltage" and likely used for the housing of electrical equipment; however, this building was locked and inaccessible during the reconnaissance. Directly in front (i.e., east) of the building is a steel plate that appeared to be a subsurface access panel.

Three (3) heavily paint-stained plastic storage tanks, likely used to store paint, were located behind the electrical equipment building. Each tank had an open access port in the top and a small amount of rainwater was observed in each tank. There appeared to be no sheen on the water surface and the inside of the tanks appeared to be clean. The asphalt surrounding the tanks appeared to be in good condition; however, a thorough inspection of the surrounding asphalt was difficult due to the build-up of sediment from run-off of stormwater from the Williamsburg Bridge structure, as the tanks are located on the downgradient side of the Site.



An approximate 250-gallon diesel AST within a metal secondary containment basin is located along South 5th Street on the northern side of the Site. The base of the AST was heavily stained. Thick petroleum-type staining covered the interior base of the containment basin, making a thorough inspection of the basin difficult. No active leaks, holes or cracks were noted in either the AST or containment basin. The asphalt surrounding the AST and containment basin showed signs of petroleum staining, which likely occurred during filling operations. However, the integrity of the asphalt pavement was noted to be sound. As a result, the staining on the asphalt is considered a *de minimis* condition not requiring any further action/investigation. A used oil spill kit containing an oil-soaked absorbent boom and bucket was observed in a covered 55-gallon container next to the AST.

A second approximate 250-gallon diesel AST, in close proximity to the AST described above, was noted on-site during the reconnaissance. The tank was located within a sealed metal secondary containment chamber. The secondary containment chamber showed signs of age, including rusting and paint delamination; however, there was no evidence of an active leak, holes or cracks. The asphalt surrounding the AST showed signs of petroleum staining.

A walk-in storage container labeled "flammable" is present along the northern Site boundary. This space was locked and inaccessible during the Site reconnaissance. Two (2) empty compressed gas cylinder storage cages are located next to the flammable storage container.

The majority of the Site is used as a surface parking lot for City-owned vehicles and equipment. Varying quantities of paints and sealers were stored in discrete locations around the Site in 1- to 5-gallon buckets. Generally, the asphalt appeared to be in good condition with no major signs of cracking or wear. Staining was noted in discrete locations throughout the Site and appeared to be the result of relatively minor automobile leaks.

Based on the age of the Site and Site buildings, interior and exterior components may contain lead-based paint, asbestos, PCBs, mercury and/or other potentially hazardous materials, the presence of which represent *de minimis* conditions.

Photographs of the Site reconnaissance are provided in Appendix A.

Site Interview

In accordance with the ASTM standard on all appropriate inquiry (AAI), an owner and a User questionnaire were provided to the NYCDOT for completion. The questionnaires are designed to elicit information from the owner and User that may provide insight into the environmental condition of the Site. A representative of the NYCDOT completed both questionnaires and returned them to LBA. Copies of the completed questionnaires can be found in Appendix I.



Information provided by the owner questionnaire is summarized below and provided throughout the report where appropriate:

- The property is currently used as a workshop for City-employed bridge painters and has been used in this capacity for 14 years.
- Prior to its current use, the property was used as a workshop and locker room for City-employed skilled tradesman for bridge work.
- The estimated age of the on-site structures is approximately 90 years old and has been owned by New York City for approximately 90 years.
- No asbestos containing materials are currently present on-site.
- Lead-based paint was previously used on-site and the on-site buildings utilize fluorescent light fixtures.
- The property has never been used for industrial/manufacturing operations, gasoline station, automotive repair, commercial printing, drycleaning, photo developing, junk/scrap yard, landfill, waste treatment/storage or disposal/recycling.
- Individual containers of chemicals and paints have historically and are currently located on-site. These include containers of thinners, acetone, lacquer thinner and mineral spirits.
- The NYCDOT representative is not aware of any fill material on-site. No fill material has reportedly been brought to the Site since 1997.
- A 1,500-gallon heating oil UST was formerly located on-site and was removed on 10/1/1995.
- No USTs were upgraded or replaced.
- The property currently contains two (2) 6,250-gallon potassium acetate ASTs that were installed in 2001.
- No ASTs were previously located on the property and none have been upgraded or replaced.
- The NYCDOT representative is not aware of any remediation efforts conducted at the property.
- There have been no spills at the property.
- There are no wells, recharge basins, retention basins, holding basins, wetlands or septic systems/cesspools located at the property.
- On-site buildings are currently serviced by local utilities and are currently heated by natural-gas fired forced air and steam. Previous to this, on-site buildings were heated using fuel oil.
- It is unknown if PCB containing transformers are currently or were previously located on the property.
- It is unknown if the property was tested for radon.
- The NYCDOT representative identified historic lead paint delamination from the Williamsburg Bridge as a potential REC.



Information provided by the User questionnaire is summarized below and provided throughout the report where appropriate:

- The User is unaware of any environmental liens or activity use limitations (AULs) recorded against the property.
- The User did not provide any specialized knowledge or commonly known or reasonable ascertainable information regarding the Site.
- No property transfer is proposed for the Site, as such, the User is not required to provide an opinion on the relationship between the purchase price and fair market value of the property.
- The User did not provide any information on past uses of the Site or information on specific chemicals currently and historically used at the Site.
- The User is unaware of any spills, chemical releases or environmental cleanups at the Site.
- No information was provided by the User on the obvious presence or likely presence of indicators of contamination or known contamination at the Site.



7.0 FINDINGS

The Phase I ESA has revealed the following findings:

- Based on a review of geotechnical boring logs provided by NYCDDC, fill material is present at the Site (NYCDGS, 1991). It is likely that this material was brought on-site during the construction of the Williamsburg Bridge. The presence of fill material at the Site is considered a REC as its quality is unknown.
- The Site was historically used for manufacturing purposes in the late 1800s. The 1887 historic Sanborn fire insurance map indicates the former presence of a licorice manufacturer, including mixing and boiling tanks and engines, boiler shop, vinegar house with pumps, and job printing. It is possible that historic Site operations involved the use of petroleum products and/or other hazardous materials. Therefore, historical on-site manufacturing operations are considered a REC.
- The Site is currently owned by the NYCDOT and is utilized by the Bureau of Bridges for hazardous material and petroleum storage, parking, storage and day-to-day operations. Hazardous materials are stored in a fenced-in area in the southeastern portion of the Site, along the north face of the workshop building. This area was locked and inaccessible to LBA for a thorough inspection; however, some staining of the asphalt was observed through the fence. Additionally, varying quantities of paints and sealers were stored in discrete locations across the Site. The storage of hazardous materials is considered a potential REC due to the potential for any undocumented releases to impact the soil and groundwater at the Site.
- Flammable materials are stored in the southern portion of the Site, along the north face of the workshop building. The storage area was locked and completely inaccessible to LBA for an inspection. The storage of flammable materials is considered a potential REC due to the potential for any undocumented releases to impact the soil and groundwater at the Site.
- The Site was identified in the RCRAInfo database as a large quantity generator (LQG) of hazardous ignitable waste. Although no releases or violations have been reported, this listing is considered a potential REC due to the potential for any undocumented releases to impact soil and groundwater at the Site.
- Two (2) 6,250-gallon ASTs are used at the Site for the storage of potassium acetate, a deicer. No secondary containment measures were noted. Although a cursory review of Part 597 of the Compilation of Codes, Rules and Regulations of the State of New York (NYCRR) did not identify potassium acetate as a hazardous substance, the ASTs may still be subject to the bulk storage



requirements of NYCRR Part 596. These two (2) ASTs are considered an environmental concern.

- Two (2) 250-gallon diesel ASTs are present at the Site. One such tank was enclosed in a sealed containment chamber. The second AST was located within a metal secondary containment basin. The base of this AST and the containment basin were heavily stained. Staining of the asphalt around the ASTs and a used spill kit were observed in the vicinity. The ASTs are considered an environmental concern; however, staining of the surrounding asphalt is considered a *de minimis* condition due to the relatively minor amount observed.
- A 1,500-gallon fuel oil UST (PBS #2-242306) was formerly present at the Site. The UST was closed and removed on 10/1/1995. There are no reported releases in connection with the UST; however, no closure documents pertaining to the location of the tank or the condition of the tank and the surrounding soil at the time of closure were available for LBA's review. This former UST is considered an environmental concern.
- Approximately six (6) 12-inch stormwater drains discharge water from the on-site Williamsburg Bridge support structures directly onto the asphalt pavement of the Site. As the quality of the effluent is unknown, this is considered an environmental concern.
- Based on the age of the on-site structures, it is possible that ACM, LBP, PCBs and/or mercury may be present. The potential presence of these materials is considered an environmental concern.
- Industrial and manufacturing operations, as well as filling station and auto repair operations, were historically conducted in the immediately surrounding area. Due to the potential for these operations to have impacted the Site, this is considered a REC. In addition, there is a potential for delaminated LBP flakes from the Williamsburg Bridge to have reached the Site, which is a potential REC.



8.0 CONCLUSIONS AND RECOMMENDATIONS

LBA has performed a Phase I ESA in general conformance with the scope and limitations of ASTM Practice E 1527-05. The Site is located at 424 Wythe Avenue (Block 2454, Lot 1) in Brooklyn, NY. The northwest and southwest portions of the Site are proposed to be utilized by the NYCDOT for the installation of bulk paint and chemical storage containers. Any additions to, exceptions to, or deletions from this practice are described in Section 1.2 of this report.

The Phase I ESA has identified the following RECs and potential environmental issues:

On-Site

The Phase I ESA identified the following five (5) on-site RECs and eight (8) environmental issues that have the potential to affect conditions at the Site:

- Based on a review of geotechnical boring logs provided by DDC, fill material is present at the Site (NYCDGS, 1991). It is likely that this material was brought on-site during the construction of the Williamsburg Bridge. The presence of fill material at the Site is considered a REC as its quality is unknown.
- The Site was historically used for manufacturing purposes in the late 1800s. The 1887 historic Sanborn fire insurance map indicates the former presence of a licorice manufacturer, including mixing and boiling tanks and engines, boiler shop, vinegar house with pumps, and job printing. It is possible that historic Site operations involved the use of petroleum products and/or other hazardous materials. Therefore, historical on-site manufacturing operations are considered a REC.
- The Site is currently owned by the NYCDOT and is utilized by the Bureau of Bridges for hazardous material and petroleum storage, parking, storage and day-to-day operations. Hazardous materials are stored in a fenced-in area in the southern portion of the Site, along the north face of the workshop building. This area was locked and inaccessible to LBA for a thorough inspection; however, some staining of the asphalt was observed through the fence. Additionally, varying quantities of paints and sealers were stored in discrete locations across the Site. The storage of hazardous materials is considered a potential REC due to the potential for any undocumented releases to impact the soil and groundwater at the Site.
- Flammable materials are stored in the southern portion of the Site, along the north face of the workshop building. The storage area was locked and completely inaccessible to LBA for an inspection. The storage of flammable materials is considered a potential REC due to the potential for any undocumented releases to impact the soil and groundwater at the Site.
- The Site was identified in the RCRAInfo database as a large quantity generator of hazardous ignitable waste. Although no releases or violations have been reported,



this listing is considered a potential REC due to the potential for any undocumented releases to impact soil and groundwater at the Site.

- Two (2) 6,250-gallon ASTs are used at the Site for the storage of potassium acetate, a deicer. Although a cursory review of Part 597 of the NYCRR did not identify potassium acetate as a hazardous substance, the ASTs may still be subject to the bulk storage requirements of NYCRR Part 596. It is recommended that these tanks be registered with applicable local, State and Federal requirements, if applicable. These two (2) ASTs are considered an environmental concern.
- Two (2) 250-gallon diesel ASTs in secondary containment structures are present at the Site. The base of one AST and its metal containment basin were heavily stained. The asphalt around this AST was also stained, and a used spill kit was observed in the vicinity. The ASTs are considered an environmental concern; however, the staining of the surrounding asphalt is considered a *de minimis* condition due to the relatively minor amount observed.
- A 1,500-gallon fuel oil UST (PBS No. 2-242306) was formerly present at the Site. The UST was closed and removed on 10/1/1995. There are no reported releases in connection with the UST; however, no closure documents pertaining to the tank location or the condition of the tank and the surrounding soil at the time of closure were available for LBA's review. This former UST is considered an environmental concern.
- Approximately six (6) 12-inch stormwater drains discharge water from the Williamsburg Bridge support structures on-site directly onto the asphalt pavement on the Site. As the quality of the effluent is unknown, this is considered an environmental concern.
- Based on the age of the on-site building, it is possible that ACM is present. The potential presence of ACM is considered an environmental concern.
- The NYCDOT indicated that LBP was formerly present on-site. Based on the age of the building, it is possible that LBP is still present. The potential presence of LBP-containing materials is considered an environmental concern.
- It is possible that polychlorinated biphenyl (PCB)-containing electrical equipment is located within the building labeled "High voltage", which was locked and inaccessible at the time of LBA's Site reconnaissance. The potential presence of PCBs is considered an environmental concern.
- The NYCDOT has indicated that fluorescent light fixtures are utilized on-site. The presence of this mercury-containing equipment is considered an environmental concern.



Off-Site

The Phase I ESA identified the following off-site RECs and environmental issues that have the potential to affect conditions at the Site:

- Historical and current manufacturing/industrial/commercial operations were identified in the area surrounding the Site and may have the potential to impact the environmental quality of the Site due to proximity and/or assumed hydraulic gradient to the west and are considered a REC. Four such specific off-site properties are described below.
 - The property located at 426 Wythe Avenue, to the south of the Site, is currently occupied by an auto repair facility. Historically, the property was used for toolworks, chromium plating and polishing, and woodworks. It is possible that contamination from historic and/or current operations at this facility could migrate to the Site, potential adversely impacting the environmental quality of the Site.
 - The property located at 373 Wythe Avenue, to the northeast of the Site, was occupied by chromium plating and polishing operations. Additionally, this facility is identified in several environmental databases that are indicative of environmental contamination. It is possible that contamination resulting from historic operations at this facility could migrate to the Site, potential adversely impacting the environmental quality of the Site.
 - The property located at 17 South 6th Street, to the west of the Site, is currently occupied by a NYCDOT bridge painting facility. This property has historically been occupied by the NYCDOT, and formerly utilized a gasoline UST. During excavation of the gasoline UST in 1996, soil and groundwater contamination was encountered. Although the spill case (No. 9611385) was closed in 2005, it is possible that contamination resulting from historic operations at this facility could migrate to the Site, potential adversely impacting its environmental quality.
 - The property located at 67 South 6th Street, to the west of the Site, has historically been utilized for trucking and auto repair operations since the 1920s. Any undocumented releases from this facility could potentially migrate to the Site, adversely impacting its environmental quality.
- The NYCDOT representative identified historic LBP delamination from the Williamsburg Bridge as a potential source of soil contamination at the Site due to its position beneath the Bridge. This is considered an environmental concern.

If construction will be performed at the Site impacting the subsurface, a Phase II Environmental Site Investigation (ESI) is recommended to determine whether the identified RECs and environmental issues have affected the suitability of the Site for installation of prefabricated paint and chemical storage structures to accommodate the



decommissioning of the NYCDOT storage facility at 121 Plymouth Street. The following is further recommended based solely on the proposed scope of work:

- Installation of a total of four (4) soil borings in the proposed area of installation of the three (3) structures to evaluate whether the soil has been impacted by historical and current Site operations. LBG recommends installation of one (1) soil boring in each of the footprints of the 500-SF containers for paint and other combustible materials, and two (2) soil borings in the footprint of the 4,000- to 5,000-SF container for the storage of non-combustible painting equipment.
- Register existing 6,250-gallon potassium acetate solution ASTs with applicable local, State and Federal requirements, if applicable

It should be noted that the other RECs and environmental concerns identified may warrant an investigation; however, no additional investigation is recommended at the present time, based on LBA's understanding of the current scope. Should future additional activities be proposed for the Site, further investigation may be necessary.



9.0 SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

LBA has performed a Phase I ESA of the NYCDOT Paint Storage Facility located at 424 Wythe Avenue in Brooklyn, New York. The scope of the Phase I ESA was generally consistent with the ASTM Standard Practice E 1527-05. Additions to, exceptions to, or deletions from this practice are described in Section 1.2 of this report. Signatures of the Environmental Professionals who participated in conducting this Phase I ESA are provided below. Qualifications for these individuals are provided in Appendix K.

Report Prepared By:

Evan Mankoff, P.G.
Manager, Subsurface Investigations

Report Reviewed By:

Michael McCloskey, P.G.
Vice President



10.0 REFERENCES

Resources Consulted:

- EDR (Environmental Data Resources, Inc.), 2012a. *The EDR Radius Map Report with GeoCheck*, June 29, 2012.
- EDR (Environmental Data Resources, Inc.), 2012b. *EDR Historical Topographic Map Report: Years 1900, 1947, 1956, 1967, 1979 and 1995*. June 29, 2012
- EDR (Environmental Data Resources, Inc.), 2012c. *The EDR-City Directory Abstract: Years 1928, 1934, 1940, 1945, 1949, 1960, 1965, 1970, 1973, 1976, 1980, 1985, 1992, 1997, 2000 and 2005*. June 29, 2012
- EDR (Environmental Data Resources, Inc.), 2012d. *The EDR Aerial Photo Decade Package: Years 1924, 1943, 1954, 1966, 1975, 1984, 1994, 1995 and 2006*. July 2, 2012
- EDR (Environmental Data Resources, Inc.), 2012e. *Certified Sanborn Map Report: Years 1887, 1904, 1918, 1922, 1928, 1935, 1947, 1950, 1965, 1977, 1979 – 1982, 1984, 1986, 1987, 1989, 1991 – 1993, 1995, 1996 and 2001 – 2007*. July 2, 2012.
- EDR (Environmental Data Resources, Inc.), 2012f. *The EDR Environmental LienSearch Report*. July 6, 2012

Regulatory Agencies Contacted/Accessed:

- New York State Department of Environmental Conservation, July 2, 2012.
- New York City Department of Buildings, July 27, 2012.
- New York City Department of Health, July 27, 2012.
- New York City Planning and Zoning Department, July 27, 2012.
- New York City Department of Environmental Protection, July 2, 2012.
- United State Environmental Protection Agency, July 27, 2012.
- United States Fish and Wildlife Service, July 27, 2012
- New York City Fire Department, August 2, 2012.

Documents and Maps:

- American Society for Testing and Materials (ASTM) 2005, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process," ASTM Designation E 1527-05.
- Buxton (Buxton, Herbert T. and Shernoff, Peter K.) 1999, *Ground-water Resources of Kings and Queens Counties, Long Island, New York*. USGS Water-Supply Paper 2498.
- NYCDGS (New York City Department of General Services), Subsurface Exploration Section, 1991. *Record of Borings, Sheets 9, 11 and 12*, September 1991.
- USGS (United States Geological Survey) *7.5-Minute Quadrangle Map, Brooklyn, NY*, 1995.

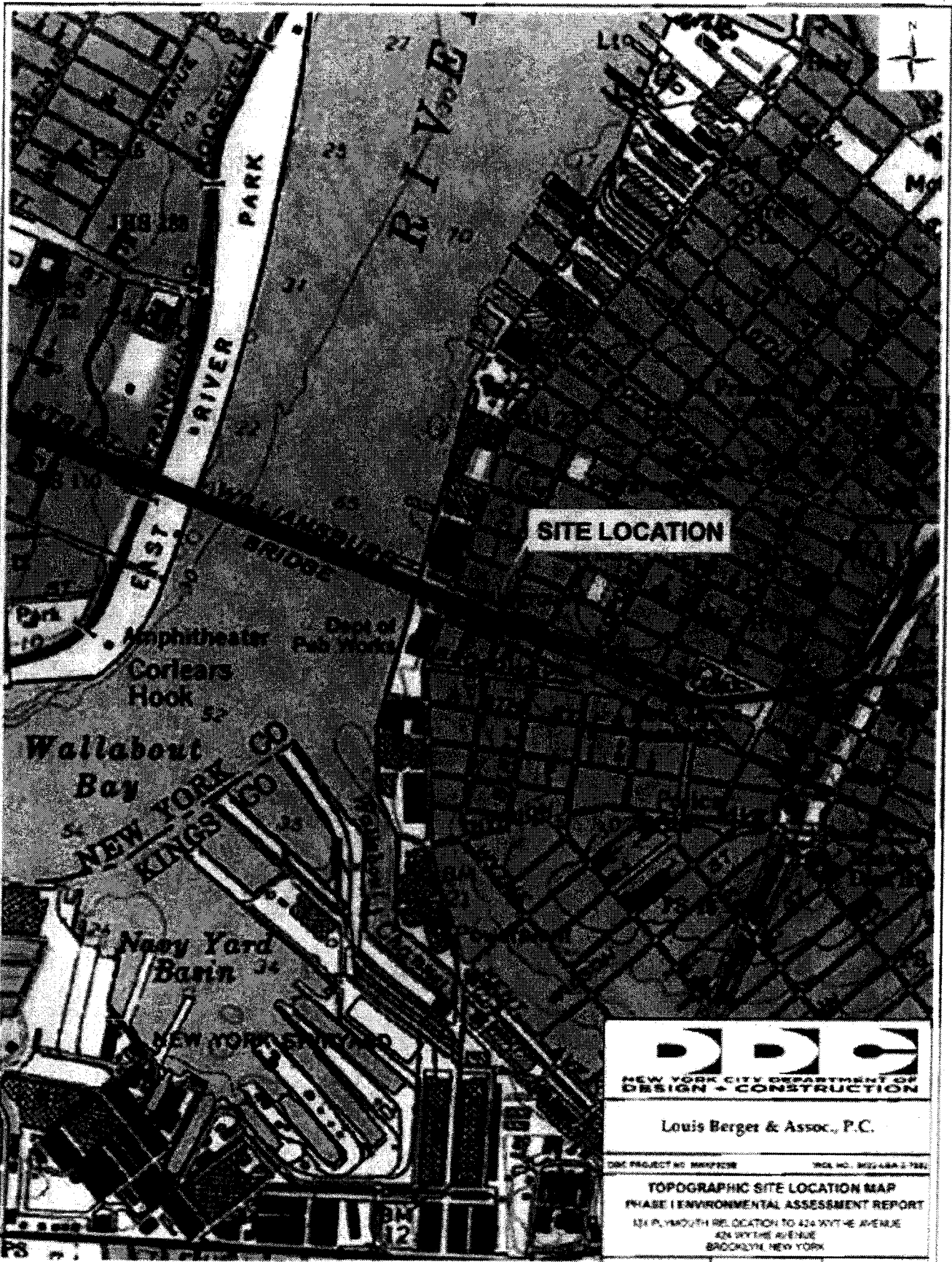


FIGURES

FIGURE 1 - TOPOGRAPHIC SITE LOCATION MAP

FIGURE 2 - SITE PLAN

FIGURE 3 - PROPOSED SOIL BORING LOCATION PLAN



SITE LOCATION

DDC
 NEW YORK CITY DEPARTMENT OF
 DESIGN + CONSTRUCTION

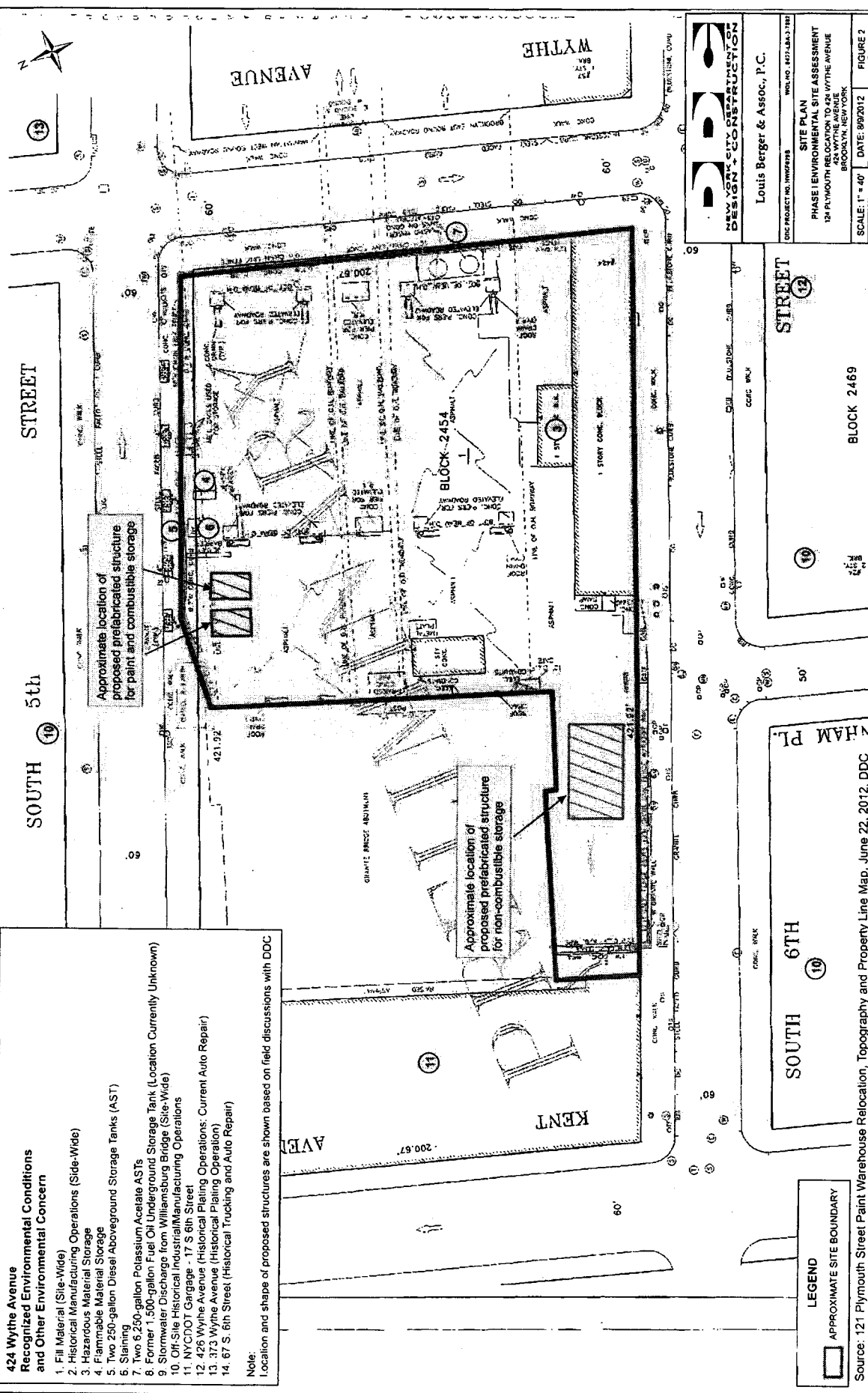
Louis Berger & Assoc., P.C.

DDC PROJECT NO. 10017008 INCL. NO. 102248A-2-1202

TOPOGRAPHIC SITE LOCATION MAP
PHASE I ENVIRONMENTAL ASSESSMENT REPORT
 124 PLYMOUTH RELOCATION TO 424 WYTHE AVENUE
 424 WYTHE AVENUE
 BROOKLYN, NEW YORK

SCALE: 1" = 1000' DATE: 8/8/12 FIGURE: 1

Source: USGS Quadrangle Brooklyn, New York



- 424 Wythe Avenue
Recognized Environmental Conditions
and Other Environmental Concern**
1. Fill Material (Side-Wide)
 2. Historical Manufacturing Operations (Side-Wide)
 3. Hazardous Material Storage
 4. Flammable Material Storage
 5. Two 230-gallon Diesel Aboveground Storage Tanks (AST)
 6. Sluicing
 7. Two 5,250-gallon Potassium Acetate ASTs
 8. Former 1,500-gallon Fuel Oil Underground Storage Tank (Location Currently Unknown)
 9. Stormwater Discharge from Williamsburg Bridge (Side-Wide)
 10. Off-Site Historical Industrial/Manufacturing Operations
 11. NYCDOT Garage - 17 S 6th Street
 12. 426 Wythe Avenue (Historical Plating Operations: Current Auto Repair)
 13. 373 Wythe Avenue (Historical Plating Operation)
 14. 67 S. 6th Street (Historical Trucking and Auto Repair)
- Note:
Location and shape of proposed structures are shown based on field discussions with DDC

Approximate location of proposed prefabricated structure for paint and combustible storage

Approximate location of proposed prefabricated structure for non-combustible storage

LEGEND
 [Symbol] APPROXIMATE SITE BOUNDARY

DDP
 NEW YORK CITY DEPARTMENT OF
 DESIGN + CONSTRUCTION

Louis Berger & Assoc., P.C.
 DDC PROJECT NO. 1100498E WOL. NO. 1477-1483-17ED
 SITE PLAN
 PHASE I ENVIRONMENTAL SITE ASSESSMENT
 121 PLYMOUTH RELOCATION TO 424 WYTHE AVENUE
 BROOKLYN, NEW YORK
 SCALE: 1" = 40' DATE: 09/2012 FIGURE 2

STREET
 SOUTH 5th
 SOUTH 6th
 NORTH 6th
 NORTH 7th

WYTHE AVENUE
KENT AVENUE
PLYMOUTH PL.

BLOCK 2454

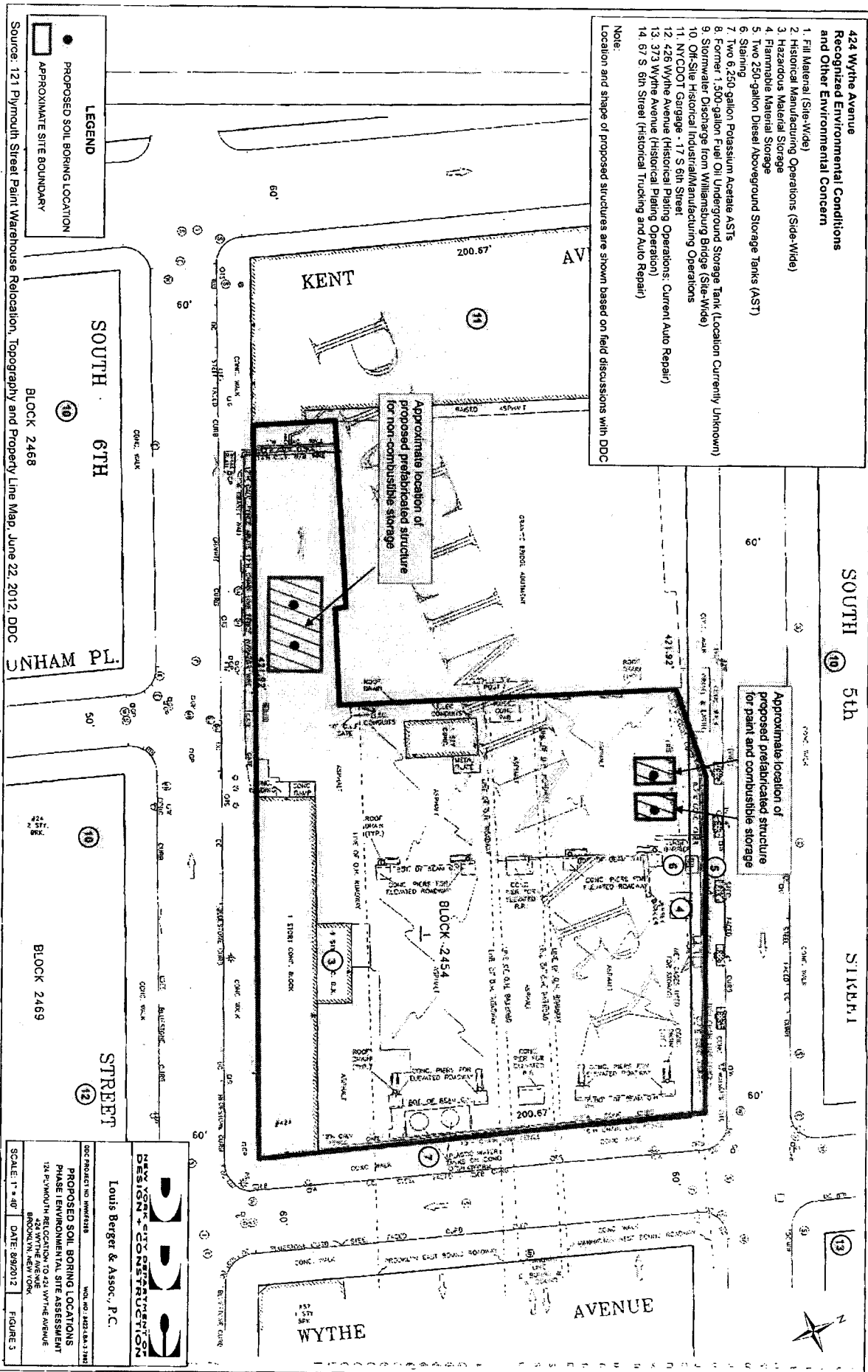
BLOCK 2469

Source: 121 Plymouth Street Paint Warehouse Relocation, Topography and Property Line Map, June 22, 2012, DDC

**424 Wythe Avenue
Recognized Environmental Conditions
and Other Environmental Concern**

1. Fill Material (Site-Wide)
2. Historical Manufacturing Operations (Side-Wide)
3. Hazardous Material Storage
4. Flammable Material Storage
5. Two 250-gallon Diesel Aboveground Storage Tanks (AST)
6. Slating
7. Two 6 250-gallon Potassium Acetate ASTs
8. Former 1,500-gallon Fuel Oil Underground Storage Tank (Location Currently Unknown)
9. Stormwater Discharge from Williamsburg Bridge (Site-Wide)
10. Oil Site Historical Industrial/Manufacturing Operations
11. NY CDOT Garage - 17 S 6th Street
12. 426 Wythe Avenue (Historical Plating Operations - Current Auto Repair)
13. 373 Wythe Avenue (Historical Plating Operation)
14. 67 S 6th Street (Historical Trucking and Auto Repair)

Note:
Location and shape of proposed structures are shown based on field discussions with DDC



Source: 121 Plymouth Street Paint Warehouse Relocation, Topography and Property Line Map, June 22, 2012, DDC

LEGEND
 ● PROPOSED SOIL BORING LOCATION
 □ APPROXIMATE SITE BOUNDARY

SOUTH 6TH STREET
 BLOCK 2468

SOUTH 5TH STREET
 BLOCK 2469

WYTHE AVENUE

NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Louis Berger & Assoc., P.C.
 124 PLYMOUTH STREET, 12TH FLOOR
 BROOKLYN, NEW YORK 11201
 TEL: 718.624.1300
 FAX: 718.624.1301
 WWW.LBA.COM

**PROPOSED SOIL BORING LOCATIONS
 PHASE I ENVIRONMENTAL SITE ASSESSMENT
 124 PLYMOUTH RELLOCATION TO 424 WYTHE AVENUE
 BROOKLYN, NEW YORK**

SCALE: 1" = 40'
 DATE: 09/2012
 FIGURE 3

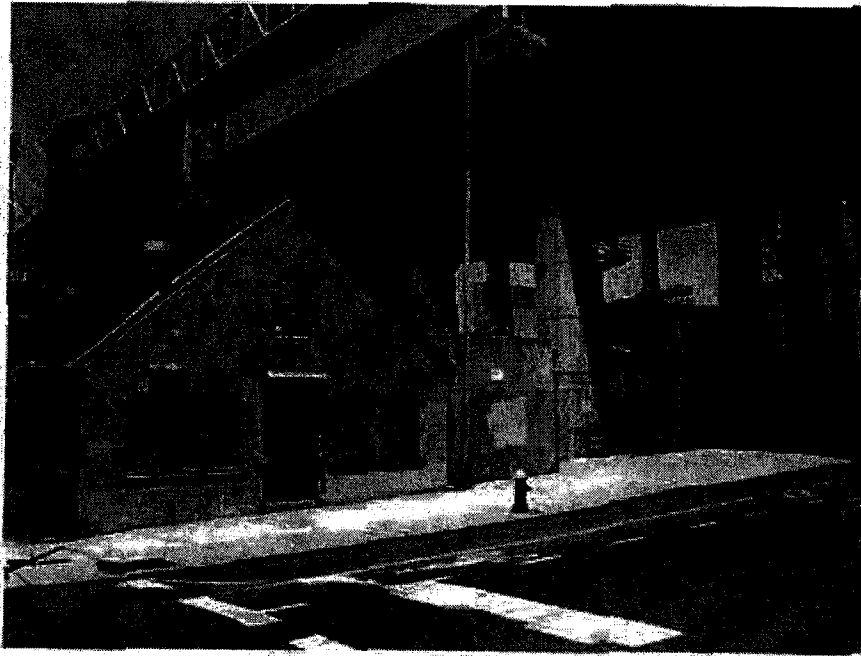


APPENDICES



APPENDIX A
SITE RECONNAISSANCE PHOTOGRAPHS

Photograph #1 – View of the Site looking northwest across Wythe Avenue.



Photograph #2 – View looking northwest across the Site from Wythe Avenue.



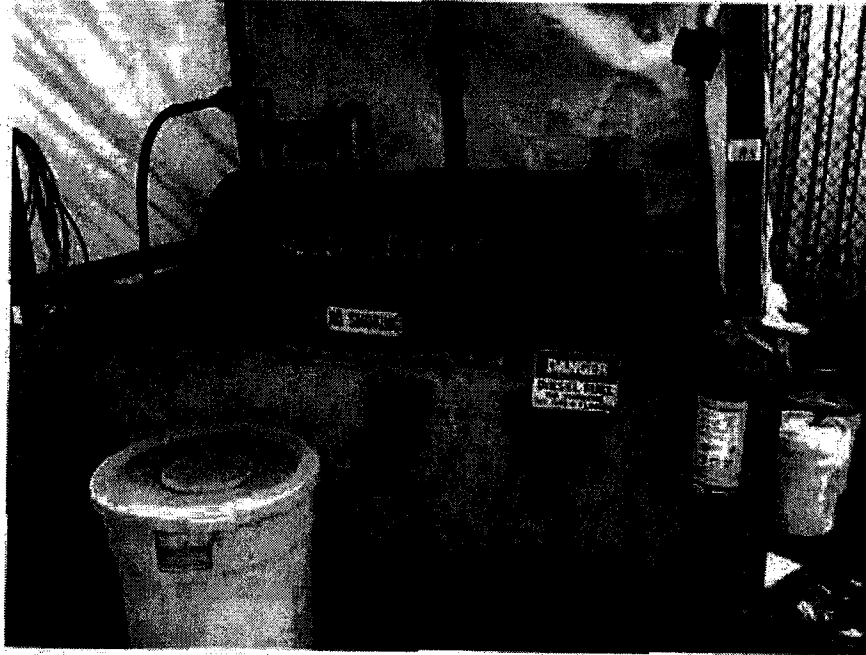
Photograph #3 – View looking south across Site. Note electrical equipment building on the right.



Photograph #4 – View of two (2) 6,250-gallon plastic potassium acetate solution ASTs.



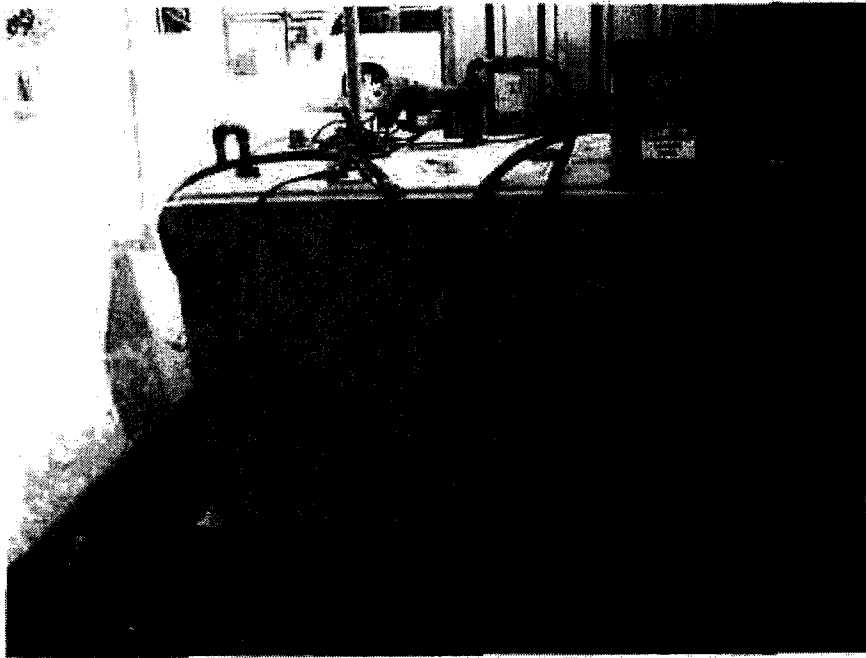
Photograph #5 – View of diesel fuel AST and secondary containment basin. Note used petroleum spill kit in the yellow drum in the foreground.



Photograph #6 – View of the bottom of the AST and secondary containment basin. Note thick dark staining.



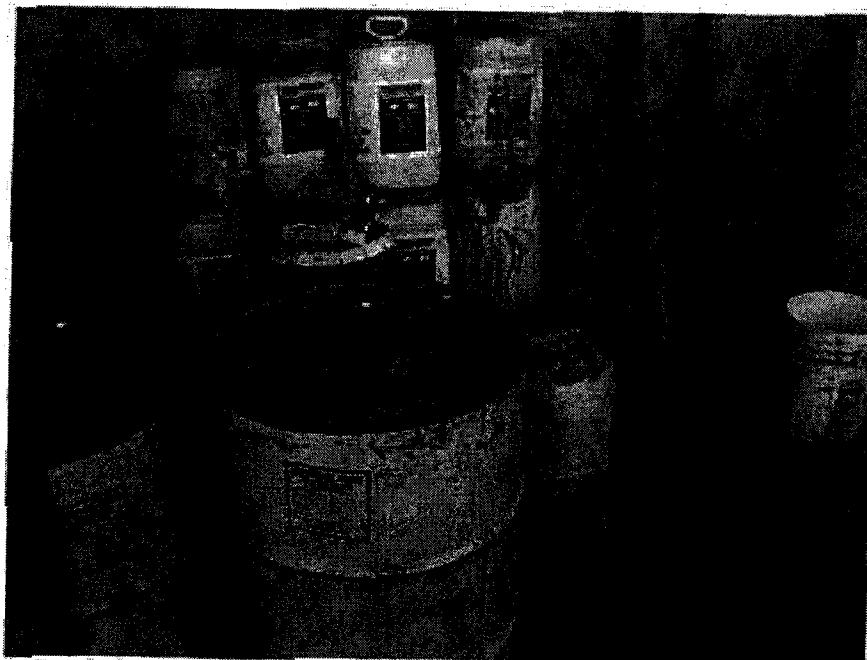
Photograph #7 – View of diesel fuel AST in secondary containment chamber.



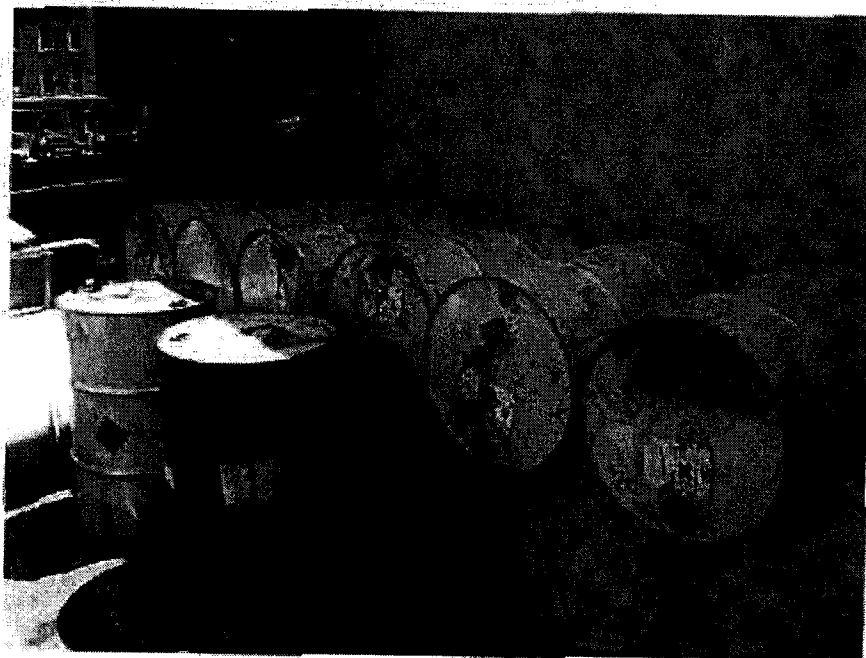
Photograph #8 – View of hazardous materials storage area.



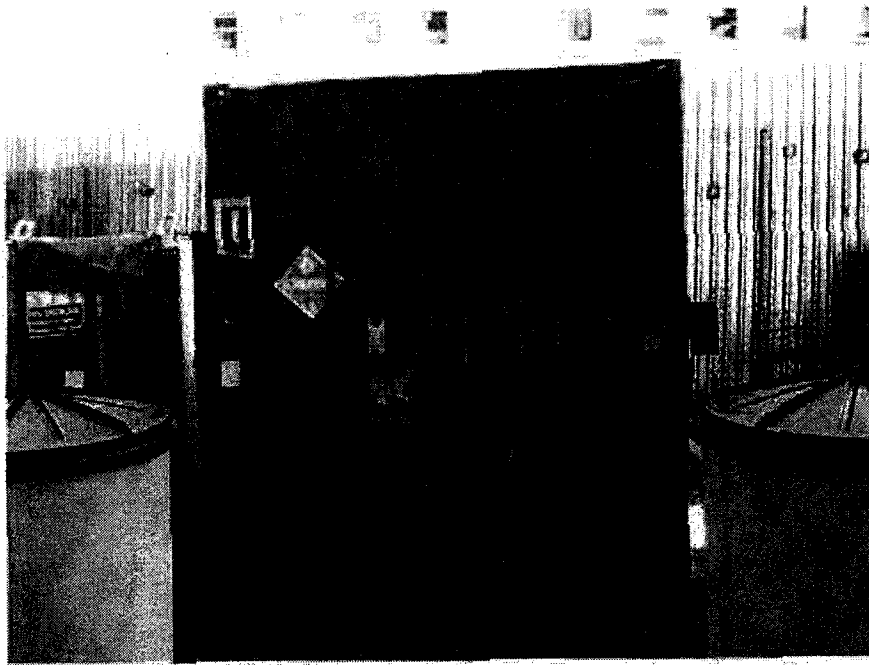
Photograph #9 – Close-up of materials stored within the hazardous materials storage shed.



Photograph #10 – View of empty drum storage area.



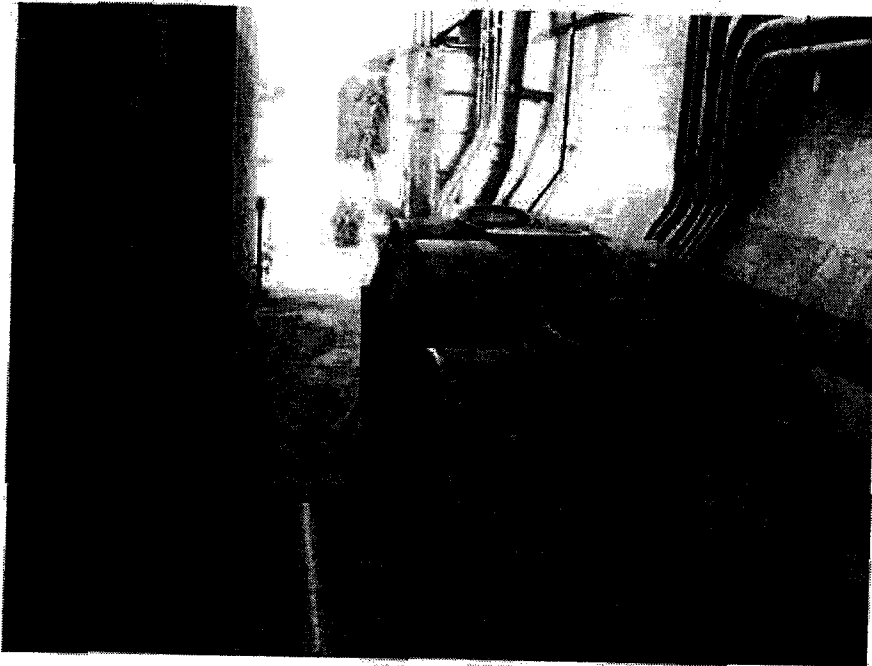
Photograph #11 – View of flammable storage area.



Photograph #12 – View of typical staining found at the site.



Photograph #13 – View of empty paint-stained containers behind electrical equipment building.



Photograph #14 – View of generators and parked NYCDOT vehicles at Site.





APPENDIX B
NEW YORK STATE WETLANDS MAP



SITE LOCATION



NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION



Louis Berger & Assoc., P.C.

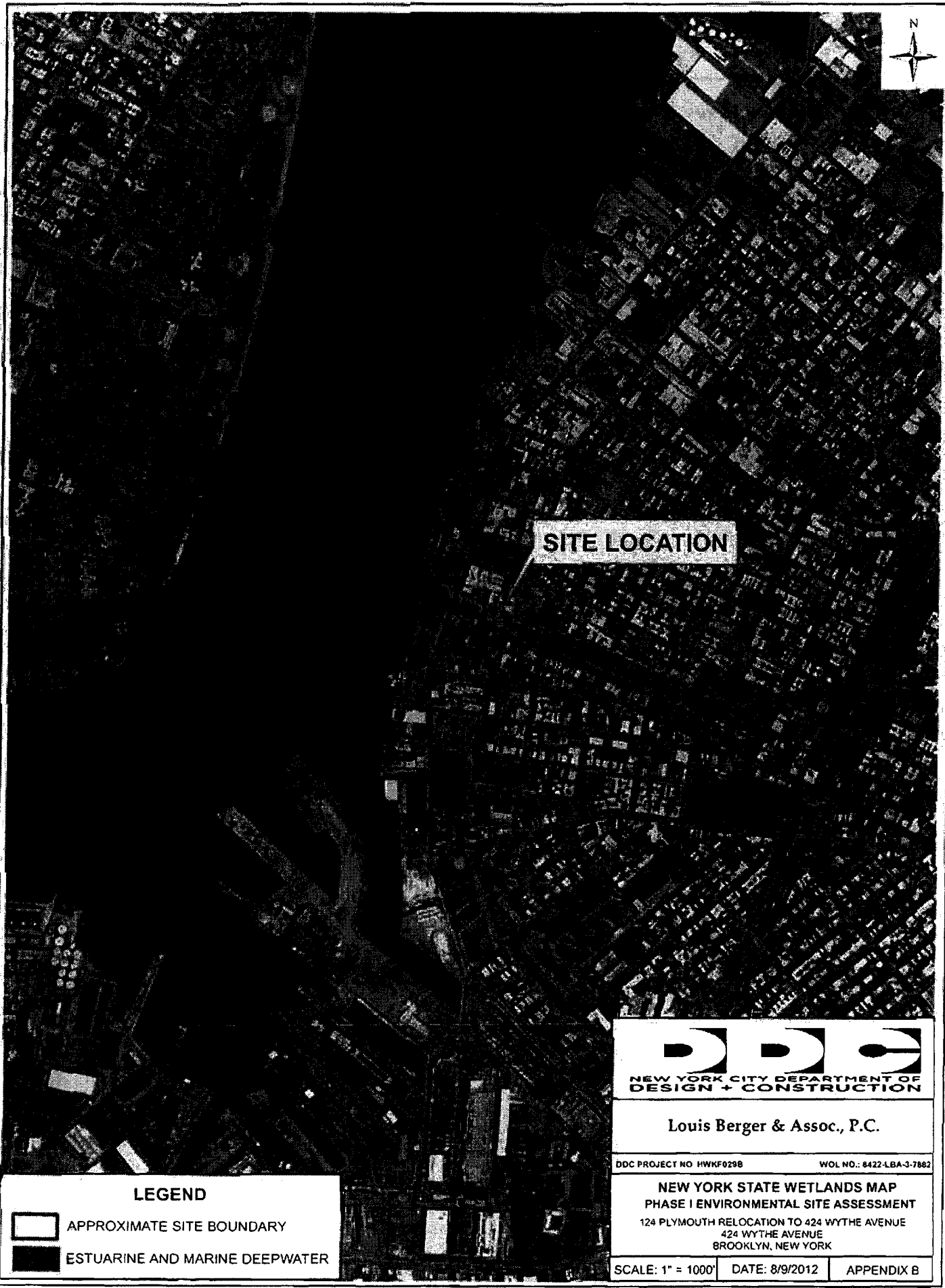
DDC PROJECT NO HWKF0298 WOL NO.: 8422-LBA-3-7882

NEW YORK STATE WETLANDS MAP
PHASE I ENVIRONMENTAL SITE ASSESSMENT
124 PLYMOUTH RELOCATION TO 424 WYTHE AVENUE
424 WYTHE AVENUE
BROOKLYN, NEW YORK

SCALE: 1" = 1000' DATE: 8/9/2012 APPENDIX B

LEGEND

-  APPROXIMATE SITE BOUNDARY
-  ESTUARINE AND MARINE DEEPWATER





APPENDIX C
ENVIRONMENTAL LIENSEARCH REPORT

424 Wythe Avenue
424 Wythe Avenue
Brooklyn, NY

Inquiry Number: 3355824.7
July 06, 2012

The EDR Environmental LienSearch™ Report



440 Wheelers Farm Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Environmental LienSearch™ Report

The EDR Environmental LienSearch Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EDR Environmental LienSearch™ Report

TARGET PROPERTY INFORMATION

ADDRESS

424 Wythe Avenue
424 Wythe Avenue
Brooklyn, NY

RESEARCH SOURCE

Source 1: Kings City Register
Source 2: Kings County Clerk
Source 3: Kings Department of Finance

DEED INFORMATION

Deed 1:

Type of Deed: Deed
Grantor: John Drescher
Grantee: City of New York
Deed Recorded: 09/22/1897
Instrument: Book 7, Page 541

Deed 2:

Type of Deed: Deed
Grantor: John Drescher
Grantee: City of New York
Deed Recorded: 09/22/1897
Instrument: Book 7, Page 540

Deed 3:

Type of Deed: Deed
Grantor: Mary A. Hayes
Grantee: City of New York
Deed Recorded: 10/06/1897
Instrument: Book 8, Page 28

Deed 4:

Type of Deed: Deed
Grantor: Mary A. Hayes
Grantee: City of New York
Deed Recorded: 10/06/1897
Instrument: Book 8, Page 26

EDR Environmental LienSearch™ Report

Deed 5:

Type of Deed: Deed
Grantor: Mary J. Conldin
Grantee: City of New York
Deed Recorded: 07/19/1900
Instrument: Book 13, Page 403

LEGAL DESCRIPTION

Lot 1, Block 2454, also commonly known as 424 Wythe Avenue, situated and lying in the City of Brooklyn, Kings County, State of New York

Property Identifier: Block 2454 Lot 1

ENVIRONMENTAL LIEN

Found: Not Found:

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

Found: Not Found:

EDR Environmental LienSearch™ Report

Property Profile - Exhibit



[CLICK HERE TO SIGN UP FOR BUILDINGS NEWS](#)

NYC Department of Buildings
Property Profile Overview

424 WYTHE AVENUE
 SOUTH 6 STREET
 WYTHE AVENUE

45 - 55
 424 - 424

BROOKLYN 11249

Census Tract : 549
 Community Board : 301
Buildings on Lot : 2

BIN# 3335964
 Tax Block : 2454
 Tax Lot : 1
 Condo : NO
 Vacant : NO

[View DCP Addresses...](#) [Browse Block](#)

[View Zoning Documents](#)

[View Challenge Results](#)

[View Certificates of Occupancy](#)

Cross Street(s): WILLIAMSBURG BR PEDESTRIAN PATH, SOUTH 6 STREET
 DOB Special Place Name:
 DOB Building Remarks:
 Landmark Status: Special Status: N/A
 Local Law: NO Loft Law: NO
 SRO Restricted: NO TA Restricted: NO
 UB Restricted: NO
 Little 'E' Restricted: N/A Grandfathered Sign: NO
 Legal Adult Use: NO City Owned: YES
 Additional BINs for Building: NONE

Special District: UNKNOWN

This property is not located in an area that may be affected by Tidal Wetlands, Freshwater Wetlands, or Coastal Erosion Hazard Area. [Click here for more information](#)

Department of Finance Building Classification: Y6-GOVERNMENT INSTAL

Please Note: The Department of Finance's building classification information shows a building's tax status, which may not be the same as the legal use of the structure. To determine the legal use of a structure, research the records of the Department of Buildings.

	Total	Open
Complaints	0	0
<u>Violations-DOB</u>	1	0
Violations-ECB (DOB)	0	0
<u>Jobs/Filings</u>	3	
<u>ARA / LAA Jobs</u>	1	
Total Jobs	4	
Total Actions	0	

- [Elevator Records](#)
- [Electrical Applications](#)
- [Permits In-Process / Issued](#)
- [Illuminated Signs Annual Permits](#)
- [Plumbing Inspections](#)
- [Open Plumbing Jobs / Work Types](#)
- [Facades](#)
- [Marquee Annual Permits](#)
- [Boiler Records](#)
- [DEP Boiler Information](#)
- [Crane Information](#)
- [After Hours Variance Permits](#)

OR Enter Action Type:

OR Select from List:

Select...

AND

If you have any questions please review these [Frequently Asked Questions](#), the [Glossary](#), or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.



[CLICK HERE TO SIGN UP FOR BUILDINGS NEWS](#)

NYC Department of Buildings
ECB Query By Location
NO ECB RECORDS FOUND

Premises: 424 WYTHE AVENUE BROOKLYN

BIN: 3339964 Block: 2454 Lot: 1 CB: 301

Page:

ECB Number	Dept. of Buildings Violation Status	Respondent	ECB Hearing Status	Viol Date	Infraction Codes	ECB Penalty Due
------------	-------------------------------------	------------	--------------------	-----------	------------------	-----------------

Compliance Status (Open/Resolved) relates to whether a violation has been corrected/uncorrected. Dismissed violations do not require filing a Certificate of Correction.

ECB Hearing Status and the ECB Penalty Due are separate from Compliance Status (i.e. a penalty is still due in many cases even when the violating condition has been fixed).

Severity Class	
Class 1 - Immediately Hazardous	HAZ - Hazardous - 1968 Building Code
Class 2 - Major	NON-HAZ - Non-hazardous - 1968 Building Code
Class 3 - Lesser	

Violation Status Descriptions	ECB Hearing Status
OPEN - No Compliance Recorded	CURED//IN-VIO - In Violation/no hearing required
OPEN - Certificate Pending (Certificate of Correction submitted and under review)	STIPULATION//IN-VIO - No hearing required/in violation
OPEN - Certificate Disapproved (Certificate of Correction disapproved/not in compliance)	IN VIOLATION - Hearing decision completed
RESOLVED - N/A-Dismissed (at ECB - no Certificate of Correction required)	DISMISSED - Hearing decision completed
RESOLVED - Certificate Accepted (Certification of Correction Accepted/in compliance)	DEFAULT - Respondent failed to appear at hearing
RESOLVED - Cure Accepted (early correction accepted - in violation/no penalty or hearing)	PUBLICLY-OWNED - No hearing required
RESOLVED - Compliance Insp/Doc (condition verified by Inspector or by Dept. documentation)	PENDING - Awaiting ECB hearing or decision
	ADMIT//IN-VIO - In Violation/no hearing required
	WRITTEN OFF - Imposed penalty legally uncollectable

If you have any questions please review these [Frequently Asked Questions](#), the [Glossary](#), or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

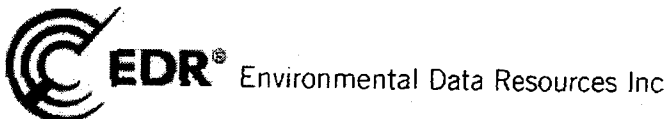


APPENDIX D
HISTORICAL TOPOGRAPHIC MAPS

424 Wythe Avenue
424 Wythe Avenue
Brooklyn, NY 11211

Inquiry Number: 3355824.4
June 29, 2012

EDR Historical Topographic Map Report



440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

EDR Historical Topographic Map Report

Environmental Data Resources, Inc.'s (EDR) Historical Topographic Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDR's Historical Topographic Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the early 1900s.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

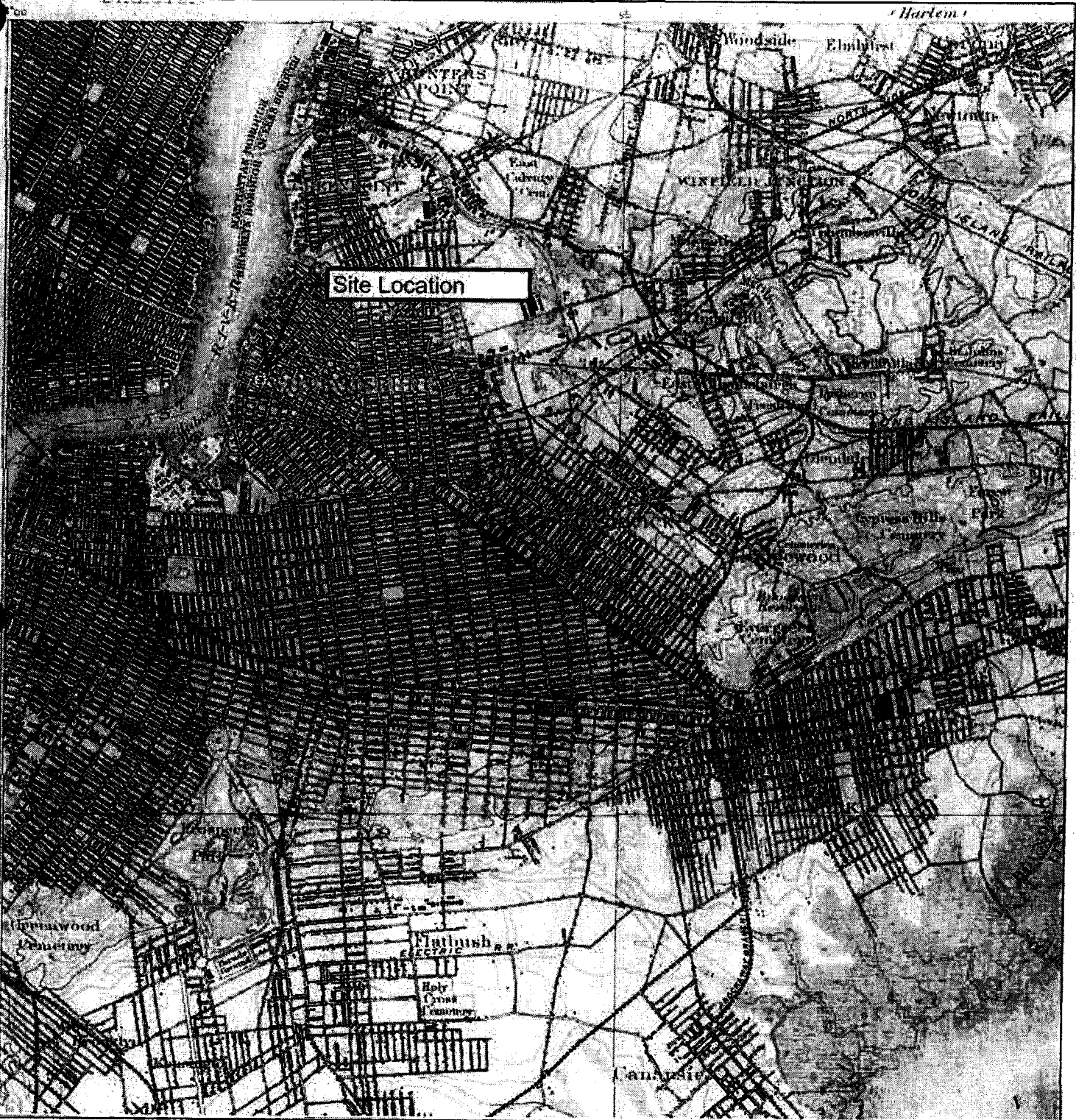
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Historical Topographic Map



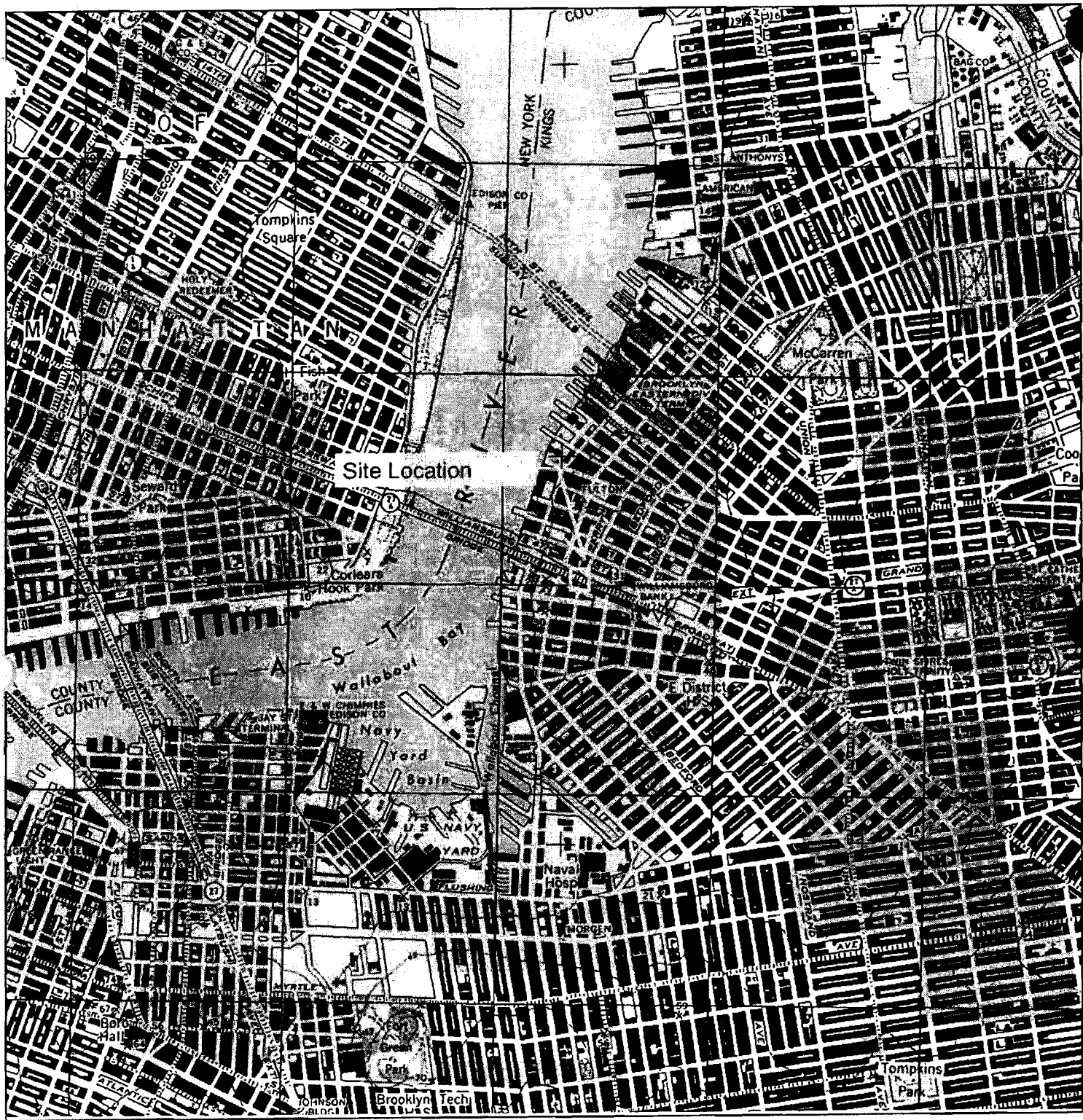
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NAME: BROOKLYN
MAP YEAR: 1900


SERIES: 15
SCALE: 1:62500

SITE NAME: 424 Wythe Avenue
ADDRESS: 424 Wythe Avenue
Brooklyn, NY 11211
LAT/LONG: 40.712 / -73.9671

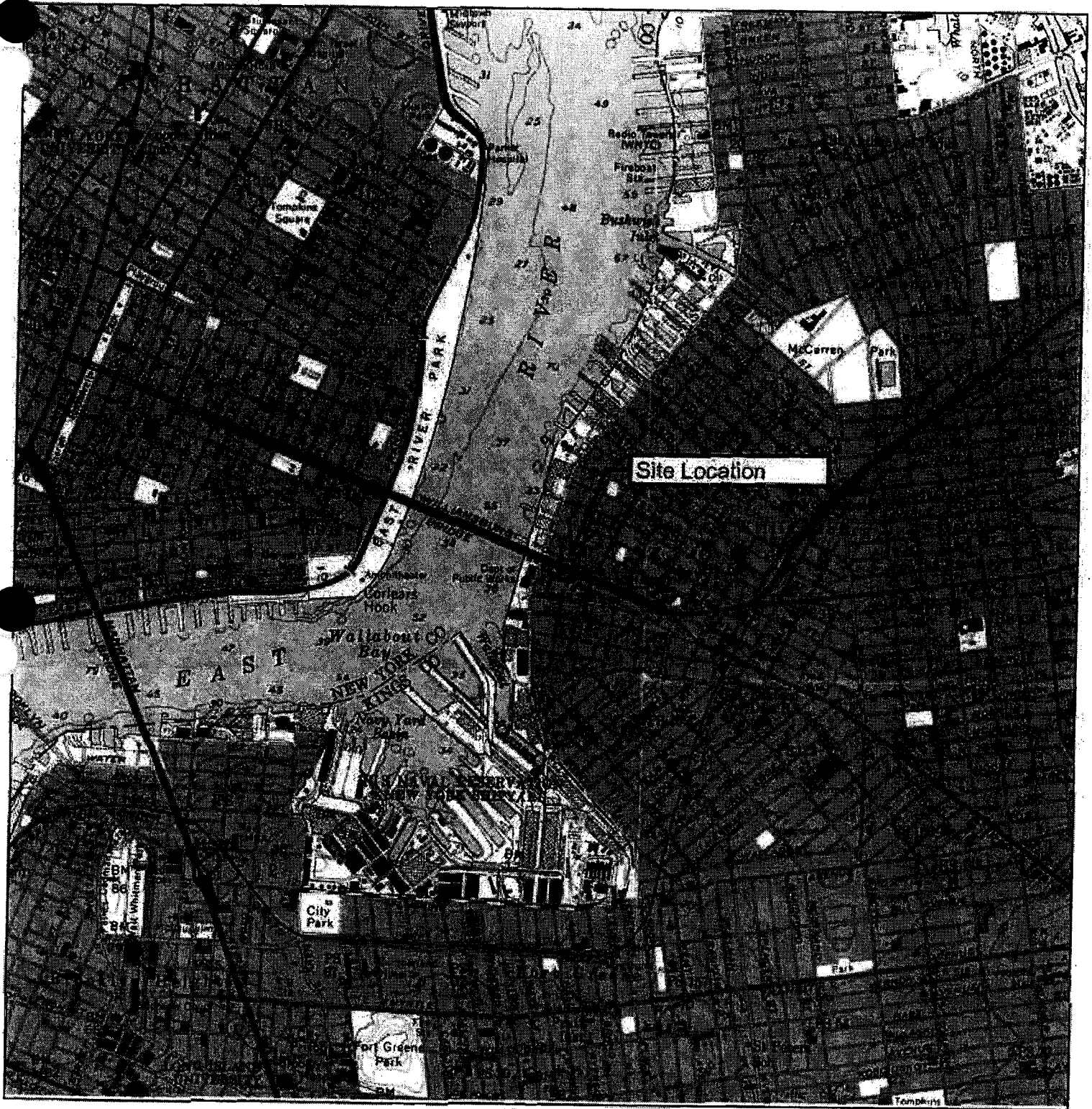
CLIENT: Louis Berger & Associates
CONTACT: Fameeda Ali
INQUIRY#: 3355824.4
RESEARCH DATE: 06/29/2012

Historical Topographic Map



	TARGET QUAD NAME: BROOKLYN MAP YEAR: 1947	SITE NAME: 424 Wythe Avenue ADDRESS: 424 Wythe Avenue Brooklyn, NY 11211 LAT/LONG: 40.712 / -73.9671	CLIENT: Louis Berger & Associates CONTACT: Fameeda Ali INQUIRY#: 3355824.4 RESEARCH DATE: 06/29/2012
	SERIES: 7.5 SCALE: 1:25000		

Historical Topographic Map



TARGET QUAD
NAME: BROOKLYN
MAP YEAR: 1956

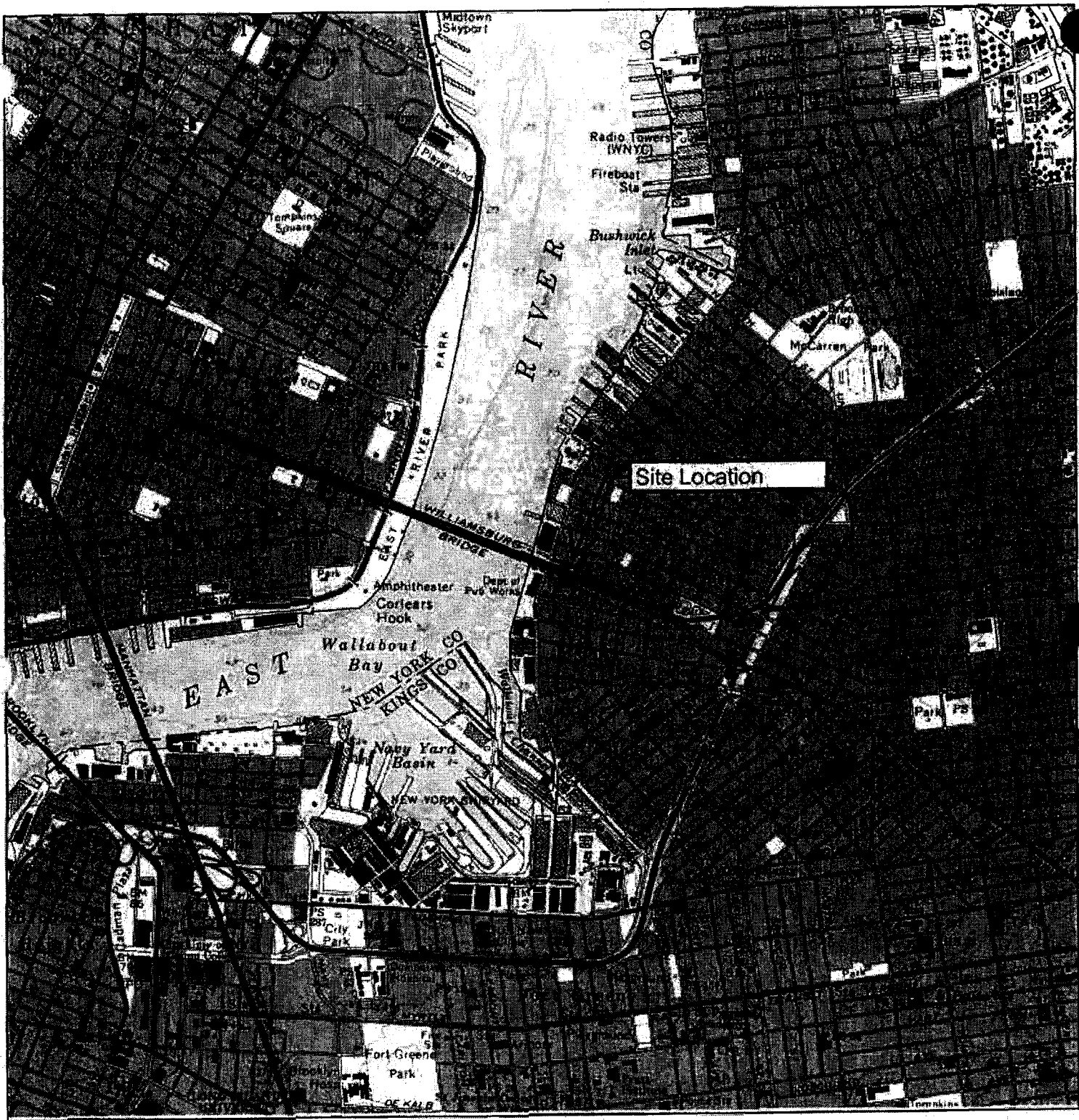
SERIES: 7.5
SCALE: 1:24000

SITE NAME: 424 Wythe Avenue
ADDRESS: 424 Wythe Avenue
Brooklyn, NY 11211

LAT/LONG: 40.712 / -73.9671

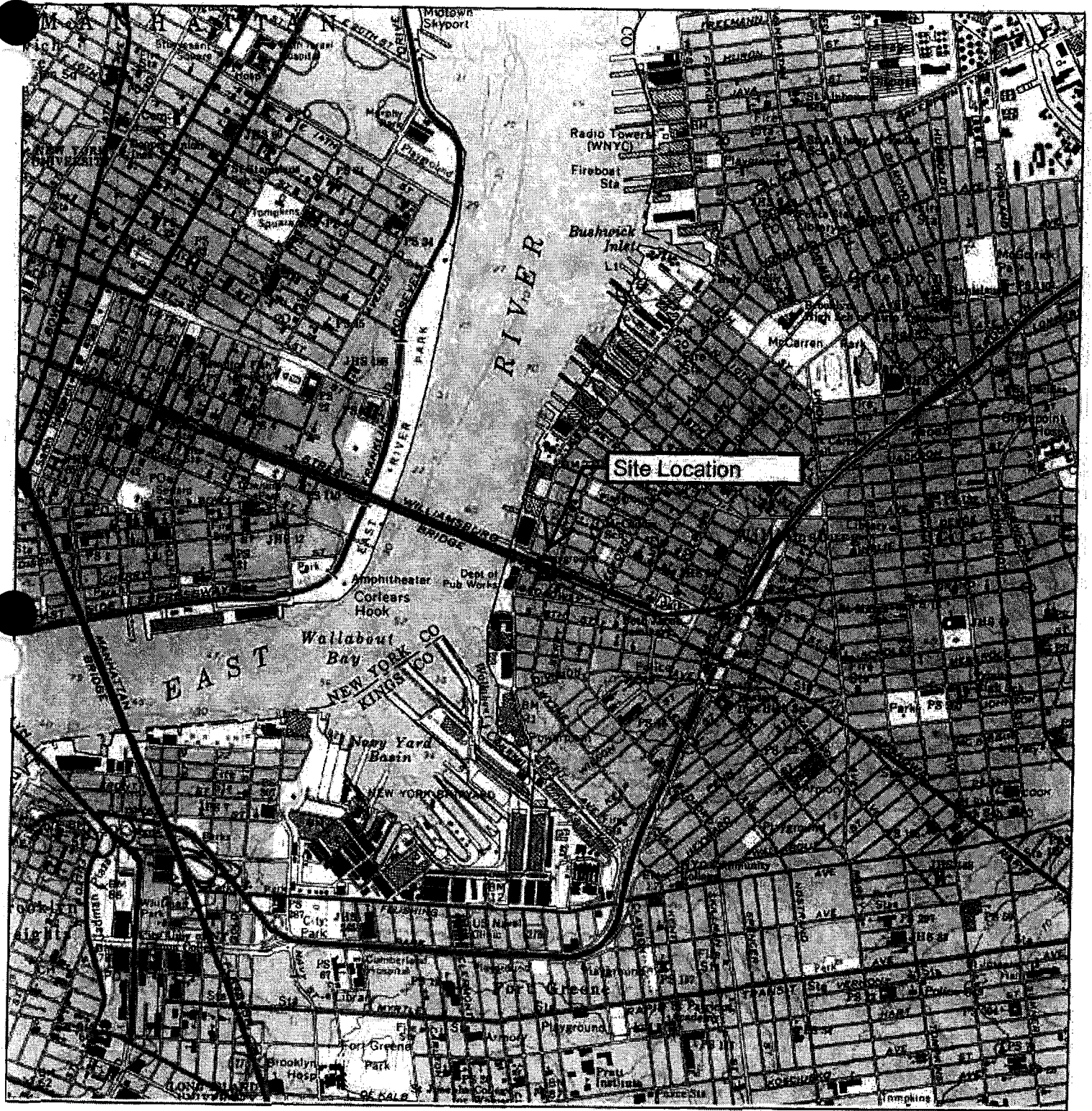
CLIENT: Louis Berger & Associates
CONTACT: Fameeda Ali
INQUIRY#: 3355824.4
RESEARCH DATE: 06/29/2012

Historical Topographic Map



<p>N ↑</p>	<p>TARGET QUAD NAME: BROOKLYN MAP YEAR: 1967</p>	<p>SITE NAME: 424 Wythe Avenue ADDRESS: 424 Wythe Avenue Brooklyn, NY 11211 LAT/LONG: 40.712 / -73.9671</p>	<p>CLIENT: Louis Berger & Associates CONTACT: Fameeda Ali INQUIRY#: 3355824.4 RESEARCH DATE: 06/29/2012</p>
	<p>SERIES: 7.5 SCALE: 1:24000</p>		

Historical Topographic Map



TARGET QUAD
NAME: BROOKLYN
MAP YEAR: 1979
PHOTOREVISED FROM :1967
SERIES: 7.5
SCALE: 1:24000

SITE NAME: 424 Wythe Avenue
ADDRESS: 424 Wythe Avenue
Brooklyn, NY 11211
LAT/LONG: 40.712 / -73.9671

CLIENT: Louis Berger & Associates
CONTACT: Fameeda Ali
INQUIRY#: 3355824.4
RESEARCH DATE: 06/29/2012

Historical Topographic Map



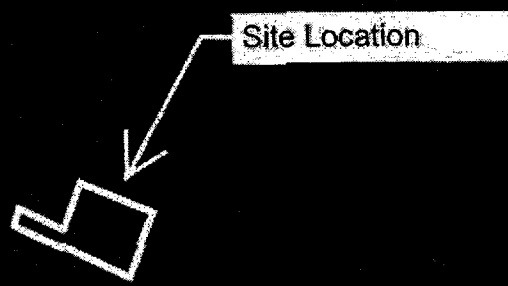
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	<p>SERIES: 7.5 SCALE: 1:24000</p>		



New York City Department of Design and Construction
Final Phase I Environmental Site Assessment Report

121 Plymouth Relocation to 424 Wythe Avenue - 424 Wythe Avenue, Brooklyn, NY

APPENDIX E HISTORICAL AERIAL PHOTOGRAPHS



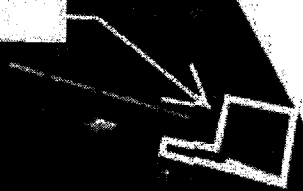
INQUIRY #: 3355824.5

YEAR: 1924

— = 500'



Site Location

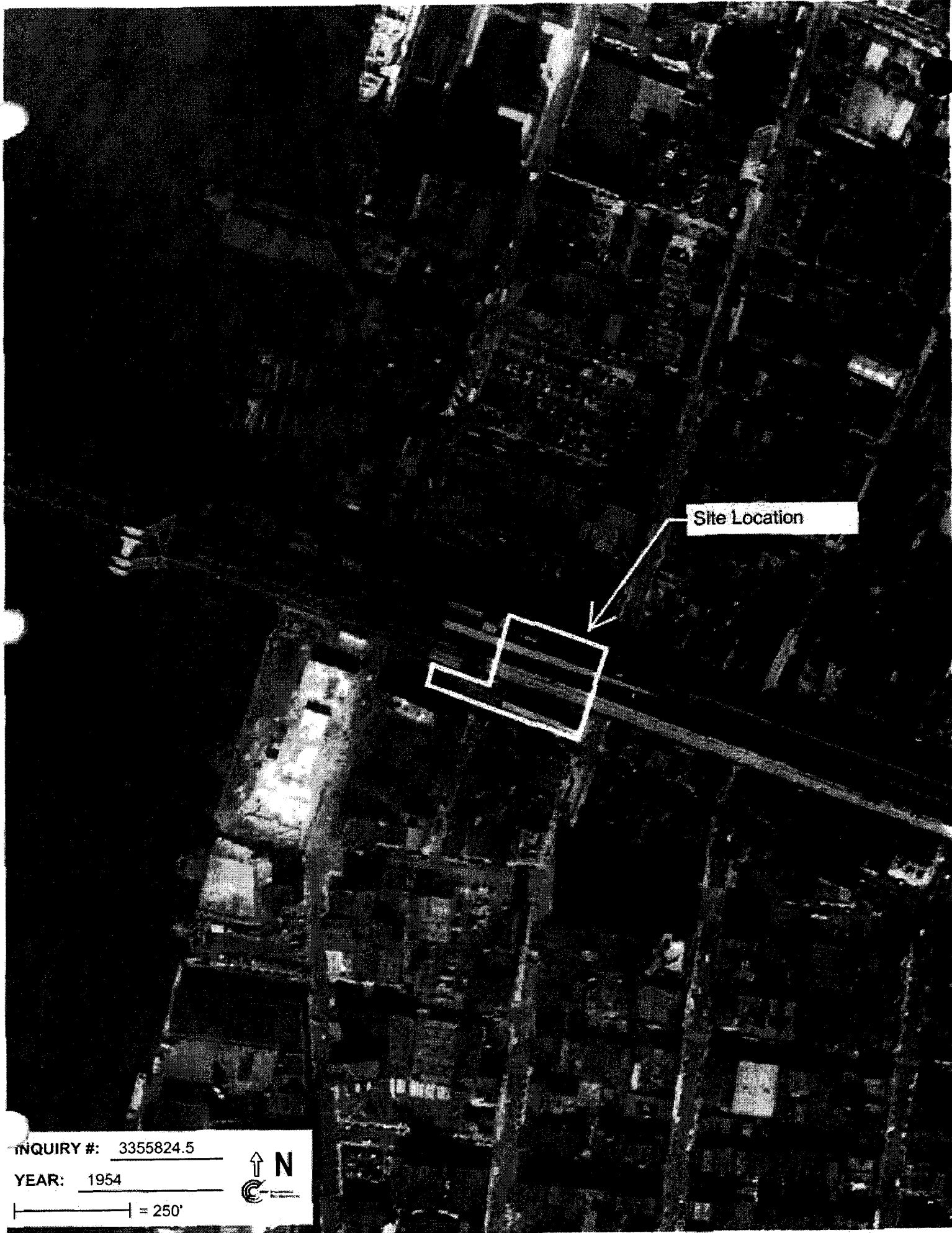


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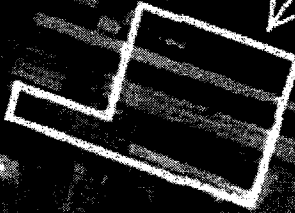
YEAR: 1943

| = 500'





Site Location



INQUIRY #: 3355824.5

YEAR: 1954

| = 250'





Site Location

INQUIRY #: 3355824.5

YEAR: 1966

— = 500'



4-1-7

Site Location

INQUIRY #: 3355824.5

YEAR: 1975

— = 500'



INQUIRY #: 3355824.5

YEAR: 1984



| = 500'




Site Location



Site Location

INQUIRY #: 3355824.5

YEAR: 1994

 = 750'





Site Location

INQUIRY #: 3355824.5
YEAR: 1994, 1995 (DOQQ)
| = 500'





Site Location

INQUIRY #: 3355824.5

YEAR: 2006



| = 500'



APPENDIX F
SANBORN FIRE INSURANCE MAPS

2007 Certified Sanborn Map

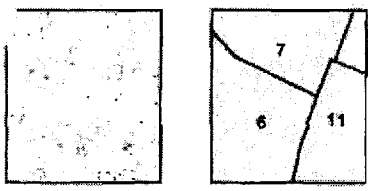
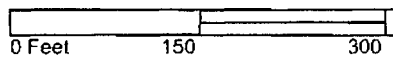
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Certification # 0A84-4346-95A8

Site Name 424 Wythe Avenue
 Address 424 Wythe Avenue
 City ST ZIP Brooklyn NY 11211
 Client Louis Bergot & Associates
 EDR Inquiry# 3756824 3
 Order Date 7/2/2012 10:13:03 AM
 Certification # 0A84-4346-95A8



This Certified Sanborn Map combines the following sheets. Outlined areas indicate map sheets within the collection.



Volume 3, Sheet 6
 Volume 3, Sheet 7
 Volume 3, Sheet 11



2006 Certified Sanborn Map

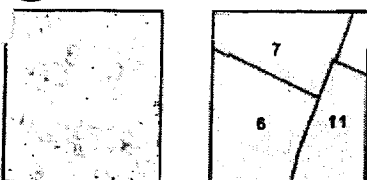
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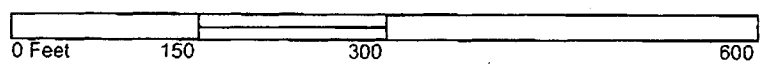
Site Name: 424 Wythe Avenue
 Address: 424 Wythe Avenue
 City, ST, ZIP: Brooklyn, NY 11211
 Client: Louis Berger & Associates
 EDR Inquiry #: 1316464-1
 Order Date: 7/2/2013 10:13:03 AM
 Certification #: 0A84-4346-95A8
 Copyright: 2006



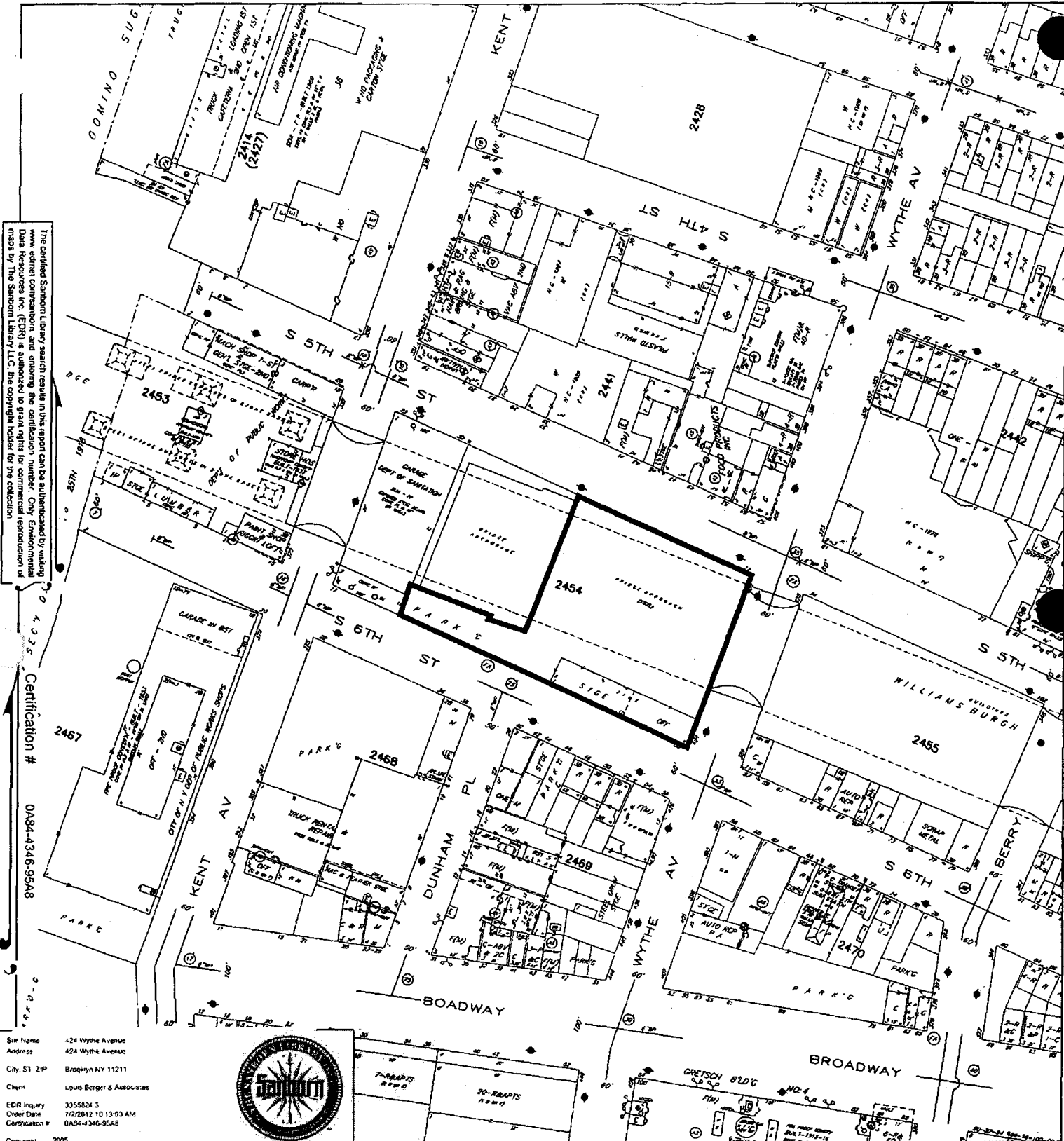
Certified Sanborn Map combines the following sheets. Shaded areas indicate map sheets within the collection.



- Volume 3, Sheet 6
- Volume 3, Sheet 7
- Volume 3, Sheet 11



2005 Certified Sanborn Map



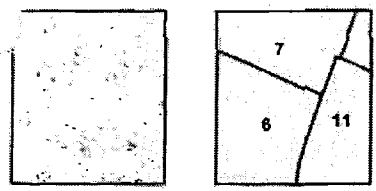
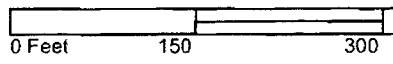
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Certification # 0A84-4346-95A8

Site Name: 424 Wythe Avenue
 Address: 424 Wythe Avenue
 City, ST ZIP: Brooklyn NY 11211
 Chem: Louis Berger & Associates
 EDR Inquiry: 3355824 5
 Order Date: 7/2/2012 10:13:03 AM
 Certification #: 0A84-4346-95A8



This Certified Sanborn Map combines the following sheets. Outlined areas indicate map sheets within the collection.



Volume 3, Sheet 6
 Volume 3, Sheet 7
 Volume 3, Sheet 11



2004 Certified Sanborn Map

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Sanborn Certification # 0A84-4346-95A8

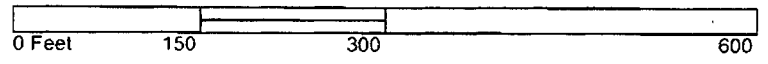
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 Address 424 Wythe Aven site
 City ST ZIP Brooklyn NY 11211
 Client Louis Berger & Associates
 EDR Inquiry 3355824-3
 Order Date 7/2/2012 10:13:03 AM
 Certification # 0A84-4346-95A8



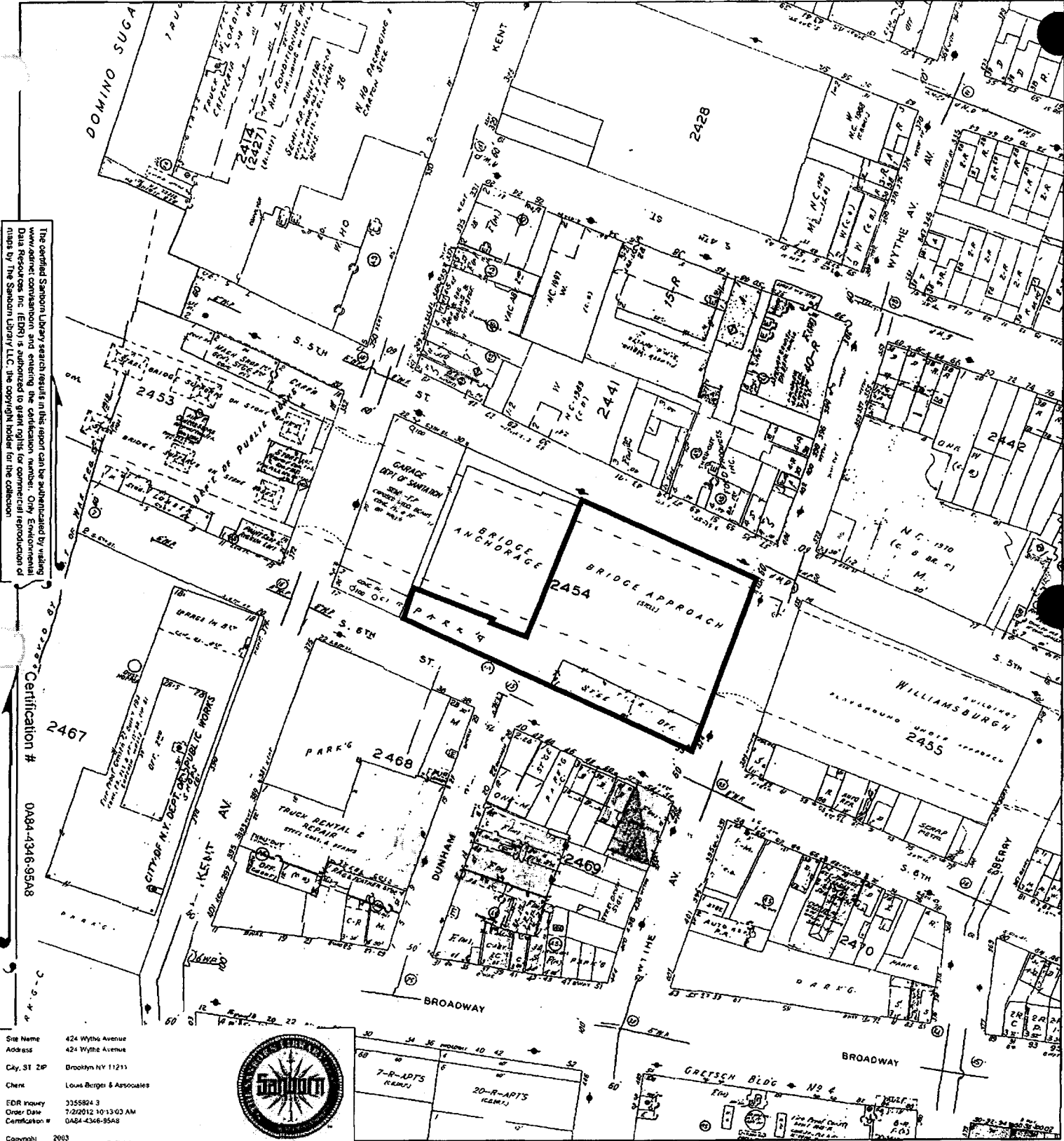
This Certified Sanborn Map combines the following sheets. Shaded areas indicate map sheets within the collection.



- Volume 3, Sheet 6
- Volume 3, Sheet 7
- Volume 3, Sheet 11



2003 Certified Sanborn Map



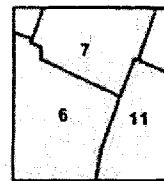
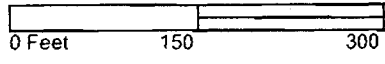
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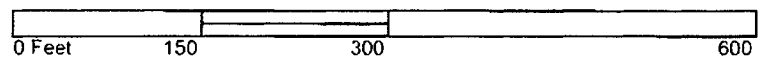


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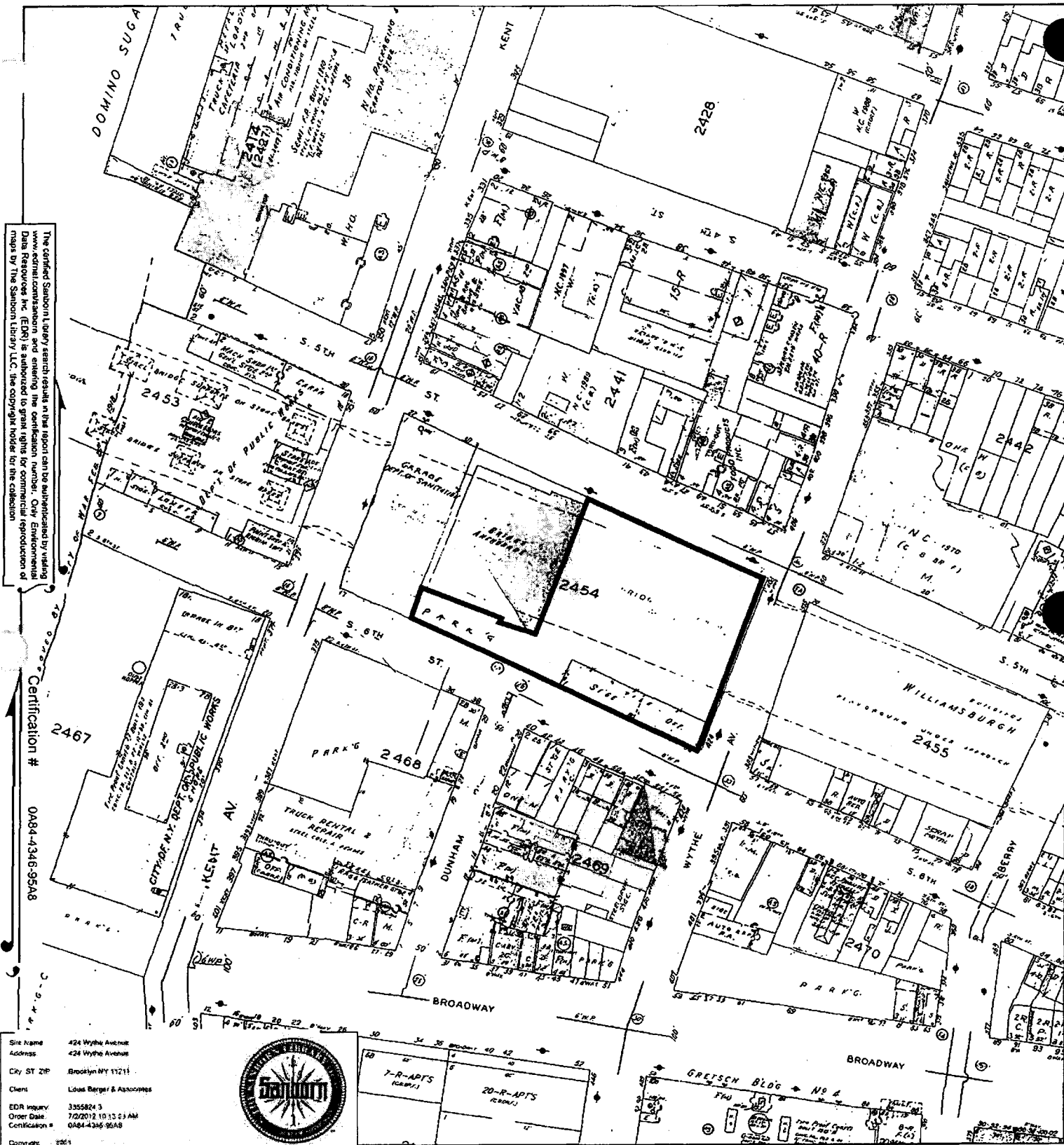
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2001 Certified Sanborn Map



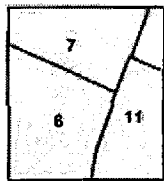
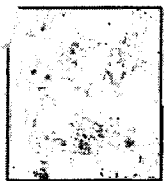
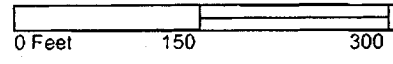
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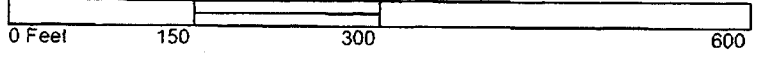
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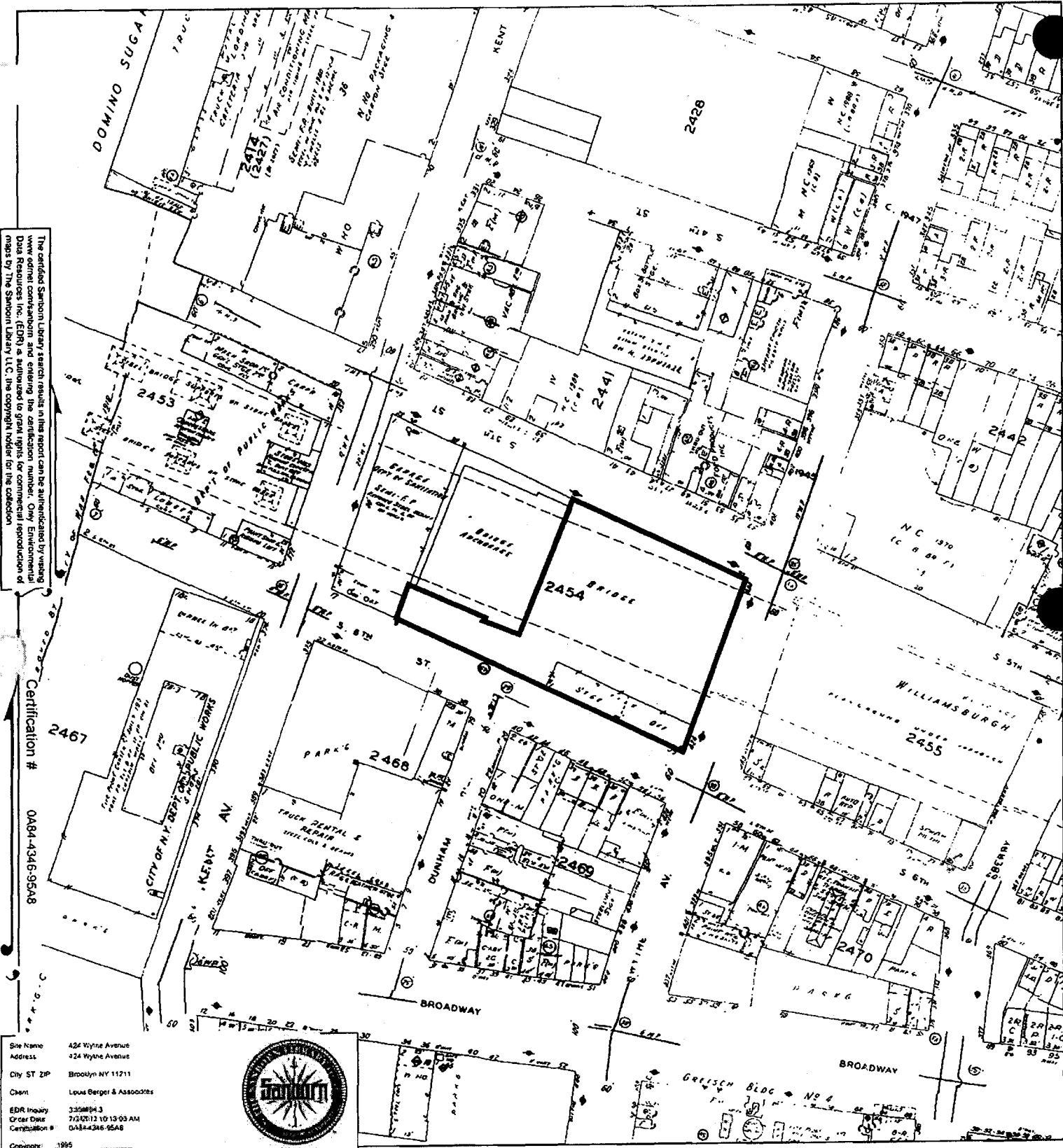
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1995 Certified Sanborn Map



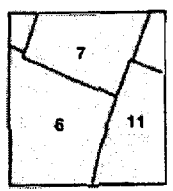
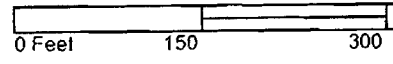
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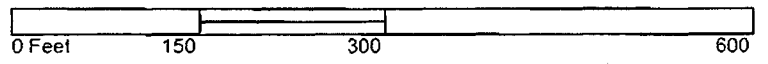
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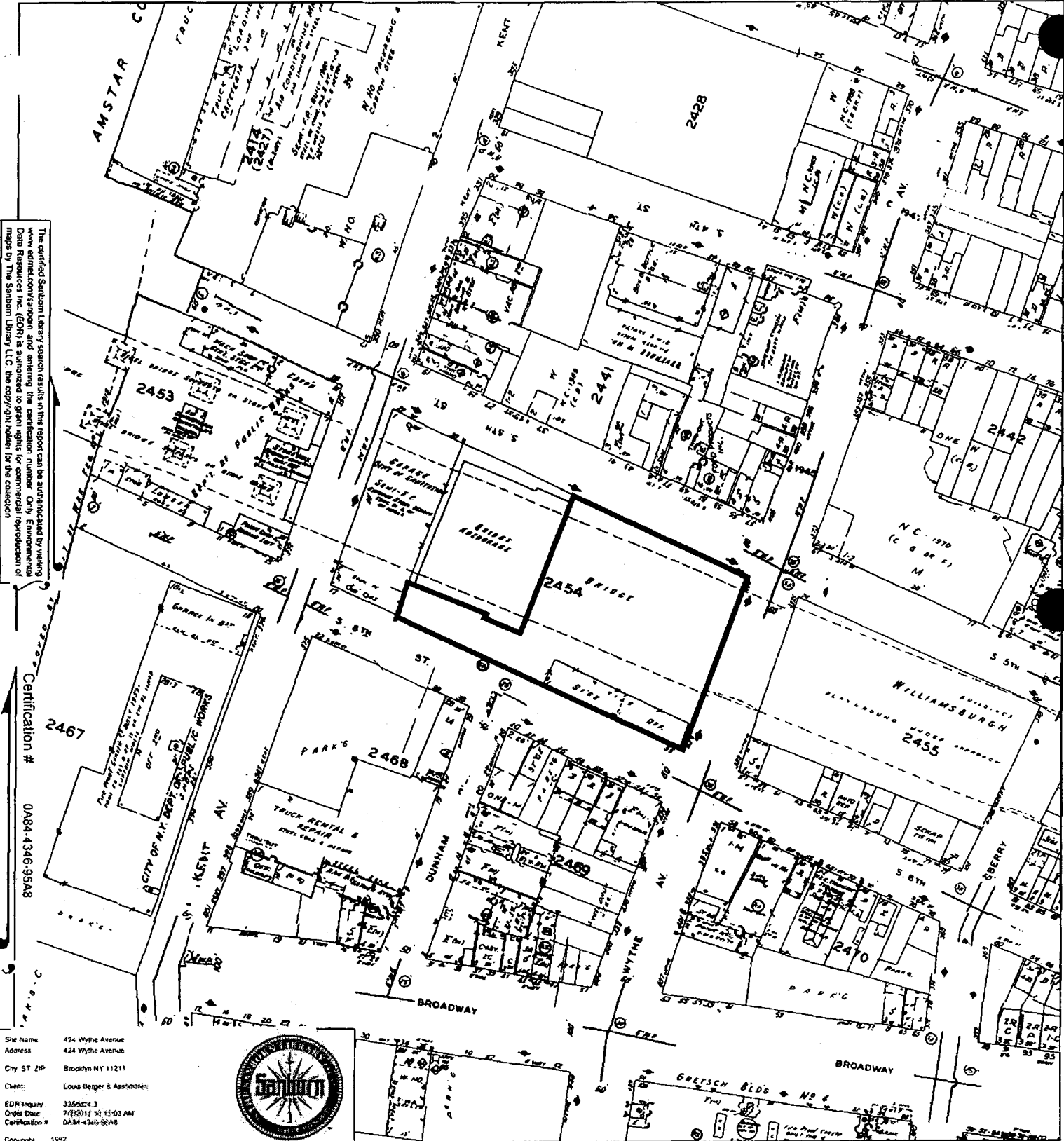
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1992 Certified Sanborn Map



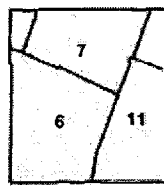
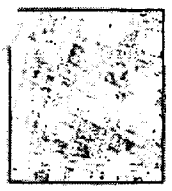
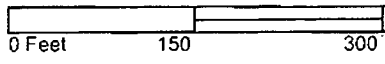
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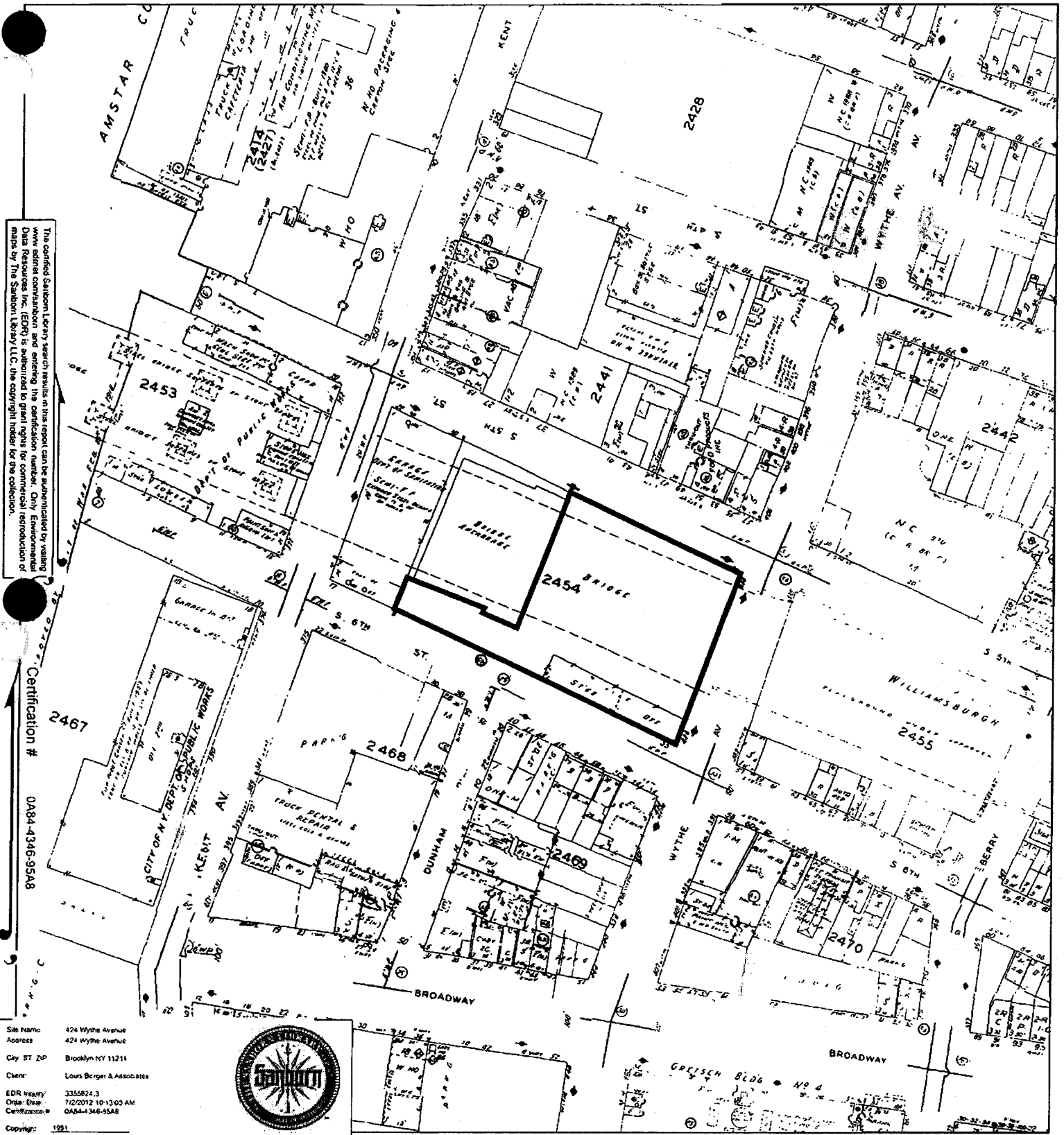
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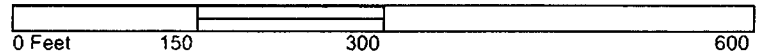
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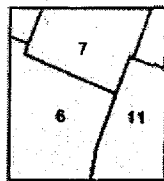
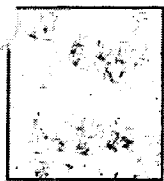
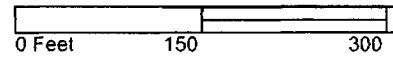
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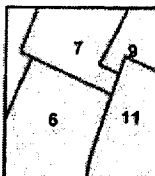
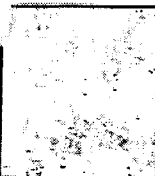
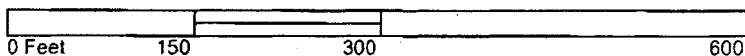
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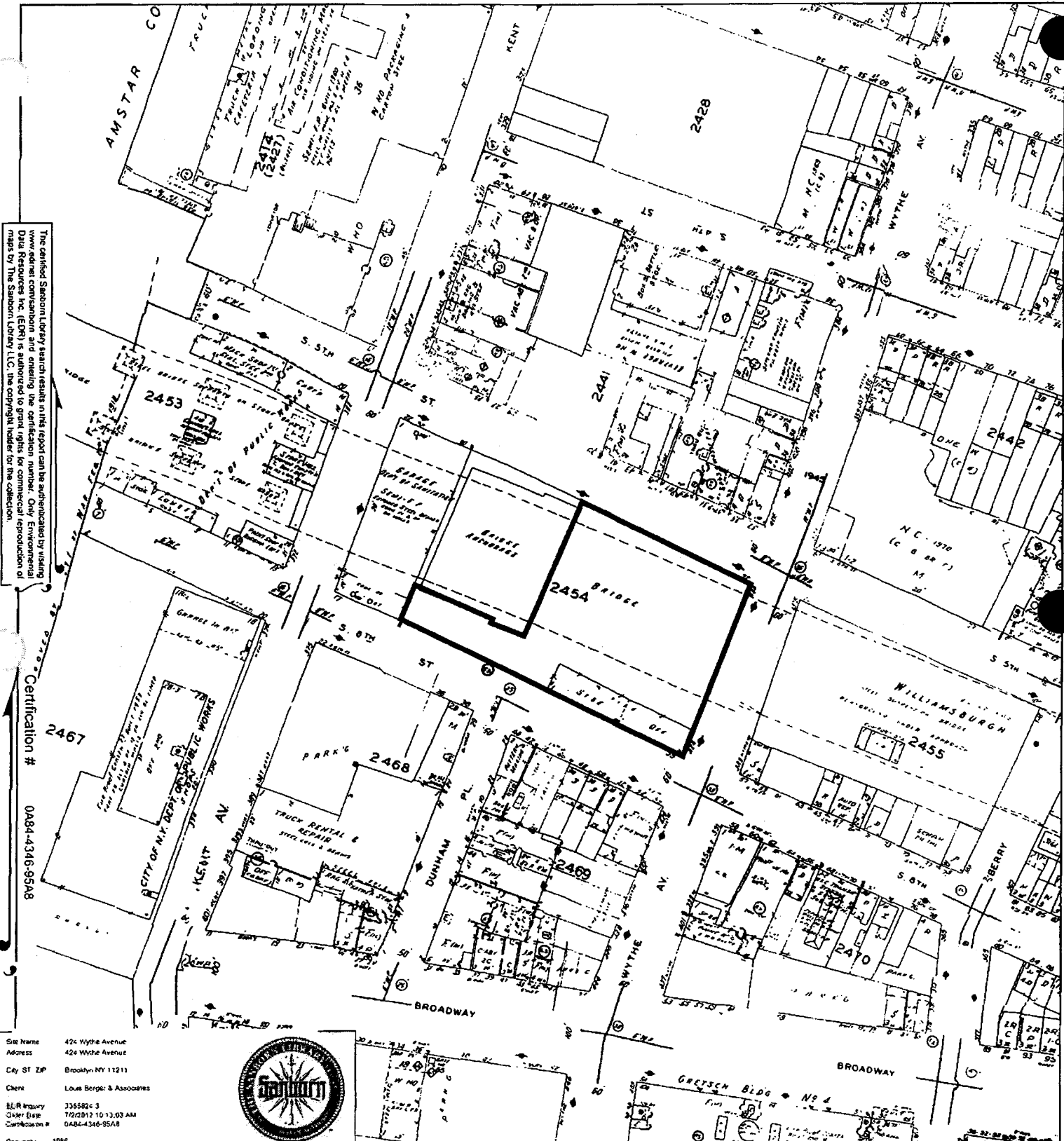


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1986 Certified Sanborn Map



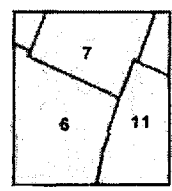
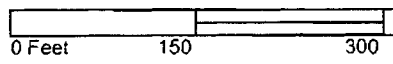
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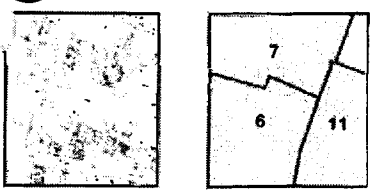
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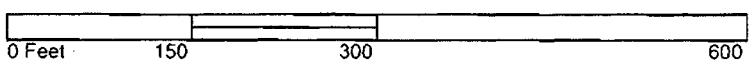
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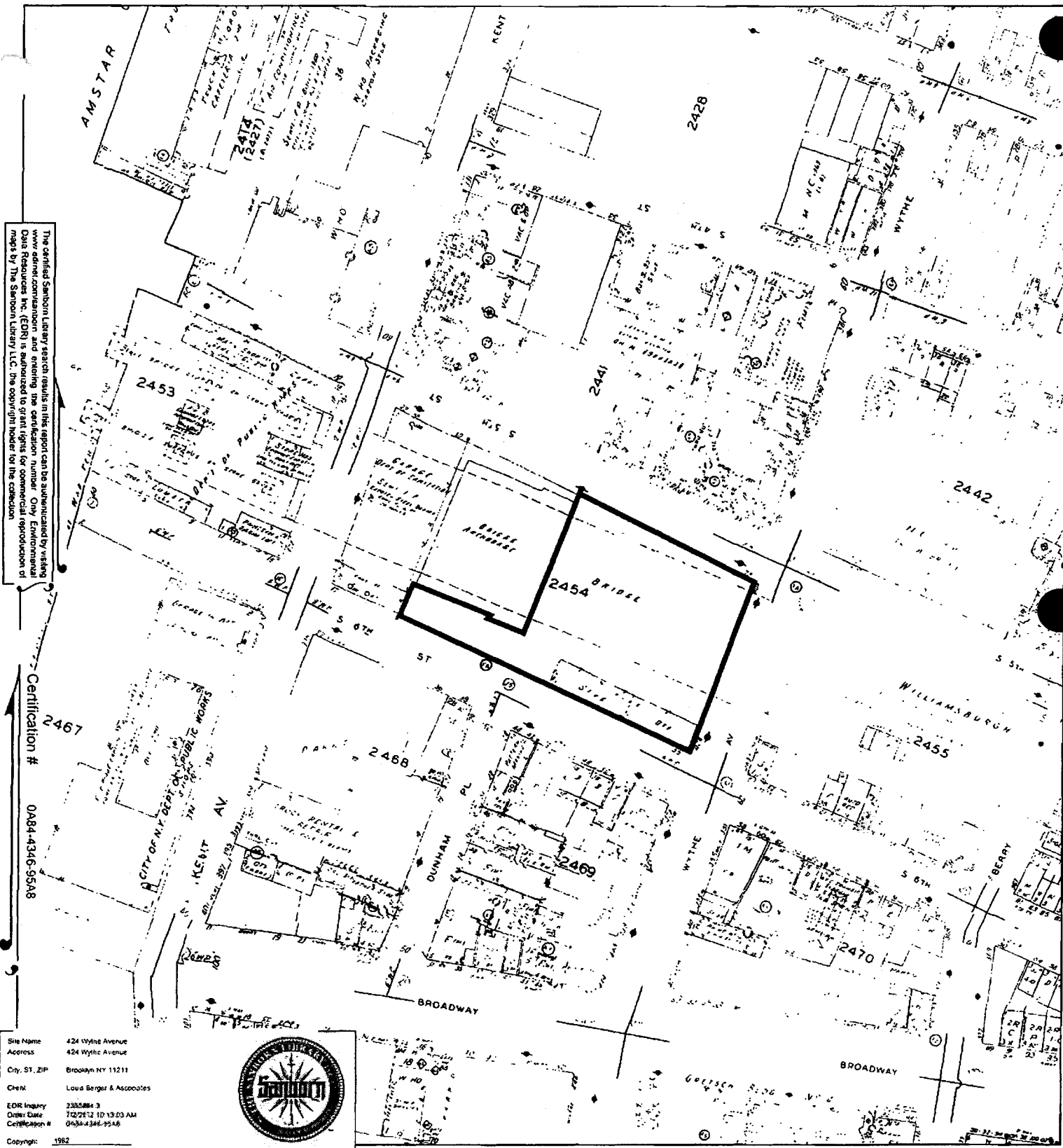
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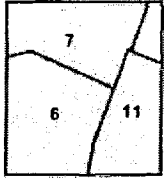
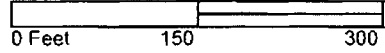
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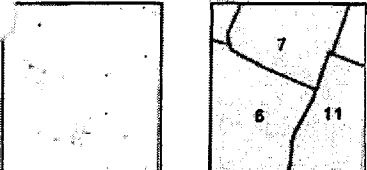
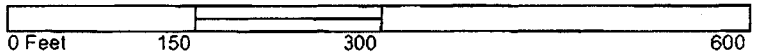
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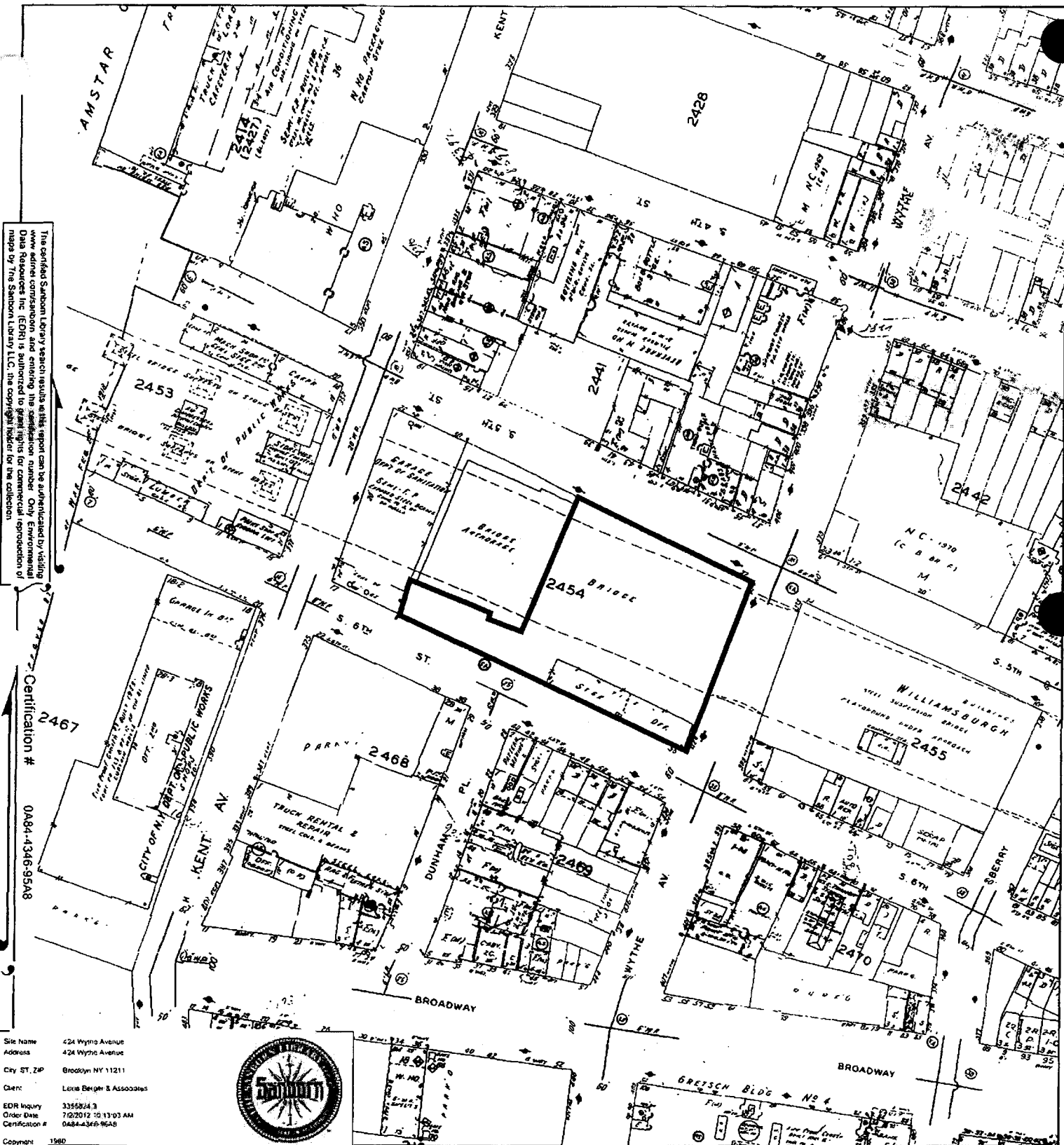


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1980 Certified Sanborn Map



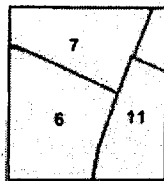
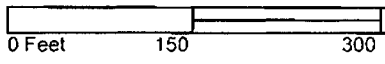
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1979 Certified Sanborn Map

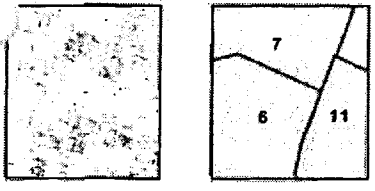
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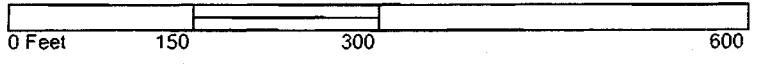
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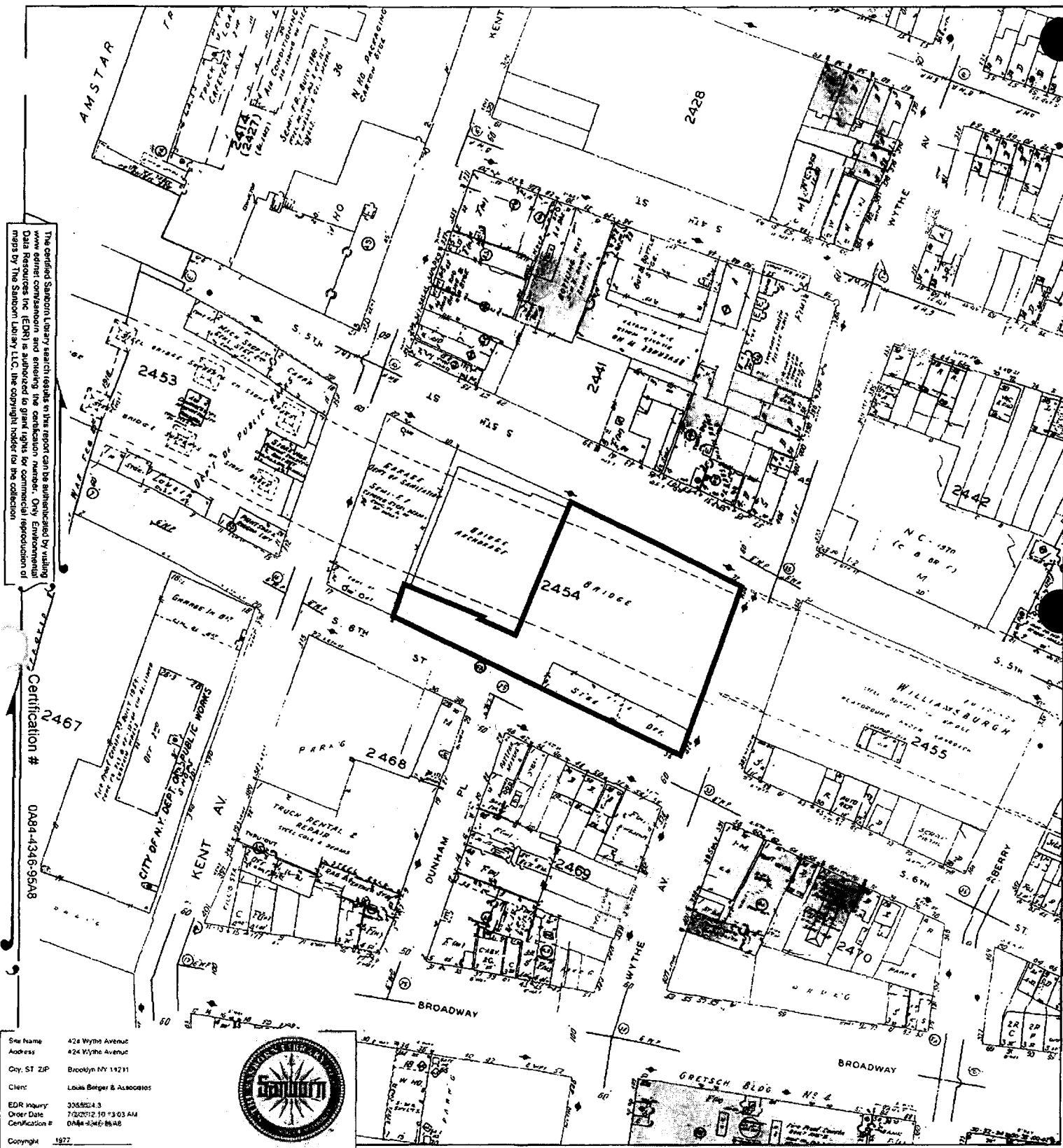
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1977 Certified Sanborn Map



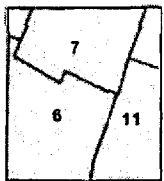
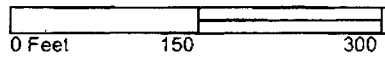
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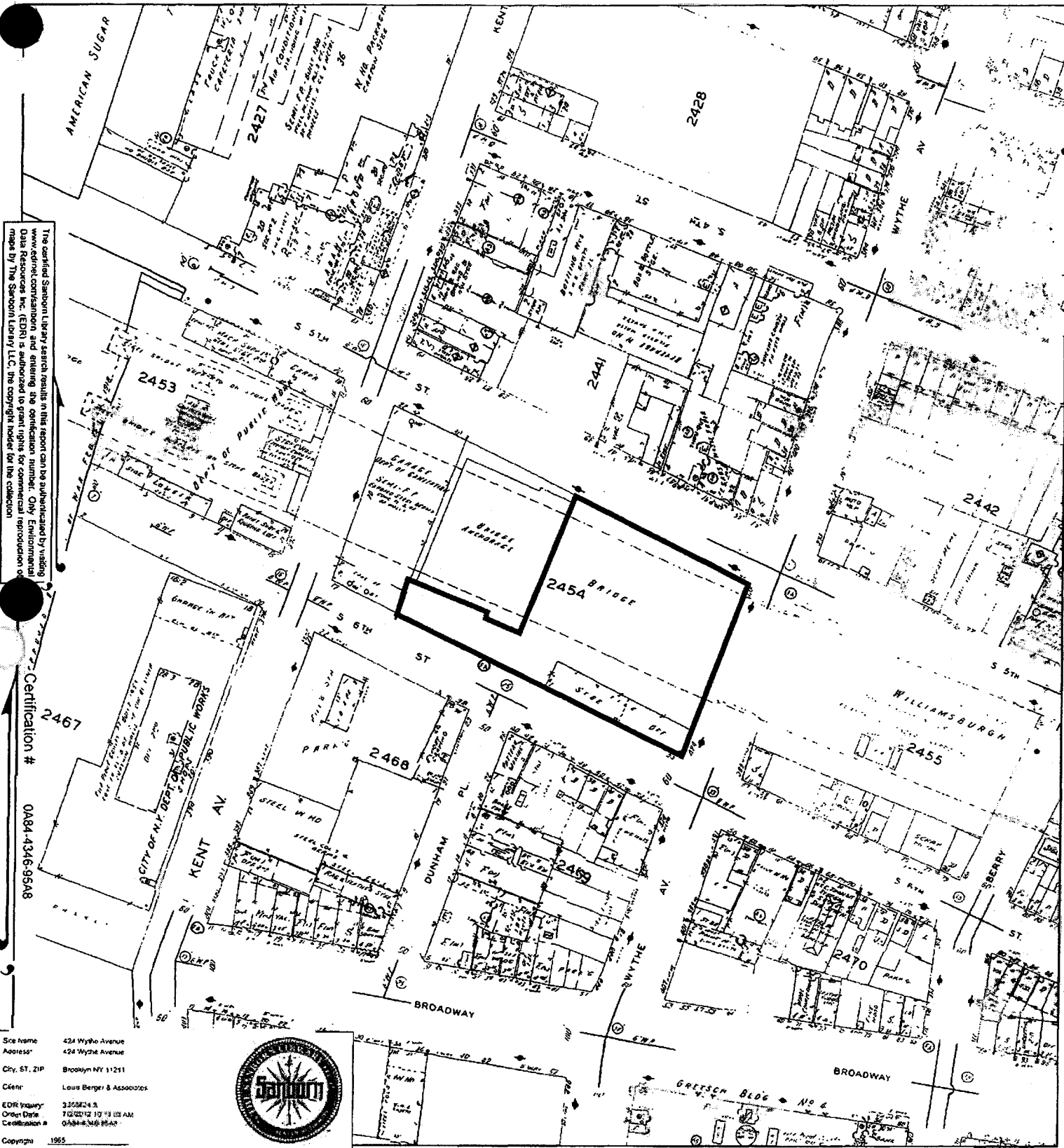
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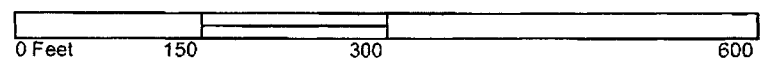
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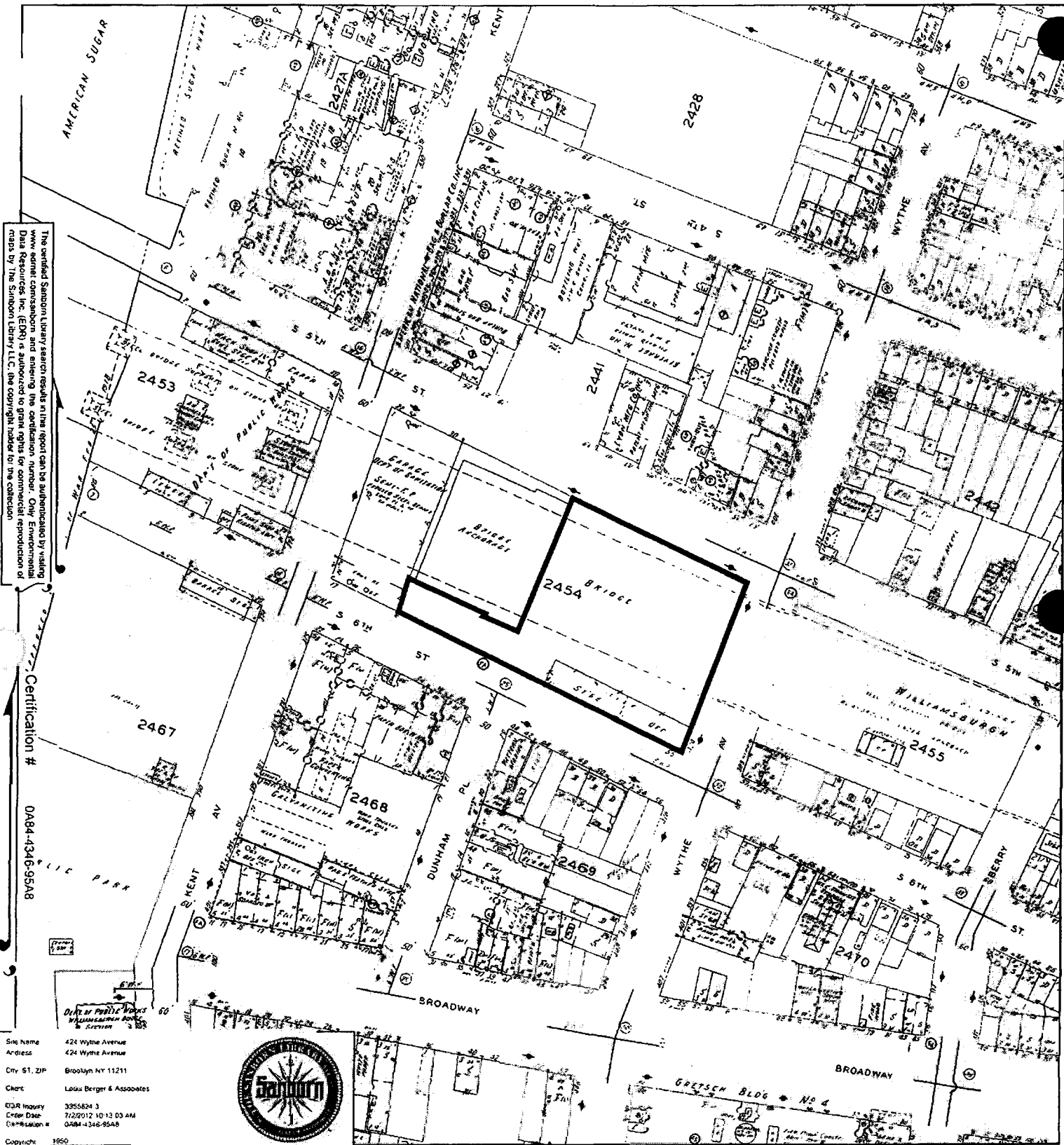
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1950 Certified Sanborn Map



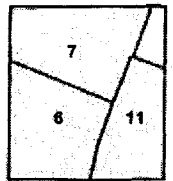
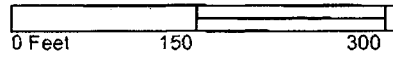
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1947 Certified Sanborn Map

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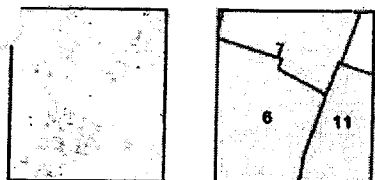
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Site Name
Address
City ST ZIP
Client
EDR Inquiry
Order Date
Certification #

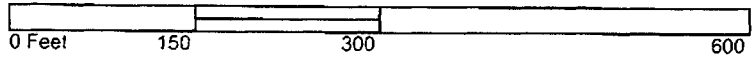
424 Wythe Avenue
424 Wythe Avenue
Brooklyn NY 11211
Louis Berger & Associates
3358824-3
7/2/2012 10:13:03 AM
0A84-4346-95A8



Certified Sanborn Map combines the following sheets.
Shaded areas indicate map sheets within the collection.



- Volume 3, Sheet 11
- Volume 3, Sheet 6
- Volume 3, Sheet 7



1935 Certified Sanborn Map



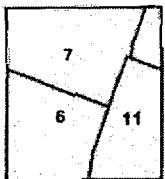
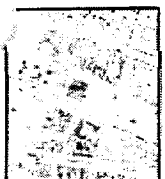
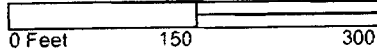
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Certification #
0A84-4346-95A8

Site Name: 424 Wythe Avenue
 Address: 424 Wythe Avenue
 City, ST, ZIP: Brooklyn NY 11211
 Client: Louis Berger & Associates
 EDR Inquiry: 3355824 3
 Order Date: 7/27/2012 10:13:03 AM
 Certification #: 0A84-4346-95A8
 Copyright: 1935



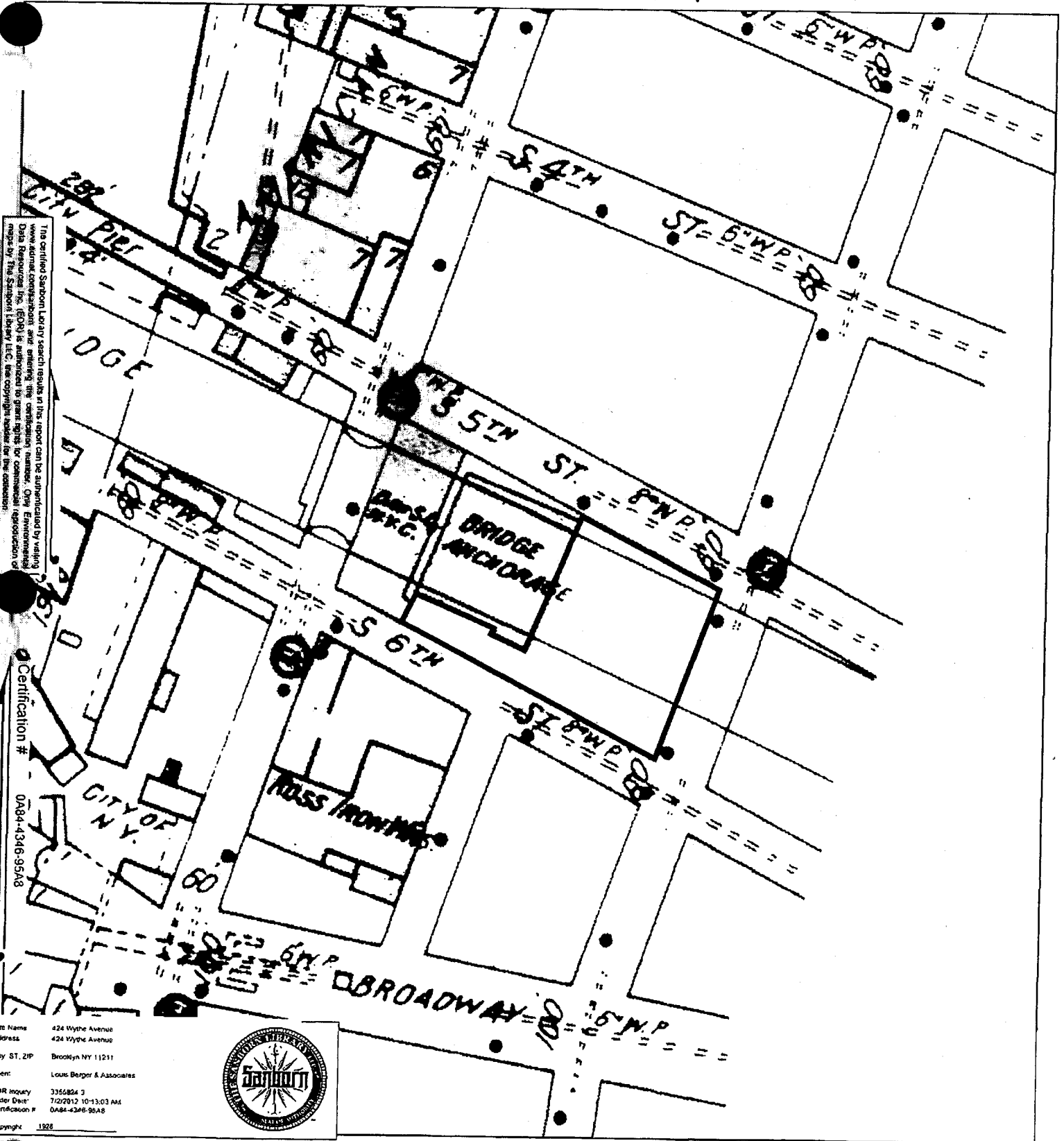
This Certified Sanborn Map combines the following sheets.
 Outlined areas indicate map sheets within the collection.



Volume 3, Sheet 6
 Volume 3, Sheet 7
 Volume 3, Sheet 11



1928 Certified Sanborn Map



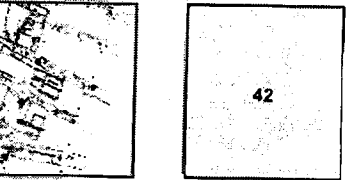
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Certification # 0A94-4346-95A8

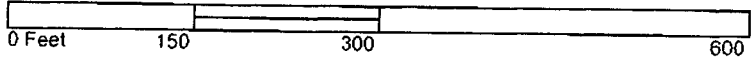
Name: 424 Wythe Avenue
 Address: 424 Wythe Avenue
 City, ST, ZIP: Brooklyn NY 11211
 Agent: Louis Berger & Associates
 Phone Inquiry: 3355824 J
 Fax: 7222812 10-13:03 AM
 Ref: 0A94-4346-95A8



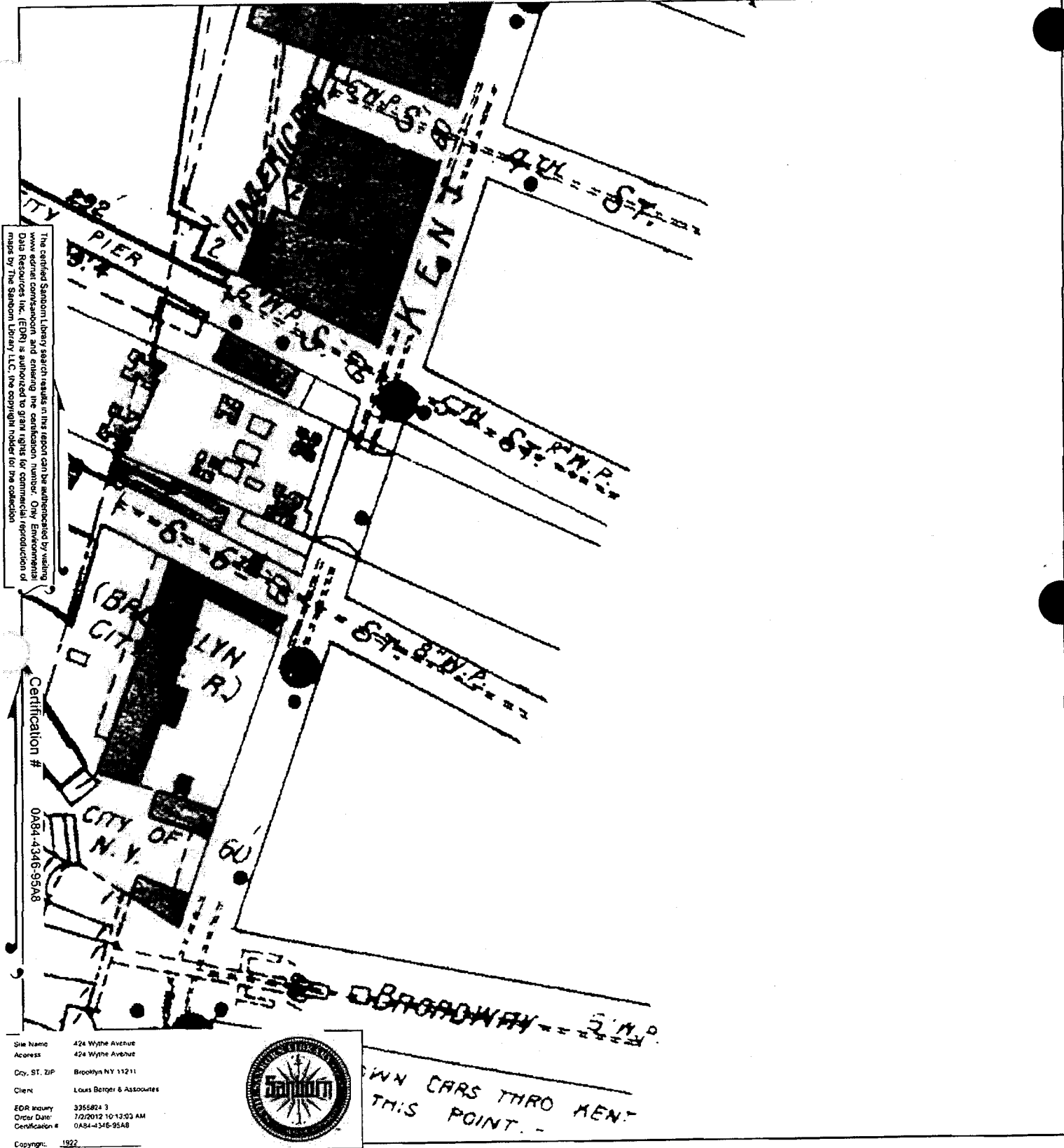
Certified Sanborn Map combines the following sheets. Shaded areas indicate map sheets within the collection.



Volume Pier Maps, Sheet 42



1922 Certified Sanborn Map



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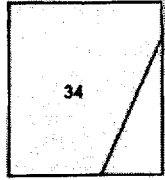
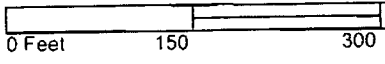
Certification #
0A84-4346-95A8

Site Name 424 Wythe Avenue
 Address 424 Wythe Avenue
 City, ST, ZIP Brooklyn NY 11211
 Client Louis Berger & Associates
 EDR Inquiry 3355824 3
 Order Date 7/27/12 10:13:03 AM
 Certification # 0A84-4346-95A8



OWN CARS THRO MENT
THIS POINT.

This Certified Sanborn Map combines the following sheets.
 Outlined areas indicate map sheets within the collection.



Volume Pier Maps, Sheet 34



1918 Certified Sanborn Map

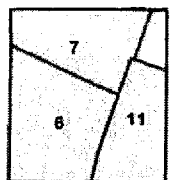
The certified Sanborn Library version results in this report can be authenticated by visiting www.enr.com and entering the certification number. Only Environmental Data Resources Inc. (EDRI) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.

Certification # 0A84-4346-95A8

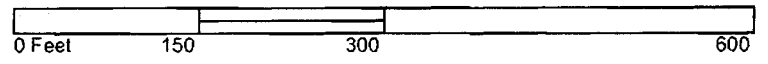
Site Name 424 Wythe Avenue
 Address 424 Wythe Avenue
 City, ST, ZIP Brooklyn NY 11211
 Client Louis Berger & Associates
 EDR Inquiry 3355824 3
 Order Date 7/2/2012 10:13:03 AM
 Certification # 0A84-4346-95A8
 Copyright 1918



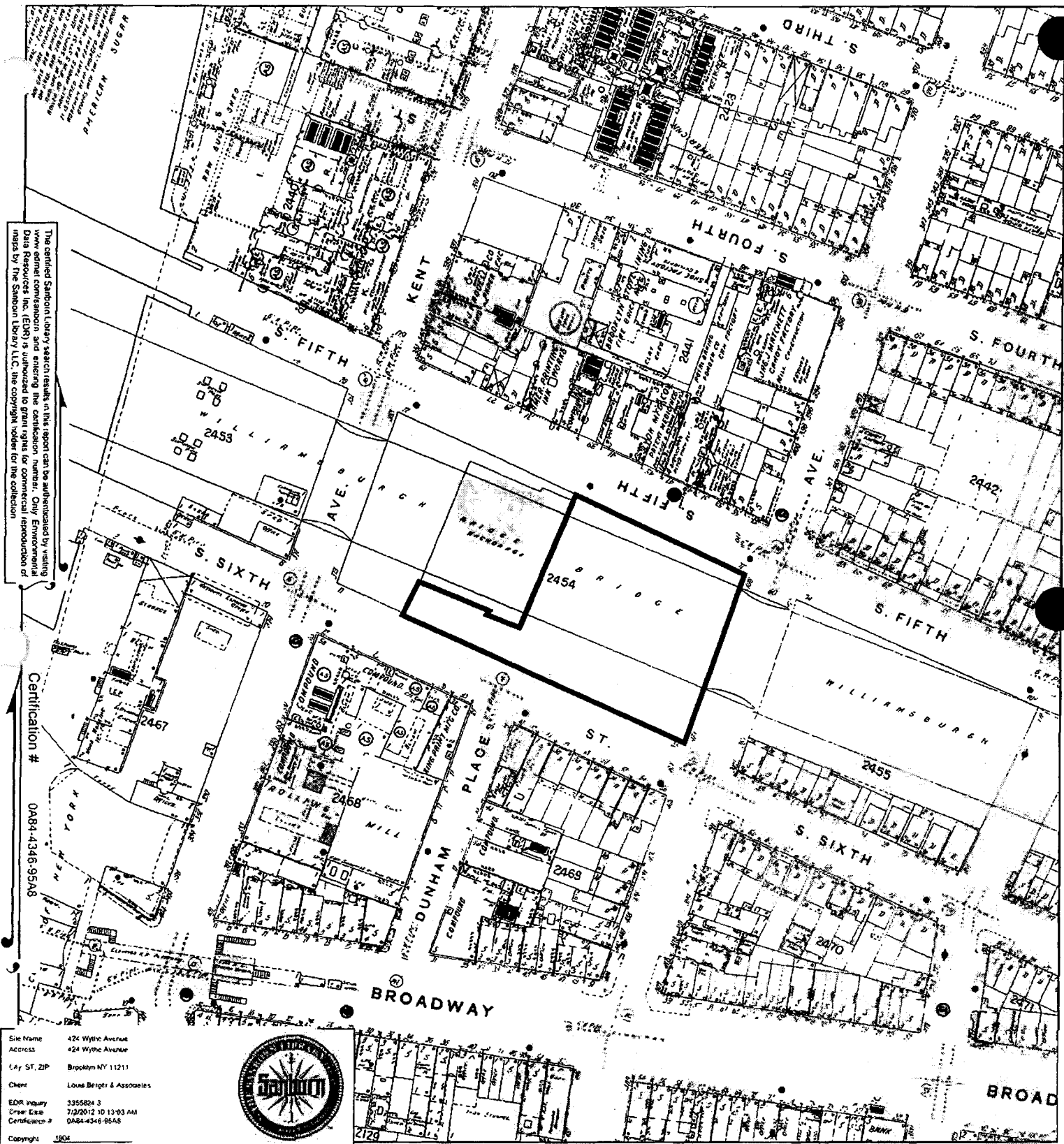
Certified Sanborn Map combines the following sheets. Shaded areas indicate map sheets within the collection.



- Volume 3, Sheet 6
- Volume 3, Sheet 7
- Volume 3, Sheet 11



1904 Certified Sanborn Map



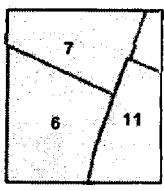
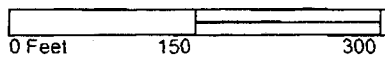
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Certification # 0A84-4346-95A8

Site Name 424 Wythe Avenue
 Address 424 Wythe Avenue
 City ST, ZIP Brooklyn NY 11211
 Client Louis Berger & Associates
 EDR Inquiry 3355824 3
 Order Date 7/2/2012 10:13:03 AM
 Certification # 0A84-4346-95A8
 Copyright 1904



This Certified Sanborn Map combines the following sheets.
 Outlined areas indicate map sheets within the collection.



Volume 3, Sheet 6
 Volume 3, Sheet 7
 Volume 3, Sheet 11



1887 Certified Sanborn Map

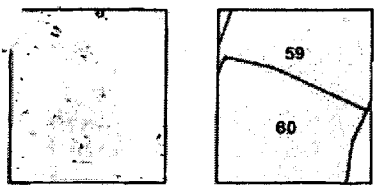
The certified Sanborn Library search results in this report can be authenticated by visiting www.edr.com, contacting and entering the certification number. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by The Sanborn Library LLC, the copyright holder for the collection.

Certification # 0A84-346-95A8

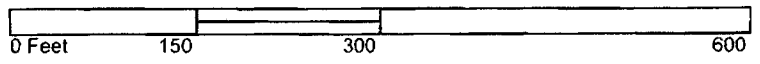
Site Name 424 Wythe Avenue
 Address 424 Wythe Avenue
 City, ST, ZIP Brooklyn, NY 11211
 Client Lotus Berger & Associates
 EDR Inquiry 3355824 3
 Order Date 7/2/2012 10:13:03 AM
 Date of Revision 0A84-346-36A8
 Copyright 1887



Certified Sanborn Map combines the following sheets. Shaded areas indicate map sheets within the collection.



Volume 3, Sheet 59
 Volume 3, Sheet 60



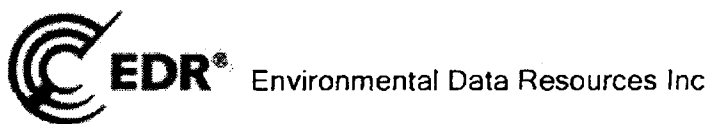


**APPENDIX G
CITY DIRECTORIES**

424 Wythe Avenue
424 Wythe Avenue
Brooklyn, NY 11211

Inquiry Number: 3355824.6
June 29, 2012

The EDR-City Directory Abstract



440 Wheelers Farms Road
Milford, CT 06461
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1928 through 2005. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 100 feet of the target property.

A summary of the information obtained is provided in the text of this report.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

<u>Year</u>	<u>Source</u>	<u>TP</u>	<u>Adjoining</u>	<u>Text Abstract</u>	<u>Source Image</u>
2005	Hill-Donnelly Corporation	-	X	X	-
2000	Cole Information Services	-	X	X	-
1997	NYNEX	-	X	X	-
1992	NYNEX Information Resource Co.	-	X	X	-
1985	NYNEX Information Resources Company	-	X	X	-
1980	New York Telephone	-	-	-	-
1976	New York Telephone	-	X	X	-
1973	New York Telephone	-	X	X	-
1970	New York Telephone	-	X	X	-
1965	New York Telephone	-	X	X	-
1960	New York Telephone	-	X	X	-
	New York Telephone Company	-	X	X	-
1949	New York Telephone Company	-	X	X	-
1945	New York Telephone Company	-	X	X	-
1940	New York Telephone Company	-	X	X	-
1934	R. L. Polk & Co.	-	X	X	-
1928	New York Telephone	-	X	X	-

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

424 Wythe Avenue
Brooklyn, NY 11211

FINDINGS DETAIL

Target Property research detail.

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

S 6

67 S 6

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1997	Vinces Auto Reprs	NYNEX
1985	VINCE S AUTO REPRS	NYNEX Information Resources Company
1976	VINCES AUTO REPAIR	New York Telephone
1949	Byrnes Exp & Trucking Co	New York Telephone Company
1945	Byrnes Exp & trucking Co	New York Telephone Company
1940	Byrnes Exp & Trucking Co	New York Telephone Company
1928	BYRNES EXP & TRUCKING CO	New York Telephone

68 S 6

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1976	JANDOUS ELECTRIC CONSTR CORP	New York Telephone

72 S 6

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1997	SASSO Ines	NYNEX
	PEREZ C	NYNEX
1992	TORRES JORGE	NYNEX Informantion Resource Co.
	LAMOURT MERCEDES	NYNEX Informantion Resource Co.
	SASSO INES	NYNEX Informantion Resource Co.
1985	TORRES JORGE	NYNEX Information Resources Company
1976	WASIL VINCENT	New York Telephone
	LUGO MARIA	New York Telephone
1960	Miller Alex	New York Telephone Company
	MILLER ALEX	New York Telephone

74 S 6

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1997	HEMPEI Camille	NYNEX
	BURKE Meghan	NYNEX
	NOVELLA D	NYNEX
1992	YAMAOKA PETER	NYNEX Informantion Resource Co.
1976	JIMENEZ ROSE	New York Telephone

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1976	CRUZADO MARIANO	New York Telephone
1960	CACCIABAUDO LEATRICE M MRS Cacciabaudo Leatrice M Mrs	New York Telephone New York Telephone Company
1928	SNYDER MARY MRS R	New York Telephone
76 S 6		
<u>Year</u>	<u>Uses</u>	<u>Source</u>
1928	HEATHCOTE SARAH MRS R	New York Telephone
78 S 6		
<u>Year</u>	<u>Uses</u>	<u>Source</u>
1997	ARADI Laszio	NYNEX
1992	DEJESUS SYLVIA	NYNEX Informantion Resource Co.
1976	FELICIANO MARTIN	New York Telephone
1960	MARTIN D E Martin D E	New York Telephone New York Telephone Company
1928	LEVY RUTH R	New York Telephone
<u>S 6TH</u>		
67 S 6TH		
<u>Year</u>	<u>Uses</u>	<u>Source</u>
1934	BYRNES EXPRESS & TRUCKING CO INC ALBERT W BYRNES PRES ELLIE F BYNES SEC-TR	R. L. Polk & Co.
	BYRNES ELLIE F SEC-TRES BVRNES EXP & TRUCKING CO INC	R. L. Polk & Co.
	BYRNES ALBERT W PRES BWJER EXP & TRUCKING CO INC	R. L. Polk & Co.
71 S 6TH		
<u>Year</u>	<u>Uses</u>	<u>Source</u>
1934	MEDOFF SOPHIE CLK R OPR H FCTYWKR R MGR R	R. L. Polk & Co. R. L. Polk & Co. R. L. Polk & Co. R. L. Polk & Co.
72 S 6TH		
<u>Year</u>	<u>Uses</u>	<u>Source</u>
1934	PETER SOPHIE H PETER MORRIS LAB R UCNSKI WICA BAKER H	R. L. Polk & Co. R. L. Polk & Co. R. L. Polk & Co.

FINDINGS

73 S 6TH

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1934	CANTWELL CHAS FCTYWKR R	R. L. Polk & Co.
	CANTWELL GEO R	R. L. Polk & Co.
	CANTWELL HAROLD FCTYWKR R	R. L. Polk & Co.
	CANTWELL NELLIE H	R. L. Polk & Co.
	CANTWELL WM CHAUF R	R. L. Polk & Co.

74 S 6TH

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1934	SNYDER JACK CLK H	R. L. Polk & Co.
	LUGININSKI BARBARA R	R. L. Polk & Co.

75 S 6TH

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1934	MARKOWITZ HILDA CLK R	R. L. Polk & Co.
	MARKOWITZ MAX CLK R	R. L. Polk & Co.
	MARKOWITZ REBECCA R	R. L. Polk & Co.
	MARKOWITZ MAYER ORP H	R. L. Polk & Co.

77 S 6TH

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1934	CRAVEN JAS ACCT H	R. L. Polk & Co.
	YOLANDA SALVATORE H	R. L. Polk & Co.

78 S 6TH

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1934	BAYORIN CHAS FCTUWKR H	R. L. Polk & Co.
	OSBORN THOS LAB H	R. L. Polk & Co.
	RUSSO ESTHER OPR R	R. L. Polk & Co.
	RUSSO HYMAN SHOE REPR H	R. L. Polk & Co.
	RUSSO MOLLY R	R. L. Polk & Co.

S 6TH ST

67 S 6TH ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2005	Vinces Auto Repairs	Hill-Donnelly Corporation
2000	VINCES AUTO REPRS	Cole Information Services

FINDINGS

S 6TH St

67 S 6TH St

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1973	Vinces Auto Repair	New York Telephone
1965	Byrnes Exp & Trucking Co	New York Telephone

S 6TH ST

71 S 6TH ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2005	HGonzalez LA	Hill-Donnelly Corporation
	I Gonzales L	Hill-Donnelly Corporation

S 6TH St

71 S 6TH St

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Hernandez Maria Mrs	New York Telephone

S 6TH ST

72 S 6TH ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2005	Perez C	Hill-Donnelly Corporation
	h Rodriguez Kathiria AO	Hill-Donnelly Corporation
	h Sasso Ines	Hill-Donnelly Corporation
2000	APARTMENTS	Cole Information Services
	C PEREZ	Cole Information Services
	3 INES SASSO	Cole Information Services
	JORGE TORRES	Cole Information Services

S 6TH St

72 S 6TH St

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1973	Wasil Vincent	New York Telephone
1970	Wasil Vincent	New York Telephone
1965	Wasil Vincent	New York Telephone

FINDINGS

S 6TH ST

74 S 6TH ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2005	No Current Listing	Hill-Donnelly Corporation
2000	MICHAELA MURRAY	Cole Information Services
	MICHAEL STEINMETZ	Cole Information Services
	CAMILLE HEMPEL	Cole Information Services
	JOHN B JOHNSON	Cole Information Services
	MICHAEL STEINMETZ	Cole Information Services

S 6TH St

74 S 6TH St

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1973	Jimenez Rose	New York Telephone

76 S 6TH St

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Torres Vidalina	New York Telephone

S 6TH ST

78 S 6TH ST

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2005	Brach Joel	Hill-Donnelly Corporation
	Joiner Whitney	Hill-Donnelly Corporation
	Devilbiss Kellea vt	Hill-Donnelly Corporation
	Rosenburg David	Hill-Donnelly Corporation
2000	JOSEPH BRACH	Cole Information Services
	JBR REALTY & MNGT CO	Cole Information Services
	A JENSON	Cole Information Services
	CRAIG EASTLAND	Cole Information Services
	DIETMAR POST	Cole Information Services

S 6TH St

78 S 6TH St

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1973	Feliciano Martin	New York Telephone
1970	Feliciano Martin	New York Telephone

FINDINGS

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1970	Amaro Sergio	New York Telephone
1965	Feliciano Martin	New York Telephone

WYTHE AVE

395 WYTHE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2005	Superpack Warehouse Distr	Hill-Donnelly Corporation
2000	BERNARD PCS LIGHT	Cole Information Services
1997	Bernard Pecaso Lighting	NYNEX
1976	CHILLAGH & SON SPECIAL WELDING INC	New York Telephone
1973	Chillagh & Son Special Welding	New York Telephone
1970	Chillagh & Son Special Welding	New York Telephone
1965	CHILLAGH & SON SPECIAL WELDING	New York Telephone
1960	VELOCAST INC Velocast Inc	New York Telephone New York Telephone Company

397 WYTHE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
1997	CZERNEK Ladislav	NYNEX
1992	LUAX LIGHTING CZERNEK LADISLAV	NYNEX Informantion Resource Co. NYNEX Informantion Resource Co.
1934	DORMAN ADOLPH GLASS	R. L. Polk & Co.

426 WYTHE AVE

<u>Year</u>	<u>Uses</u>	<u>Source</u>
2005	I S Auto Group LLC i	Hill-Donnelly Corporation
1997	Thomas D Ambrosio	NYNEX
1976	H & L WOODCRAFT CORP FISCHER MORRIS PLTG	New York Telephone New York Telephone
1973	Fischer Morris pltg Chromium Plating & Polishing Corp	New York Telephone New York Telephone
1970	Fischer Morris pltg Chromium Plating & Polishing Corp	New York Telephone New York Telephone
1965	Fischer Morris pltg CHRDMIUM PLATING & POLISHING CORP	New York Telephone New York Telephone
1960	Fulton Tool Co FULTON TOOL CO	New York Telephone Company New York Telephone

FINDINGS

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched

424 Wythe Avenue

Address Not Identified in Research Source

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928

ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

Address Researched

395 WYTHE AVE

397 WYTHE AVE

426 WYTHE AVE

67 S 6

67 S 6TH

67 S 6TH ST

67 S 6TH St

68 S 6

71 S 6TH

71 S 6TH ST

71 S 6TH St

72 S 6

72 S 6TH

72 S 6TH ST

72 S 6TH St

73 S 6TH

74 S 6

74 S 6TH

Address Not Identified in Research Source

1992, 1985, 1980, 1949, 1945, 1940, 1934, 1928

2005, 2000, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928

2000, 1992, 1985, 1980, 1949, 1945, 1940, 1934, 1928

2005, 2000, 1992, 1980, 1973, 1970, 1965, 1960, 1934

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928

1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1970, 1960, 1949, 1945, 1940, 1934, 1928

2005, 2000, 1997, 1992, 1985, 1980, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928

2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1965, 1960, 1949, 1945, 1940, 1934, 1928

2005, 2000, 1980, 1973, 1970, 1965, 1949, 1945, 1940, 1934, 1928

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928

1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1960, 1949, 1945, 1940, 1934, 1928

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928

2005, 2000, 1985, 1980, 1973, 1970, 1965, 1949, 1945, 1940, 1934

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928

FINDINGS

Address Researched

74 S 6TH ST

74 S 6TH St

75 S 6TH

76 S 6

76 S 6TH St

77 S 6TH

78 S 6

78 S 6TH

78 S 6TH ST

78 S 6TH St

Address Not Identified in Research Source

1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1965, 1960, 1949, 1945, 1940, 1934, 1928

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928

2005, 2000, 1985, 1980, 1973, 1970, 1965, 1949, 1945, 1940, 1934

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928

1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928

2005, 2000, 1997, 1992, 1985, 1980, 1976, 1960, 1949, 1945, 1940, 1934, 1928



New York City Department of Design and Construction
Final Phase I Environmental Site Assessment Report
121 Plymouth Relocation to 424 Wythe Avenue - 424 Wythe Avenue, Brooklyn, NY

APPENDIX H
REGULATORY AGENCY DATABASE REPORT
(EDR Database Report 3355824_2 on CD)



APPENDIX I
RECORD OF AGENCY CORRESPONDENCE

**USER QUESTIONNAIRE for PHASE I ENVIRONMENTAL SITE ASSESSMENT
ASTM STANDARD PRACTICE E1527-05**

Note: In order to qualify for one of the *Landowner Liability Protections* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 the *User* (as defined in E1527-05) should provide the information requested below, to the extent available, to ensure the completion of "all appropriate inquiry" with respect to the subject Property. The *environmental professional* preparing the Phase I Environmental Site Assessment ("ESA") report needs this information to complete the report. Please see the attached "Common Elements Guide."

Property Identification: Bridge Paintings Yard

User: NYC DOT Bridge Division

Reason for ESA: _____

Questionnaire Respondent: NYC DOT

Signature: [Signature] for Date: 7/26/12
NYC Dept. of Transportation

1. Environmental cleanup liens that are filed or recorded against the Property (40 CFR 312.25).

Are you aware of any environmental cleanup liens against the Property that are filed or recorded under federal, tribal, state or local law?

N/A

2. Activity and land use limitations that are in place on the Property or that have been filed or recorded in a registry (40 CFR 312.26).

Are you aware of any *activity and use limitations*, such as engineering controls, land use restrictions or *institutional controls* that are in place at the Property and/or have been filed or recorded in a registry under federal, tribal, state or local law?

N/A

USER QUESTIONNAIRE for PHASE I ENVIRONMENTAL SITE ASSESSMENT

3. **Specialized knowledge or experience of the person seeking to qualify for the *Landowner Liability Protections* (40 CFR 312.28).**

As the *User* of this ESA, do you have any specialized knowledge or experience related to the Property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the Property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

N/A

4. **Relationship of the purchase price to the fair market value of the Property if it were not contaminated (40 CFR 312.29).**

Does the purchase price being paid for this Property reasonably reflect the fair market value of the Property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the Property?

N/A

USER QUESTIONNAIRE for PHASE I ENVIRONMENTAL SITE ASSESSMENT

5. Commonly known or reasonably ascertainable information about the Property (40 CFR 312.30).

Are you aware of commonly known or reasonably ascertainable information about the Property that would help the environmental professional to identify conditions indicative of releases or threatened releases of hazardous substances or petroleum to the environment? For example, as user,

(a.) Do you know the past uses of the Property?

NO

(b.) Do you know of specific chemicals that are present or once were present at the Property?

NO

(c.) Do you know of spills or other chemical releases that have taken place at the Property?

NO

(d.) Do you know of any environmental cleanups that have taken place at the Property?

NO

USER QUESTIONNAIRE for PHASE I ENVIRONMENTAL SITE ASSESSMENT

6. The degree of obviousness of the presence or likely presence of contamination at the Property, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31).

As the User of this ESA, based on your knowledge and experience related to the Property, are there any obvious indicators that point to the presence or likely presence of contamination at the Property?

W/A



THE LOUIS BERGER GROUP, INC.

412 Mt. Kemble Avenue, Morristown, New Jersey 07960
Tel (973) 407-1000 Fax (973) 267-6468 www.louisberger.com

ENVIRONMENTAL SITE ASSESSMENT PROPERTY OWNER QUESTIONNAIRE

PLEASE RETURN TO: Fameeda Ali

The Louis Berger Group, Inc. is preparing an Environmental Site Assessment of the following property:

Property Location: 424 Wythe Avenue, Brooklyn, New York

Block/Lot No.: Block 2454 , Lot 1

Name of Person Completing Questionnaire:

As part of the Environmental Site Assessment, it is necessary to obtain, to the extent possible, detailed information regarding the environmental condition and history of the referenced site. Please take a few moments to answer the following questions as completely as possible.

1. What is the current use of the property?

- Residential - Single Family
- Residential - Multi Family
- Commercial - City government
- Industrial/Manufacturing
- Agriculture
- Unimproved

Describe type of use: Utilized by local government as a workshop for City-employed bridge painters.
How long has the property been used for this purpose: 14 years

- What was the property used for prior to this:* Utilized by local government as a workshop and locker room for City-employed skilled trades for bridges work.
2. What is the estimated age of all on-site structures?
90+ years old
3. When did the current landowner assume ownership?
90+ years ago
4. Who was the previous landowner? unknown
5. Do you believe that any asbestos containing building materials are present on-site?

- Yes
- No
- Unknown

6. Do you believe that lead based paint was ever used on the property?

- Yes
 No
 Unknown

7. Have any other type of environmental assessments/investigations ever been performed on the property?

- Yes What Type:
 No
 Unknown

8. Do any of the on-site buildings have fluorescent light fixtures?

- Yes
 No
 Unknown

9. Has the property ever been used as any of the following?

- Industrial/Manufacturing Operation
 Gasoline Station
 Automotive Repair Facility
 Commercial Printing Facility
 Dry Cleaning Facility
 Photo-Developing Facility
 Junk Yard/Scrap Yard
 Landfill
 Waste Treatment Storage/Treatment Facility
 Disposal Processing/Recycling Facility

} NO, none of these

10. Are there currently, or have there been any of the following located on the property?

- Damaged/discarded automotive/industrial batteries
 Individual containers of chemicals
 Individual containers of paints

11. Are there currently, or have there previously been any industrial drums or sacks/bags of chemicals located/stored on the property?

- Yes → Drums of thinners, acetone, laquer thinner, mineral spirits
 No
 Unknown

12. Has fill material ever been brought onto the property?

- Yes
 No Unknown, not since 1997

13. If so, what type of fill material?

- Construction debris
- Trash
- Clean soil/stone
- Potentially contaminated soil

14. Are there currently any underground storage tanks (USTs) located on the property?

- Yes Number; Size; Contents: _____
 - No
- Registration No(s): _____
- Date Installed: _____

15. Were any USTs previously located on the property?

- Yes Number; Size; Contents: One each, 1500 gallon heating oil
 - No
- Registration No(s): _____
- Date Installed: _____
- When removed: 10/01/95

16. Has leak detection equipment been installed with the tank(s)?

- Yes
- No
- Unknown

17. Have any USTs ever been replaced/upgraded by new USTs?

- Yes
- No
- Unknown

18. Have any existing USTs had tightness testing performed?

- Yes Results: _____
- No
- Unknown

19. Are there currently any aboveground storage tanks (ASTs) located on the property?

- Yes Number; Size; Contents: 2 tanks, 6250 gallons each contains potassium acetate in a 50% aqueous solution
 - No
- Date Installed: _____
- 2001

20. Were any ASTs previously located on the property?
- Yes Number; Size; Contents: _____
 No
Date Installed: _____
When removed: _____
21. If there are/were ASTs present on-site, have there ever been any spills/discharges associated with the ASTs?
- Yes
 No
 Unknown
22. Has any remediation (removal of contaminated soil/water) ever been performed on the site?
- Yes
 No
 Unknown
23. Have there ever been any spills (>5 gallons) of oil or chemicals that have occurred on-site?
- Yes Was the incident reported to a regulatory agency: _____
 No (If yes, spill # _____)
 Unknown
24. Are there any wells located on-site?
- Yes. For what purpose: _____
 No
 Unknown
25. Are there any recharge basins, retention basins, or holding basins located on the property?
- Yes
 No
 Unknown
26. Are there any septic/cesspool systems located on the property?
- Yes
 No
 Unknown

27. Are the on-site buildings served by local water, sanitary, and storm water utilities?

- Yes
 No
 Unknown

28. How are the on-site buildings currently heated? forced air, natural gas-fired, steam

29. How were the on-site buildings previously heated? oil heat

30. Are there currently, or have there previously been any electrical transformers (PCB-Containing) located on the property?

- Yes
 No
 Unknown

31. Are there any wetlands/surface water bodies located on the property?

- Yes
 No
 Unknown

32. Has the property ever been tested for the presence of Radon?

- Yes
 No
 Unknown

33. Are there any conditions/issues with the property that could be considered potential areas of environmental concern? (please explain):

Historic lead paint delamination from the Williamsburg Bridge may be considered a potential area of environmental concern as far as the soil is considered.



THE LOUIS BERGER GROUP, INC.

412 Mount Kemble Avenue, PO Box 1946, Morristown, New Jersey 07962-1946
Tel (973) 407-1000 Fax (973) 267-6468 www.louisberger.com

July 2, 2012

Records Access Officer
New York State Department of Environmental Conservation
FOIL Office
47-40 21st Street
Long Island City, NY 11101

**RE: Freedom of Information Law (FOIL) Request –
424 Wythe Avenue, Brooklyn, NY**

Dear Sir or Madam,

The Louis Berger Group, Inc is preparing an environmental site assessment of the following property located in New York City, New York:

**424 Wythe Avenue
Brooklyn, New York**

This letter is a request under the FOIL for any information your agency may have regarding this property. This would include any information on permits issued, underground storage tanks, hazardous materials incidents, environmental investigation and/or remediation activities at the sites.

If you have any questions or require any additional information, please do not hesitate to contact me at 973-407-1127 (office), 973-224-1214 (cell) or email at mfreed@louisberger.com. Thank you in advance for your assistance.

Sincerely,
THE LOUIS BERGER GROUP, INC.

Mark Freed
Environmental Scientist

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Petroleum Bulk Storage Program
Facility Information Report

BS # :
2-242306

Site: 424 WYTHE AVENUE
 424 WYTHE AVENUE

Owner: NYC DOT
 40 WORTH ST
 NEW YORK, NY 10013
 (212) 566-3870

Mail: NYC DOT FACILITIES MAINTENANCE
 69-46 SYBILLA STR
 FOREST HILLS, NY 11375

Town: New York City County: Kings
 Owner Type: Local Government
 On-Site Operator: FACILITY MANAGER (718) 963-9216
 Primary Operator:
 Emergency: DOT CONTROL RM (212) 566-3406

ATTN: VIVIAN MARCOVICI
 (718) 793-7186

Printed: 7/18/2012

Page 1 of 1

Site Status: Unregulated (<1101 gal.) Reg Expires: 06/30/2002 Cert Printed: 01/16/1998 Total Active Tanks: 0 Last Inspected:
 Site Type: Other Cert Issued: 12/29/1997 Total Active Capacity: 0 Inspected By:

(2) Tank No	(3) Tank Loc	(4) Status	(5) Date Install	(5) Date Closed	(6) Capacity (gals)	(7) Product	(8) Tank Type	(9) Tank IP	(10) Tank EP	(11) Tank SC	(12) Tank LD	(13) Tank OP	(14) Tank SP	(15) Tank Disp	(16) Tank Loc	(17) Pipe Type	(18) Pipe EP	(19) Pipe SC	(20) Pipe LD	(21) UDC	(22) Multi Owner	Date Test	Next Test	
001	5	3		10/01/1995	1,500	0001	01	00	00	00	00	04	01	00	01	00	01	00					12/01/1990	

(See Reverse Side or Last Page for Code Keys)

PBS # :
2-610661

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Petroleum Bulk Storage Program
Facility Information Report

postscript_foil.rpt

Printed : 7/18/2012

PETROLEUM BULK STORAGE APPLICATION - SECTION B - TANK INFORMATION - CODE KEYS

Action (1)

1. Initial Listing
2. Add Tank
3. Close/Remove Tank
4. Information Correction
5. Recondition/Repair/Reline Tank

Tank Location (3)

1. Aboveground-contact w/soil
2. Aboveground-contact w/impervious barrier
3. Aboveground on saddles, legs, stilts, rack, or cradle
4. Aboveground with 10% or more below ground
5. Underground
6. Aboveground in Subterranean Vault w/ access for inspections

Status (4)

1. In-service
2. Temporarily out-of-service
3. Closed-Removed
4. Closed- In Place
5. Tank converted to Non-Regulated use

Under Dispenser Containment (UDC) - sump/containment underneath a motor fuel dispenser (21)

Check If Present

Tank Owned by Party Other Than Listed in Section a (22)

Check If Applicable

Product Stored (7)

Heating Oils

- 0001. #2 Fuel Oil
- 0002. #4 Fuel Oil
- 0259. #5 Fuel Oil
- 0003. #6 Fuel Oil
- 0012. Kerosene
- 0591. Clarified Oil
- 2711. Biodiesel (Heating)
- 2642. Used Oil (Heating)

Motor Fuels

- 0009. Gasoline
- 2712. Gasoline/Ethanol
- 0008. Diesel
- 2710. Biodiesel
- 0011. Jet Fuel
- 1044. Jet Fuel (Biofuel)
- 2641. Aviation Gasoline

Crude Oil

- 0006. Crude Oil
- 0701. Crude Oil Fractions

Tank Type (8)

01. Steel/Carbon Steel/Iron
02. Galvanized Steel Alloy
03. Stainless Steel Alloy
04. Fiberglass Coated Steel
05. Steel Tank in Concrete
06. Fiberglass Reinforced Plastic (FRP)
07. Plastic
08. Equivalent Technology
09. Concrete
10. Urethane Clad Steel
99. Other-please list:*

Internal Protection (9)

00. None
01. Epoxy Liner
02. Rubber Liner
03. Fiberglass Liner (FRP)
04. Glass Liner
99. Other-please list:*

Secondary Containment (11/19)

00. None
- Aboveground Tanks/Piping
 - 01. Diking
 - 02. Vault (w/access)
 - 05. Synthetic Liner
 - 06. Remote Impounding Area
 - 09. Modified Double-Walled
 - 10. Impermeable Barrier ***
 - 11. Double Bottom ***

*** Each of these codes must be combined with code 01 or 06 to meet compliance requirements

Underground Tanks/Piping

03. Vault (w/o access)
04. Double-Walled
05. Synthetic Liner
07. Excavation/Trench Liner System
08. Flexible Internal Liner (Bladder)
10. Impervious Underlayment

Tank Leak Detection (12)

00. None
01. Interstitial Electronic Monitoring
02. Interstitial Manual Monitoring
03. Vapor Well
04. Groundwater Well
05. In-Tank System (Auto Tank Gauge)
06. Impermeable Barrier (Aboveground Only)
99. Other-please list:*

Overflow Prevention (13)

00. None
01. Float Vent Valve
02. High Level Alarm
03. Automatic Shut-off
04. Product Level Gauge (Aboveground Only)
05. Vent Whistle
99. Other-please list:*

Spill Prevention (14)

00. None
01. Catch Basin
02. Transfer Station Containment
99. Other - Please list*

Pumping/Dispensing Method (15)

00. None
01. Submersible
02. Suction
03. Gravity

Piping Location (16)

00. No Piping
01. Aboveground
02. Underground/On-ground
03. Aboveground/Underground Combination

Piping Type (17)

00. None
01. Steel/Carbon Steel/Iron
02. Galvanized Steel
03. Stainless Steel Alloy
04. Fiberglass Coated Steel
05. Steel Encased in Concrete
06. Fiberglass Reinforced Plastic (FRP)
07. Plastic
08. Equivalent Technology
09. Concrete
10. Copper
11. Flexible Piping
99. Other-please list:*

Pipe Leak Detection (20)

00. None
01. Interstitial Electronic Monitoring
02. Interstitial Manual Monitoring
03. Vapor Well
04. Groundwater Well
07. Pressurized Piping Leak Detector
08. Tank Top Sump
09. Exempt Suction Piping
99. Other-please list:*

* If other, please list on a separate sheet including Tank Number



THE LOUIS BERGER GROUP, INC.

412 Mount Kemble Avenue, PO Box 1946, Morristown, New Jersey 07962-1946
Tel (973) 407-1000 Fax (973) 267-6468 www.louisberger.com

July 2, 2012

FOIL Records Access Officer
New York City Department of Health and Mental Hygiene
FOIL Office
125 Worth Street
Room 604, Box #31
New York, NY 10013

**RE: Freedom of Information Law (FOIL) Request –
424 Wythe Avenue, Brooklyn, NY**

Dear Sir or Madam,

The Louis Berger Group, Inc is preparing an environmental site assessment of the following property located in New York City, New York:

**424 Wythe Avenue
Brooklyn, New York**

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Sincerely,
THE LOUIS BERGER GROUP, INC.

Mark Freed
Environmental Scientist



NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE
Thomas Farley, MD, MPH
Commissioner

Christopher D'Andrea
Deputy Director

Office of Environmental
Investigations
125 Worth St., Room 630
New York, NY 10013

Tel. 1 212 442 3372
Fax 1 212 786 4299

July 23, 2012

The Louis Berger Group, Inc.
412 Mount Kemble Avenue
PO Box 1946
Morristown, NJ 07962-1946

Request No: 2012FR01943

Dear Mark Freed:

In response to your recent request for environmental records on:

- 424 Wythe Avenue, Brooklyn, NY

Please note the following:

- The Office of Environmental Investigations has "NO" record of an investigation at the above address.
- Enclosed are copies of the requested records we have on file.

Sincerely,

Christopher D'Andrea, MS, CIH
Deputy Director

Cc: Renee Bryant



THE LOUIS BERGER GROUP, INC.

412 Mount Kemble Avenue, PO Box 1946, Morristown, New Jersey 07962-1946
Tel (973) 407-1000 Fax (973) 267-6468 www.louisberger.com

July 2, 2012

FOIL Records Access Officer
New York City Department of Environmental Protection
FOIL Office
59-17 Junction Boulevard, 19th Floor
Flushing, NY 11373

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424 Wythe Avenue, Brooklyn, NY**

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Sincerely,
THE LOUIS BERGER GROUP, INC.

Mark Freed
Environmental Scientist



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July 2, 2012

FOIL Records Access Officer
New York City Department of Environmental Protection
FOIL Office
59-17 Junction Boulevard, 19th Floor
Flushing, NY 11373

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Sincerely,
THE LOUIS BERGER GROUP, INC.

Mark Freed
Environmental Scientist

Log # 84678



Carter H. Strickland, Jr.
Commissioner

Vincent Sapienza
Deputy Commissioner
Bureau of Wastewater
Treatment
vsapienza@dep.nyc.gov

96-05 Horace Harding
Expressway
Corona, NY 11368
T: (718) 595-4906
F: (718) 595-6950

Date: 7/12/12

Re: Freedom of Information Law Request (FOIL) # 84678

Dear Sir or Madam:

I am writing in response to your FOIL request (see attached). This response specifically addresses only those aspects of your request related to the discharge of wastewater or other materials to a New York City public sewer. As this letter only pertains to records in the custody of the Division of Pollution Control and Monitoring, if your request was also directed to other divisions within the Bureau of Wastewater Treatment or to other bureaus within the Department of Environmental Protection, then you will receive a separate response from those divisions or bureaus.

Concerning your request, the **Division of Pollution Control and Monitoring:**

cannot identify the requested location because _____

after search, has not identified any records responsive to your request.

has identified records responsive to your request. Please telephone me at (718) 595-4756 to arrange for an appointment to review the information.

other _____

Sincerely,

Vitaly Weiler
FOIL Liaison
Division of Pollution Control and Monitoring



FIRE DEPARTMENT - CITY OF NEW YORK

Public Records Unit / Tanks Section

9 MetroTech Center
Brooklyn, New York 11201-3857
(718) 999-2441 or 2442



Fuel Tank Special Report Request Form

SECTION A

CUSTOMER INFORMATION

Please print the required information below.

Farnesda A.
Name
412 Mount Kemble Ave Morristown
Address
NJ
State 07962
Zip Code
973-407-1360
Telephone Number

OFFICE USE ONLY

Cashier / Search No.

PRU Staff

Accepted By/Initials:

Searched By:

Total Amount:

Note: Please make sure you complete this form and attach all required documents. Enclose a check or money order made payable to the NYC Fire Department and a stamped self-addressed envelope (with postage). Mail checks or money orders directly to the address and unit listed above. DO NOT MAIL CASH.

SECTION B

FUEL TANK REPORT - FEE \$10.00 / PER REPORT

424 Wythe Avenue (Block 2454, 40H)
House Number Street Name Brooklyn
Borough

- THE TOTAL AMOUNT AND SIZE OF EXISTING FUEL OIL / HEATING TANKS
THE TOTAL AMOUNT AND SIZE OF REMOVED OR SEALED FUEL OIL / HEATING TANKS
THE TOTAL AMOUNT AND SIZE OF EXISTING BURIED MOTOR VEHICLE TANKS
THE TOTAL AMOUNT AND SIZE OF REMOVED OR SEALED BURIED MOTOR VEHICLE TANKS
MOST RECENT TANK / PIPING TEST RESULTS
HISTORY OF BURIED TANKS LEAKS

Note: Requests will be responded to within 10 business days.

PR3 (July-08)



FIRE DEPARTMENT

9 METROTECH CENTER BROOKLYN, N.Y. 11201-3857

PUBLIC RECORDS UNIT
TANKS SECTION

Ref No: T- 30485

FAMEEDA ALI
*None
412 MT KEMBLE AVE
MORRISTOWN, NJ 07962

Dear Customer / Representative,

We have completed a search for address and the requested information listed below. In the "Status" box below, we have listed the results and any additional comments we may have regarding the search.

*Search Type Customer Requested	\$20 - Fuel - Existing & Removed		
*Search Address	424 WYTHE AVE		
*Borough	D4 - Brooklyn		
*Payment Type	02-Check	*Payment No.	5699
*Data Entered	8/14/2012	*Entered By	CC
Account Number		Requested Folder	

No. of Tanks	No. of Gallons	Tank Type	Fuel Type	Conversion

***Additional Information**

***Status** Completed - Record not found

IMPORTANT NOTICE: THIS REPORT IS NOT VALID IF ALTERED, CORRECTED OR WITHOUT FDNY CERTIFICATION

STAMP AND UNIT EMPLOYEE'S SIGNATURE.

Place FDNY Certification Stamp Below

THIS IS A COPY OF THE ORIGINAL DOCUMENT ON FILE WITH FDNY/US

SIGNATURE DR

If you need further assistance or additional information, please call (718) 999-2441; 8 am - 4pm (Monday - Friday).

Thank you,

Public Records Representative

E- 8/14/2012 CC
C- 8/14/2012 DR



FIRE DEPARTMENT

9 METROTECH CENTER BROOKLYN, N.Y. 11201-3857

PUBLIC RECORDS UNIT
TANKS SECTION

Ref No: **T- 30486**

FAMEEDA ALI
*None
412 MT KEMBLE AVE
MORRISTOWN, NJ 07962

Dear Customer / Representative,

We have completed a search for address and the requested information listed below. In the "Status" box below, we have listed the results and any additional comments we may have regarding the search.

*Search Type Customer Requested	\$20 - Motor - Existing & Removed		
*Search Address	424 WYTHE AVE		
*Borough	Q4 - Brooklyn		
*Payment Type	02-Check	*Payment No.	5699
*Data Entered	8/14/2012	*Entered By	CC
Account Number		Requested Folder	

No. of Tanks	No. of Gallons	Tank Type	Fuel Type	Conversion

*Additional Information

***Status** Completed - Record not found

**IMPORTANT NOTICE: THIS REPORT IS NOT VALID IF
ALTERED, CORRECTED OR WITHOUT FDNY CERTIFICATION
STAMP AND UNIT EMPLOYEE'S SIGNATURE.**

Place FDNY Certification Stamp Below
THIS IS TO BE FILED WITH THE ORIGINAL DOCUMENT ON FILE WITH FDNY/EMS
SIGNATURE <i>DR</i>

If you need further assistance or additional information, please call (718) 999-2441; 8 am - 4pm (Monday - Friday).

Thank you,

Public Records Representative

E- 8/14/2012 CC
C- 8/14/2012 DR



FIRE DEPARTMENT

9 METROTECH CENTER BROOKLYN, N.Y. 11201-3857

PUBLIC RECORDS UNIT
TANKS SECTION

Ref No: T- 30487

FAMEEDA ALI
*None
412 MT KEMBLE AVE
MORRISTOWN, NJ 07962

Dear Customer / Representative,

We have completed a search for address and the requested information listed below. In the "Status" box below, we have listed the results and any additional comments we may have regarding the search.

*Search Type Customer Requested	\$20 - Motor - Test & Leaks		
*Search Address	424 WYTHE AVE		
*Borough	04 - Brooklyn		
*Payment Type	02-Check	*Payment No.	5699
*Data Entered	8/14/2012	*Entered By	CC
Account Number		Requested Folder	

No. of Tanks	No. of Gallons	Tank Type	Fuel Type	Conversion

***Additional Information**

***Status** Completed - Record not found

IMPORTANT NOTICE: THIS REPORT IS NOT VALID IF ALTERED, CORRECTED OR WITHOUT FDNY CERTIFICATION

STAMP AND UNIT EMPLOYEE'S SIGNATURE.

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Thank you,

Public Records Representative

E- 8/14/2012 CC
C- 8/14/2012 DR



MyPropertyInfo -Powered by FRS

Available EPA Reports for 424 WYTHE AVENUE

- [FRS Detail Report for ID: 110031359937](#)
- [Enforcement & Compliance History Online Report for ID: 110031359937](#)
- [Cleanups in My Community Report](#)
- [RCRA Report for ID: NYR000145813](#)

Query executed at: Fri 27-Jul-2012 13:01:44

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Please contact appropriate state agency(s) who may hold additional information.

http://iaspub.epa.gov/enviro/fii_query_detail_disp_program



Facility Registry System (FRS)

You are here: [EPA Home](#) [Envirofacts](#) [FRS](#) Report

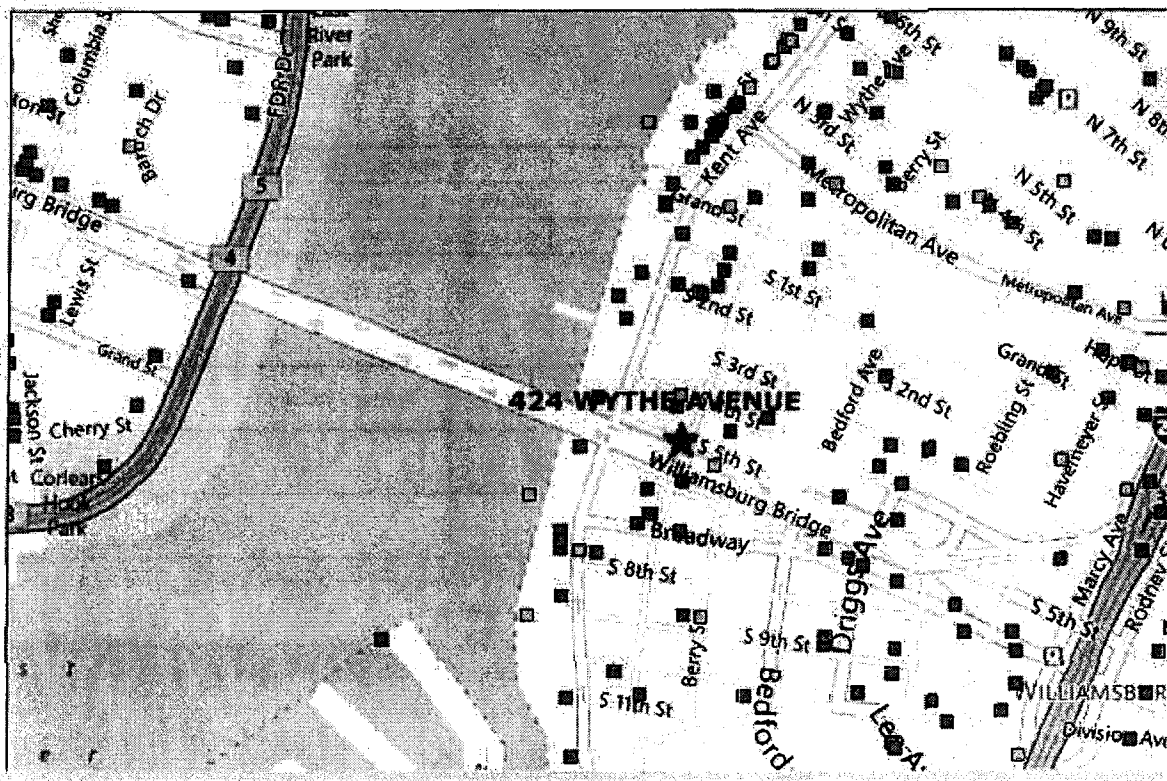


FRS

Facility Detail Report

424 WYTHE AVENUE

424 WYTHE AVENUE
BROOKLYN, NY 11211
EPA Registry Id: 110031359937



[Return to list of available reports](#)



Enforcement & Compliance History Online (ECHO)

You are here: [EPA Home](#) [Compliance and Enforcement](#) [ECHO](#) [Search Data](#) Search Results

Detailed Facility Report

For Public Release - Unrestricted Dissemination Report Generated on 07/27/2012
 US Environmental Protection Agency - Office of Enforcement and Compliance Assurance

Gray text in this report indicates information that is not required to be reported to EPA. These data, typi facilities, are often incomplete.

Facility Permits and Identifiers

Statute	System	Source ID	Facility Name	Street Address
	FRS	110031359937	424 WYTHE AVENUE	424 WYTHE AVENUE
RCRA	RCR	NYR000145813	424 WYTHE AVENUE	424 WYTHE AVENUE

Facility Characteristics

Statute	Source ID	Universe	Status	Areas	Permit Expiration Date	Latitude/ Longitude	India
	110031359937					LRT: 40.711415 , -73.966459	No
RCRA	NYR000145813	LQG	Active (H)			40.7114 , -73.9664	No

If the CWA permit is past its expiration date, this normally means that the permitting authority has not yet issued a new permit. In these administratively extended and kept in effect until the new permit is issued.

For the RCRA program, activities that contribute to an overall facility status of Active are displayed in parentheses using the acronym H permitting, A - corrective action, C - converter, and S - state-specific. More information is available in the Data Dictionary.

Inspection and Enforcement Summary Data

[Return to list of available reports](#)

PL **EPA** _SF_IND,P35_STIMULUS_BF_IND,P35_REGISTRY_ID,P35_BASIC_QUERY:Y,Y,Y,Y**Cleanups In My Community**[About this Lis](#)**Cleanups In My Community List Results**

This is a list of only the sites, properties and facilities which reside within the boundaries of the geographic area you have specified and which meet the criteria you have specified.

*Click on the column header to sort it in ascending or descending order.

*To view all the profiles and reports available for a cleanup, click on the site link found in the "Cleanup Name"

*To directly view any profiles and reports available for a cleanup, click on the associated report(s) found in the

*To see a map on a cleanup, click on the "Map It" link found in the "Map Site" column.

[Click Here to Redefine Search Criteria](#)

Results List

No Cleanup Data Found.

[Close Window](#)[Export to CSV](#)[Legal Notices](#)

Last updated on Friday, July 27, 2012

[Return to list of available reports](#)



No Results

The specified criteria didn't result in any data. This is often caused by applying filters that are too restrictive or and try again. The filters currently being applied are shown below.

HANDLER_ID is equal to NYR000145813

[Refresh](#)

Site Location

EPA Region 2 implements and enforces the RCRA corrective action program for New Jersey, New York, Puerto Rico, US Virgin Islands and Tribal Nations

Site Address:
 424 WYTHE AVENUE
 424 WYTHE AVENUE
 BROOKLYN, NY 11211
 County: KINGS

US Congressional District:
 Population within 1 mile:

Cleanup Progress Summary

Hazardous wastes are managed under the Resource Conservation and Recovery Act. When these waste contaminate the land, water or air they must undergo corrective action.

No site status is available at this time.

[View detailed list of cleanup activities >>](#)

[View information on what controls are in place to protect human health and the environment >>](#)

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Last updated on Friday, July 27, 2012



[CLICK HERE TO SIGN UP FOR BUILDINGS NEWS](#)

NYC Department of Buildings
Property Profile Overview

424 WYTHE AVENUE
 SOUTH 6 STREET 45 - 55
 WYTHE AVENUE 424 - 424

BROOKLYN 11249

BIN# 3335964
 Tax Block : 2454
 Tax Lot : 1
 Condo : NO
 Vacant : NO

Census Tract : 549
 Community Board : 301
Buildings on Lot : 2

[View DCP Addresses...](#) [Browse Block](#)

[View Zoning Documents](#) [View Challenge Results](#) [View Certificates of Occupancy](#)

Cross Street(s): WILLIAMSBURG BR PEDESTRIAN PATH, SOUTH 6 STREET

DOB Special Place Name:

DOB Building Remarks:

Landmark Status:

Local Law: NO

SRO Restricted: NO

UB Restricted: NO

Little 'E' Restricted: N/A

Legal Adult Use: NO

Additional BINs for Building: NONE

Special Status: N/A

Loft Law: NO

TA Restricted: NO

Grandfathered Sign: NO

City Owned: YES

Special District: UNKNOWN

This property is not located in an area that may be affected by Tidal Wetlands, Freshwater Wetlands, or Coastal Erosion Hazard Area. [Click here for more information](#)

Department of Finance Building Classification: Y6-GOVERNMENT INSTAL

Please Note: The Department of Finance's building classification information shows a building's tax status, which may not be the same as the legal use of the structure. To determine the legal use of a structure, research the records of the Department of Buildings.

	Total	Open
Complaints	0	0
<u>Violations-DOB</u>	1	0
<u>Violations-ECB (DOB)</u>	0	0
<u>Jobs/Filings</u>	3	
<u>ARA / LAA Jobs</u>	1	
Total Jobs	4	
Total Actions	0	

- [Elevator Records](#)
- [Electrical Applications](#)
- [Permits In-Process / Issued](#)
- [Illuminated Signs Annual Permits](#)
- [Plumbing Inspections](#)
- [Open Plumbing Jobs / Work Types](#)
- [Facades](#)
- [Marquee Annual Permits](#)
- [Boiler Records](#)
- [DEP Boiler Information](#)
- [Crane Information](#)
- [After Hours Variance Permits](#)

OR Enter Action Type:

OR Select from List:

Select...

AND

If you have any questions please review these [Frequently Asked Questions](#), the [Glossary](#), or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.



[CLICK HERE TO SIGN UP FOR BUILDINGS NEWS](#)

NYC Department of Buildings

DOB Violation Display for 020700LL629118361

Premises: 424 WYTHE AVENUE BROOKLYN

BIN: 3335964 Block: 2454 Lot: 1

Issue Date: 02/07/2000

Violation Category: V* - DOB VIOLATION - DISMISSED

Violation Type: LL6291 - LOCAL LAW 62/91 - BOILERS

Violation Number: 18361

Device No.: 00819656 - 01-COMMERCIAL

ECB No.:

Infraction Codes:

Description:

Disposition:

Code: D - DISMISSED Date: 06/23/2011

Inspector:

Comments: IRICIA CANCELLED CITY OWNED

If you have any questions please review these [Frequently Asked Questions](#), the [Glossary](#), or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.



APPENDIX J
QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS



EVAN MANKOFF, P.G.
Geologist

EDUCATION:

B.S., Geology, State University of New York, College at Oneonta, 2002

M.S., Geology University of Akron, 2004

PROFESSIONAL REGISTRATIONS:

40-Hour OSHA Health and Safety Training for Hazardous Waste Operations

Geological Society of America

8 Hour CPR / First Aid

PROFESSIONAL EXPERIENCE:

Mr. Mankoff is a Manager with more than 10 years of experience focusing on subsurface investigation activities and Brownfield redevelopment with experience in environmental and geotechnical engineering, and sophisticated data analysis using GIS and other geo-spatial applications. His responsibilities include project management and field coordination of subsurface assessments and investigations which involve monitoring well installation, soil boring completion, UST Removal, soil excavation, geophysical screening, slug testing, pump testing, packer testing, soil vapor extraction testing, air monitoring, and soil, air, surface water, sediment, and groundwater sampling. Mr. Mankoff is also responsible for the analysis and reporting of data associated with the above-mentioned field activities in compliance with state and federal regulations. Mr. Mankoff has lead complex data reduction and analysis programs required to support remedial investigation and remedial design projects.

- **NYC Office of Environmental Remediation, Gowanus Canal Superfund Site Investigation (City Owned Properties) (2010-2011).** *Project Geologist* responsible for preparation of Workplan, hydrogeologic portions of the Field Investigation, and Reporting. All project tasks were expedited and field work was performed concurrently at three properties under one mobilization in close coordination with the OER, NYCDEP and NYCDDC. Field work entailed an upland hydrogeologic investigation including groundwater monitoring well installation, water level gauging with associated groundwater elevation calculation, and soil, surface water and groundwater sampling and analysis; project included draft and final deliverables of a fully compliant USEPA report.
- **National Park Service, Flight 93 National Memorial, Shanksville, Pennsylvania (2009-2011).** *Project Manager* overseeing the investigation of potential soil contamination, human-health risk assessments and soil treatment plans. Studies were completed to support the acquisition of a 12-acre scrap metal yard to be incorporated into the larger Memorial Site. Soil data collection and associated interpretation was utilized to facilitate the health and safety protection of contractors (during construction), to support remediation-related cost recovery associated with the acquisition of partially contaminated land, to develop proper costs and methodologies for the management of potentially contaminated soils, and to comply with all applicable state and federal environmental regulations.
- **Brownfield Assessment Program, Passaic County, NJ, Department of Economic Development (2006-2011).** *Project Manager* for this US Environmental Protection Agency Grant-Funded Brownfield Inventory, Investigation, and Redevelopment Program. Assist the County with GIS, mapping and database management, preparation of quarterly reports in accordance with USEPA requirements, preparing and reviewing RFPs, workplans, HASPs and final reports. This program includes the generation of a comprehensive database based on NJDEP records, direct contact with municipalities and governing bodies as well as assessing current conditions at potential sites.



- **U.S. District Court-Ordered Remediation, Honeywell Study Area 7, Jersey City, NJ (2004-2011).** *Technical Reviewer* of geologic and hydrogeologic related materials on behalf of the Special Master as assigned by the New Jersey Courts as third party oversight. Integrating historic documents with current data in an effort to gain better understanding of the mechanisms that lead to current contamination distribution. Conducted technical review of geologic and hydrogeologic deliverables on behalf of the Special Master as assigned by the New Jersey Courts as third party oversight. Integrating historic documents (aerials and bathymetric contour maps) with current data in an effort to gain better understanding of the mechanisms of contamination distribution
- **Western Rail Yard Development, Manhattan, New York (2008).** *Senior Geologist* focusing on the site evaluation and characterization of several parcels involved in proposed redevelopment project associated with the Western Rail Yard. This program was completed on an expedited schedule and with significant logistical difficulties (track work, road closures, night work, etc.).
- **Public Safety Answering Center Investigation (PSAC II), Bronx, New York (2008).** *Senior Geologist* for this geotechnical and environmental investigation in association with the proposed Public Safety Answering Center completed for the Mayor's Office through a NYCEDC contract. This work included the management and oversight of drilling activities, collecting both environmental and geotechnical samples as well as associated reporting.
- **Struthers-Dunn Inc – Phase II, New Jersey Department of Environmental Protection, Pitman, New Jersey (2004-2011).** *Remedial Investigation Task Leader* responsible for the execution of Remedial Investigation and Remedial Alternatives Analysis in association with the redevelopment of this former electrical relay production facility. Investigative tasks included Reactive Liner Screening for DNAPL, Membrane Interface Probe Sampling, Radiological Screening, Building Inspections, Geophysics, Test Pits Excavation, Soil Borings Completion, Wetlands Delineation, Alternative Discrete Groundwater Sampling, Passive Diffusion Bag Sampling, Hydraulic Conductivity Testing, Ecological/Receptor Evaluation, and traditional sampling of soil, air, surface water, sediment, and groundwater. Responsibilities also include data evaluation, presentation and reporting.
- **Former Levari Citgo Service Station Remedial Investigation, New Jersey Department of Environmental Protection, Upper Township, New Jersey (2006-2011).** *Project Manager* responsible for the planning and execution of a regional groundwater investigation addressing gasoline contamination in a residential community. Investigative tasks included vertical groundwater screening, monitoring well installation, tidal studies, evaluation of local hydraulic conductivity, geophysics, groundwater sampling, wetland delineation and ecological/receptor evaluation. Responsibilities also include data evaluation, presentation and reporting.
- **Israel Water Authority, Risk Assessment and Development of Remedial Plans for Soil and Groundwater Contamination in the Dan Region Area and provision of other Consultant Services (2004-2010).** Evaluated data and conducted site visits of multi-disciplinary, first-of-its-kind project in Israel to evaluate, investigate, model, and remediate a very large groundwater contamination plume beneath greater Tel Aviv, Israel. Also included risk assessment, regulatory compliance analysis and criteria development, costing, feasibility evaluations, and concept engineering associated with the potential application of state-of-the-art U.S. technologies to address contaminated soils, groundwater, and surface water.
- **Kane Wetland Mitigation Bank, EarthMark Mitigation Services, Hackensack, New Jersey (2008-2011).** *Project Manager* focusing on the characterization and delineation of soil, sediment and surface water for this 240-acre mitigation project. This project included the design and construction oversight of a degraded site in the Meadowlands into an ecologically diverse wetland. The completion of this project allows several state



agencies to offset authorized wetland impacts including the New Jersey Transit's ARC Tunnel and Portal Bridge project along with several NJDOT and NY/NJ Port Authority projects.

- **Bathymetric and Depositional Analysis of Pro-glacial Environments, U.S. Army Corps of Engineers (1999-2004).** *Field Technician* responsible for the collection of melt water and basal ice samples, preparation for laboratory analysis, data tabulation and interpretation. Bathymetric survey of pro-glacial basin morphology and associated discharge tributaries.
- **Mass Balance Analysis of the Taku Glacier, Foundation for Glacier and Environmental Research (2000-2001).** *Field Technician* responsible for data collection to calculate the annual mass balance of the Taku Glacier and its tributaries. Test pits facilitated the positive mass calculation based on ice density coupled with the negative mass calculation generated by the measurement of discharge from the glaciers terminus.



MICHAEL J. McCLOSKEY, P.G.
Manager - Geological Services

EDUCATION:

B.S./1978/Geoscience/Montclair State College

PROFESSIONAL REGISTRATIONS:

Licensed Professional Geologist—PA, GA, FL, NC, SC & TN
NJDEP UST Subsurface Evaluation

PROFESSIONAL EXPERIENCE:

Mr. McCloskey has over 20 years of experience in a variety of geological investigations and actions, technical report preparation and project management activities. This experience includes proposal and technical report writing, site history research, preparation and implementation of site sampling and remediation plans, and direct project interface with clients, attorneys, subcontractors, internal personnel and regulatory agency representatives. He has gained this experience in a variety of areas including geotechnical investigation, groundwater development, and environmental investigation and remediation. The majority of his experience has been in environmental consulting. The following projects are representative of his experience:

- **Technical Consultant to Special Master, U.S. District Court-Ordered Remediation, Honeywell Study Area 7, Jersey City, NJ.** Initially served as project manager, and subsequently as technical reviewer, for the Berger team that was selected as technical consultant to Special Master, Senator Robert G. Torricelli. The Special Master was appointed by the federal judiciary to oversee all aspects of Honeywell International's compliance with a Court Order to remediate chromium contamination caused by historic disposal of Chromium Ore Processing Residue (COPR) into former tidal flats of the Hackensack River. The case was brought against Honeywell by The Interfaith Community Organization, a Jersey City, group made up of various churches. The cleanup, which is estimated to cost in excess of \$400 million, includes (1) excavation of one million cubic yards of COPR over the 34-acre site expanse; (2) investigation and remediation of chromium-contaminated sediments in the Hackensack River; and (3) investigation and remediation of a bedrock groundwater plume, as appropriate
 - **Century Geophysical Corporation, Tulsa, OK.** As geologist, operated a computerized borehole logging vehicle during exploration for uranium, oil, and gas. Assisted with interpretation of the data obtained. The work included operation and logging, instrument maintenance and repair, use of downhole conventional tools, and use of downhole nuclear sources. Clients included Chevron, Mobil, Anaconda, Conoco and Tenneco.
 - **US Army Corps of Engineers, Phoenix, Maryland.** Senior Technical Geologist responsible for directing characterization of chlorinated solvent groundwater plume at a former military reservation. Current activities include evaluation of previous investigation and remediation activities, fate and transport analysis of the identified groundwater contamination, and development of supplemental activities to support a natural attenuation scenario.
 - **US Army Corps of Engineers, Kansas City District, Fort Riley, KS.** Project Manager responsible for hydrogeological evaluation of a former ordnance open burn/open detonation site. Project includes characterization of the movement of groundwater and dissolved chlorinated solvents through the underlying limestone formations.
 - **Peppers Steel and Alloy, Medley, FL.** As a consulting geologist, observed and recorded portions of a subsurface field investigation of PCB-contaminated oil performed by USEPA contractors at the Peppers Steel and Alloy Superfund site. Participated in preparation of reports for the client, Florida Power and Light.
-

- **Cape May County, NJ.** As staff geologist, participated in a geotechnical investigation for a proposed sewage treatment plant and pipeline. Activities included lithological logging of numerous borings, including many sediment collection conducted in the intercoastal waterway from a barrel float.

 - **US Navy CLEAN Contract, Several Sites, USA.** Senior Remedial Investigation (RI) Geologist and Lead Author responsible for initial field investigations, data included soil gas survey, surface and subsurface (soil borings) soil sampling, groundwater monitoring well installation, and groundwater sampling. Data evaluation included interpretation of the site hydrogeology, the nature and extent of contamination, and contaminant fate and transport employing batch flush and transport modeling.
 - √ US Navy, Jacksonville, FL. As Senior Remedial Investigation (RI) Scientist and Lead Author, was responsible for data evaluation and preparation of the RI Report for Operable Unit (OU) 7 at Cecil Field Naval Air Station. Data evaluation included interpretation of the site hydrogeology, the nature and extent of contamination, and contaminant fate and transport employing batch flush and transport modeling.

 - √ US Navy, Albany, GA. As Senior Remedial Investigation (RI) Scientist, was responsible for the implementation of the initial field investigation at Operable Unit (OU) 4 at the Marine Corps Logistics Base (MCLB), Albany, Georgia. The initial field investigation included soil gas survey, surface and subsurface (soil borings) soil sampling, groundwater monitoring well installation, and groundwater sampling. After five months onsite at Albany, spent four months as lead for the preparation of Remedial Investigation / Risk Assessment Report for OU 1&2.

 - √ US Navy, Charleston, SC. As Technical Lead, was responsible for completion of a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Workplan for three Solid Waste Management Units (SWMUs) at Naval Weapons Station (NWS) Charleston.

 - √ US Navy, Meridian, MS. As Technical Lead, was responsible for completion of the Site Investigation (SI) field effort at ten sites on Naval Air Station (NAS) Meridian and was the lead for the preparation of the SI Report of these activities and their results.

 - √ U.S. Navy, Charleston, SC. As a member of a four person team, participated in Hazard Ranking System (HRSII) scoring for naval facilities. The scoring required collection and review of data, site visits to 50 areas on two facilities, and preparation of a detailed report. The USEPA PreScore software package was utilized to develop the scores

 - **Prince William County, VA.** As staff geologist, was responsible for implementation of groundwater development investigations in Manassas and Quantico, Virginia. Supervised well drilling, monitored groundwater yield with depth, and performed downhole geophysical logging upon completion of the well boreholes. Conducted aquifer pump test and participated in data reduction and preparation of the report of results.

 - **Virginia Beach County, VA.** As staff geologist, participated in a groundwater development investigation. Performed surface resistivity geophysical survey, supervised installation of production and observation wells, sampled wells, and participated in 72 hour aquifer pump tests. Was responsible for the downhole geophysical logging of each well. Initially performed the logging with a small digital unit, then prepared a cost efficiency analysis to justify the subcontract of a computerized logging firm to service the six drill rigs scattered throughout the county. Supervised and coordinated the downhole geophysical logging program, designed well logs to display correlated lithological and geophysical data, and participated in preparation of the report of results.
-

- **Exxon Research and Development, Clinton, NJ.** As staff geologist, participated in inspection and monitoring of subsurface construction activities for a research and development facility. Inspected the bottom of caisson coreholes and prepared reports prior to approval of concrete pour. The coreholes averaged 30 inches in diameter and were up to 75 feet deep. Also monitored the blasting of bedrock using a seismograph to document the results, and supervised soil boring and rock drilling.
- **New Jersey Turnpike Authority, On-Call Soil and Groundwater Remedial Investigations and Remedial Systems Designs Contract.** RI Project Manager responsible for oversight of remedial investigations. Initially reviewing and evaluating the previous investigations of gasoline releases at two service areas to determine supplemental investigations needs to allow completion of remedial action workplans.
- **New Jersey Department of Environmental Protection, RI/RASE Publicly Funded Term Contract.** Project Manager. Currently managing remedial investigations (RI) to address contamination and owner non-compliance issues at numerous industrial sites. Work includes facility audits/assessments, required development of workplans (including detailed health and safety plans), fieldwork and investigations, preparation of RI reports and remedial action recommendations. Issues being addressed on current assignments include USTs/ASTs, solvent and fuel contaminated groundwater, and PCB soil contamination.
- **Corporate Complex Siting, Mt. Arlington, NJ.** As project geologist, was responsible for implementation of a field investigation for the siting of a wastewater disposal area for a proposed corporate complex. The investigation included the excavation of test pits up to 30 feet deep, soil borings, rock coring, installation of monitoring wells, and permeability testing of these wells. Participated in the preparation of the report of results, including identification of the soil and rock encountered, and indication of the depth to bedrock and groundwater.
- **New Jersey Transit, General Engineering Consultant Program – Environmental Engineering Services Contract.** Task Manager for oversight and implementation of due diligence, site investigation and remediation at rail, bus and maintenance facilities throughout the state of New Jersey.
- **New Jersey Department of Transportation, RI and RAW Projects, Newark and Elizabeth.** Senior Geologist responsible for the development and implementation of investigation workplan for contaminated sites in right-of-way corridors for three different highway projects. Includes development of remedial alternatives and workplans in support of highway design.
- **Industrial Facility, Passaic, NJ.** Project Manager responsible for development and implementation of an ECRA site investigation and preparation of an ECRA cleanup plan for a 100-year-old industrial facility. The investigation included innovative rapid screening analysis to efficiently delineate the limits of soil/sediment contamination, and groundwater pump testing to define the aquifer characteristics. The cleanup plan introduced risk evaluation to limit the remediation required.
- **Industrial Facility, Chatham, NJ.** As senior geologist and project manager, was responsible for implementing an ECRA site investigation and remediation at an industrial facility. The investigation included soil sampling and installation and sampling of groundwater monitoring wells. The remediation included soil removal. Approval was obtained for reuse of the soil as landfill cover, substantially reducing cleanup costs. A case for no further action regarding groundwater was presented and approved by the NJDEPE based on local groundwater use. The case was certified complete by the NJDEPE. Served as an expert in a legal suit regarding the contamination of the site.
- **Major Oil Corporation, Hamilton Township, NJ.** As senior geologist and project manager, was responsible for performance of a preliminary environmental assessment at a petroleum storage and transfer terminal. The assessment included research of site history, and definition of and regional geology, and hydrogeology. A field investigation was also conducted to identify any free product in the subsurface. The field investigation included



the installation of monitoring wells to determine groundwater flow direction and identify any free product on the water table. Performed a detailed report of the preliminary assessment in the format required by the client.

- **Phase I Site Assessments.** As senior geologist and project manager, conducted several Phase I site assessments for major financial institutions. These pre-transaction assessments to identify areas of potential concern included records search, interviews, site inspection and preparation of a report. During these rapid turnaround assessments, was responsible for maintaining close communication with the client and establishing communication with required information sources. Performed Tier I site assessments in New Jersey, North Dakota, South Dakota, Kansas, Mississippi and Arkansas.
 - **Industrial Facility, Franklin Township, NJ.** As a project geologist, initially participated in the preparation of ECRA sampling plans and cleanup plan for the wire extruding facility. In preparation of the plan, researched site history, site operations, and site setting. Was responsible for field implementation of the plans, which included soil sampling, monitoring well installation, and groundwater sampling as well as soil excavation and removal. During the investigation, documented high levels of petroleum hydrocarbons in geologic lake bed deposits near the site. Eventually assumed full responsibility for the project management, and prepared technical reports, including the final cleanup report. Negotiated site requirements with the NJDEP through correspondence and formal meetings. Completed the ECRA compliance process for the site by obtaining NJDEP approval of the site cleanup.
 - **Industrial Park, Mount Bethel, NJ.** As project geologist, initially participated in the preparation of ECRA sampling plans and cleanup plan for this industrial park facility. In preparation of the plans, researched site history, site operations, and site setting. Responsible for the field implementation of the plans, which included soil sampling, monitoring well installation and groundwater sampling. Eventually assumed full responsibility for the project management and prepared technical reports of results and negotiated site requirements with the NJDEP through correspondence and formal meetings.
 - **Industrial Facility, Matawan, NJ.** As project geologist, initially participated in the preparation of ECRA sampling plans for this metals manufacturing facility. In preparation of the plans, researched site history, site operations, and site setting. Was responsible for the field implementation of the plans, which included soil sampling. Eventually assumed full responsibility for the project management and prepared technical reports and negotiated site requirements with the NJDEP through correspondence and formal meetings.
 - **Landfill Siting Investigation, Hunterdon County, NJ.** As project geologist, was responsible for implementation of a field investigation phase for a landfill siting. The field investigation included soil borings rock coring and test pit excavation. Prepared a report of findings including identification of soils and rock encountered and indication of depth to rock and groundwater.
 - **Ocean County Facility, Stafford Township, NJ.** As project geologist, was responsible for implementation of a field investigation for methane buildup beneath a community services facility. The investigation included the installation of gas wells in the area around the facility. Measurements included on-site analysis of methane, oxygen and carbon dioxide with a tri-meter and monitoring of these parameters during vacuum extraction tests to determine the aerial influence of the subsurface gas evacuation process. Also sampled gas wells for laboratory analysis. Participated in preparation of the report of results.
 - **Monroe Township Municipal Utilities Authority, Monroe Township, NJ.** As project geologist, was responsible for implementation of a groundwater investigation to determine the extent of contamination in relation to public supply wells. The field investigation included installation of monitoring wells and groundwater sampling. During installation of the wells, analyzed soil samples from the borehole with an OVA gas chromatograph (GC). A sample of the suspected contaminant was obtained prior to the field investigation, and analyzed with the OVA GC to identify its position on the chromatograph. Participated in the preparation of the report of results.
-



- **Passaic County Vocational School, Wanaque, NJ.** As project geologist, was responsible for implementation of a field investigation of methane gas buildup beneath a partially constructed school. The investigation included installation of gas wells within and around the structure. Measurements included on-site analysis of methane, oxygen and carbon dioxide with tri-meter, gas sampling for lab analysis, and measurement of vacuum influence beneath the building slab. Participated in preparation of the report of results and obtained costs for the components of a proposed remedial system.
- **Jackson Township Landfill, Jackson Township, NJ.** As staff geologist, participated in the field investigation of a landfill Superfund site. Activities included surface resistivity, geophysical survey, installation of monitoring wells, groundwater sampling, and survey of surrounding potable wells.
- **Brownfields Site Remedial Investigation, Dover, NJ.** Technical Manager for remedial investigation of a former municipal landfill slated for flex-building development. Responsible for technical approach to address contamination issues and strategizing and expediting communication with the regulatory agencies for modification and approval of such approach.
- **Air Force Center for Environmental Excellence, McGuire AFB.** Senior Geologist/Hydrogeologist for multiple sites investigation, focused feasibility studies and treatability studies at McGuire AFB, New Jersey. Responsibilities include site characterization based on evaluation and interpretation of the analytical data and hydrogeological conditions at each site. One site is impacted by approximately 400,000 gallons of jet fuel on the water table.
- **New Jersey Turnpike Authority, General Environmental Consultant Contract.** Project Geologist. Oversee investigators working on corridor screenings and environmental constraints analysis for Hudson County Extension widening and new Interchange I2A/I2.
- **Deluxe Corporation, Industrial Facilities, Clifton, NJ and Paoli, PA.** Project Manager responsible for hydrogeological characterization of an ISRA site investigation and remediation on a site underlain by overburden and bedrock geology. Computer modeling was employed to estimate the current and future extent of contamination. Pump testing was conducted to refine an existing pump and treat groundwater remediation system.

GEOTECHNICAL INVESTIGATION REPORT

RESULTS OF LABORATORY TESTING

**DDC INFRASTRUCTURE PROJECT
RELOCATION OF DOT PAINT WAREHOUSE
424 WYTHE AVENUE
BROOKLYN, NEW YORK**

**NYCDDC Project No.: HWKF029B
SES No.: 4001, J-3469
Work Order No.: 8430-TEC-3-R-8015
Contract Registration No.: 20111435761**

Prepared for:



**Division of Safety & Site Support
Bureau of Environmental and Geotechnical Services
30-30 Thomson Avenue
Long Island City, NY 11101**

Prepared by:
Tectonic Engineering & Surveying
29-16 40th Avenue
Long Island City, New York 11101

November 15, 2012

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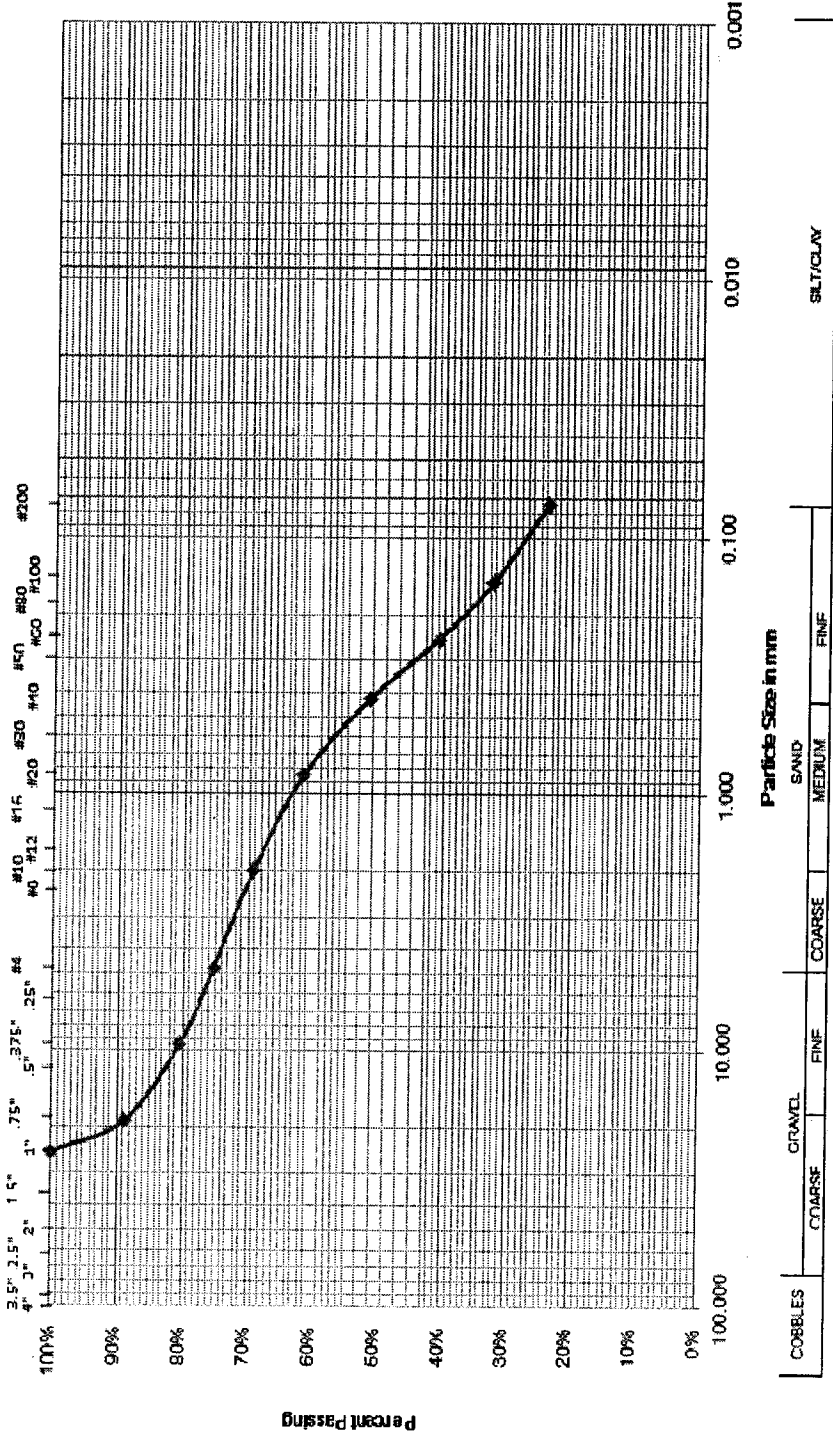
SUMMARY OF LABORATORY ANALYSIS OF SOILS

BORING NO.	SAMPLE NO.	DEPTH Feet	D100 mm	D60 mm	D30 mm	D10 mm	% GRAVEL > SIEVE # 4	% SAND	% SILT OR CLAY < SIEVE # 200	USCS SYMBOL	WATER CONTENT %	Cc	Cu	LL	PL	PI
B-1	S-2	10.0	-	-	-	-	-	-	-	CL-ML	-	-	-	24	18	6
B-1	S-4	20.0	9.5	0.310	0.175	-	0.9	85.5	13.6	SM	17.0	-	-	-	-	-
B-1	S-6	30.0	25.0	0.750	0.140	-	24.8	51.3	23.9	SM	11.1	-	-	-	-	-
B-2	S-3	15.0	-	-	-	-	-	-	-	ML	-	-	-	21	18	3
B-2	S-4	20.0	25.0	0.260	0.085	-	16.0	57.4	26.6	SM	20.4	-	-	-	-	-
B-2	S-5	25.0	37.5	0.610	0.160	-	22.6	58.3	19.1	SM	11.2	-	-	-	-	-
B-2	S-8	40.0	9.5	0.400	0.280	0.120	0.8	92.1	7.1	SP-SM	19.7	1.633	3.333	-	-	-
B-3	S-3	15.0	-	-	-	-	-	-	-	ML	-	-	-	NP	15	NP
B-3	S-4	20.0	-	-	-	-	-	-	-	CL	-	-	-	14	15	9
B-3	S-5	25.0	25.0	1.000	0.180	-	27.8	52.5	19.7	SM	10.1	-	-	-	-	-
B-3	S-6A	30.0	37.5	0.560	0.135	-	19.8	57.8	22.4	SM	11.4	-	-	-	-	-
B-3	S-9	45.0	19.0	0.590	0.300	0.150	7.8	86.7	5.5	SP-SM	15.3	1.017	3.933	-	-	-
B-4	S-2	10.0	-	-	-	-	-	-	-	CL-ML	-	-	-	22	17	5
B-4	S-3	15.0	25.0	0.680	0.135	-	23.9	52.7	23.4	SM	10.9	-	-	-	-	-
B-4	S-7	35.0	9.5	0.500	0.280	0.100	2.9	89.2	7.9	SP-SM	15.6	1.568	5.000	-	-	-

ASTM D 422 Particle Size Analysis of Soils

W.O.#: 5192.01 SES # 4001
 Date Tested: 10/30/12
 Date Sampled: 10/16/12
 Sample Source: Boring B-1
 Sample ID: B1-S6
 Depth: 30' - 32'
 Description: F-M, Br SAND, some Gravel, some SILT/clay

ASTM D422 Particle Size Analysis SES# 4001 121 Plymouth Reblock to 424 Wythe Ave Sample B-1 S-6



GRAVEL	24.8%
SAND	51.3%
SILT/CLAY	23.9%

MOISTURE CONTENT	
Cc	11.1%
Cu	

D100	25.000
D60	0.750
D30	0.140
D10	0.000

Component	Sieve Size	% Passing
Coarse Gravel	3"	
	2.5"	
	2"	
Fine Gravel	1.5"	
	1"	100.0%
	3/4"	88.8%
Coarse Sand	1/2"	
	3/8"	80.3%
	1/4"	
Medium Sand	no. 4	75.2%
	no. 8	69.2%
	no. 10	
	no. 12	
	no. 16	
	no. 20	61.7%
Fine Sand	no. 30	
	no. 40	51.4%
	no. 50	
	no. 60	40.9%
SILT/CLAY	no. 80	32.4%
	no. 100	23.9%
	no. 200	

GRAVEL	% of Sample
% COARSE	11.2%
% FINE	13.6%
TOTAL GRAVEL	24.8%

SAND	% of Sample
% COARSE	6.0%
% MEDIUM	17.8%
% FINE	27.5%
TOTAL SAND	51.3%

ASTM D 422 Particle Size Analysis of Soils



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28-16 40th Ave. Long Island City NY, 11101

W.C.#: 5192.01 SES # 4001
Date Tested: 10/30/12
Date Sampled: 10/18/12

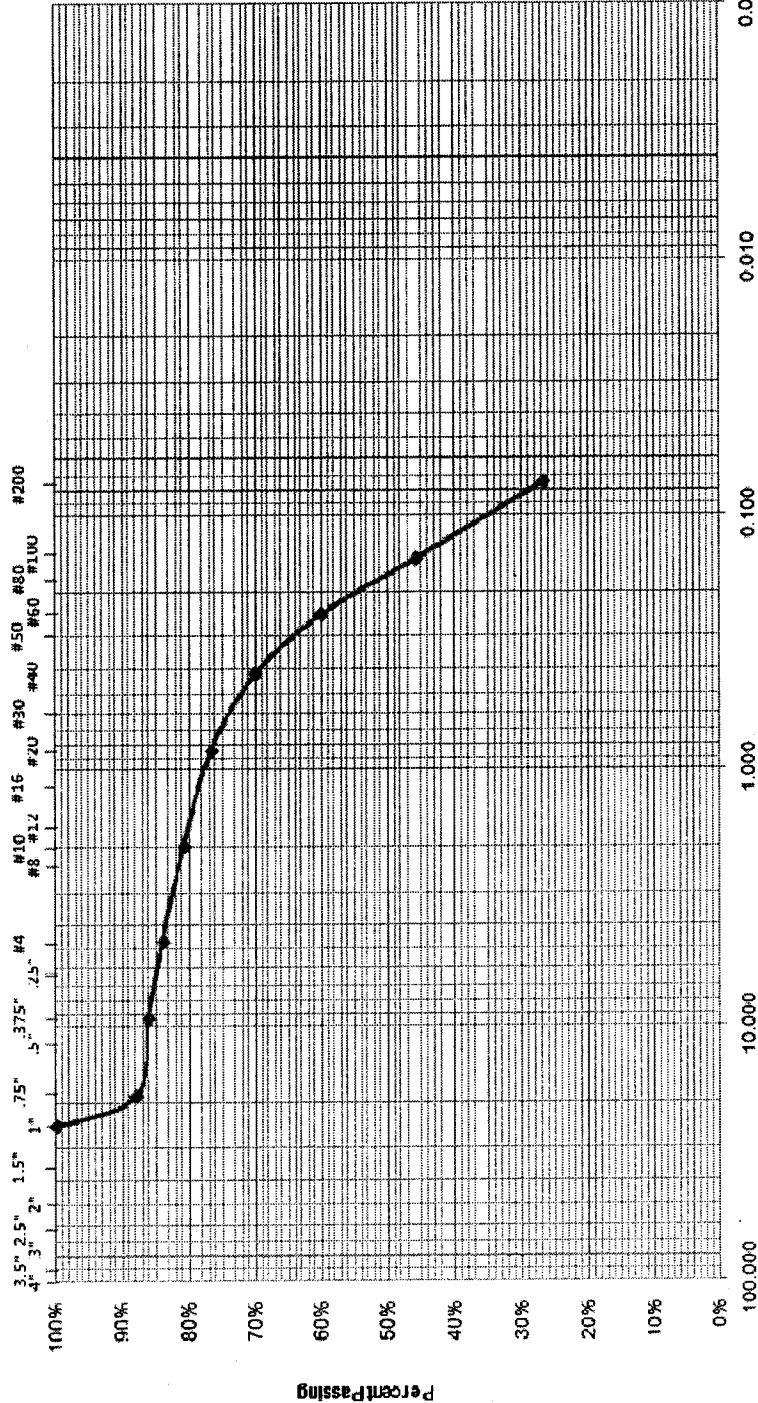
Sample Source: Boring B-2

Sample ID: B2-S4

Depth: 20' - 22'

Description: F-M Brn SAND, some Silt/Clay, little Gravel

ASTM D422 Particle Size Analysis SES# 1001 121 Plymouth Relocation to 124 Wythe Ave Sample B-2-S-4



ASTM D 422 Particle Size Analysis of Soils

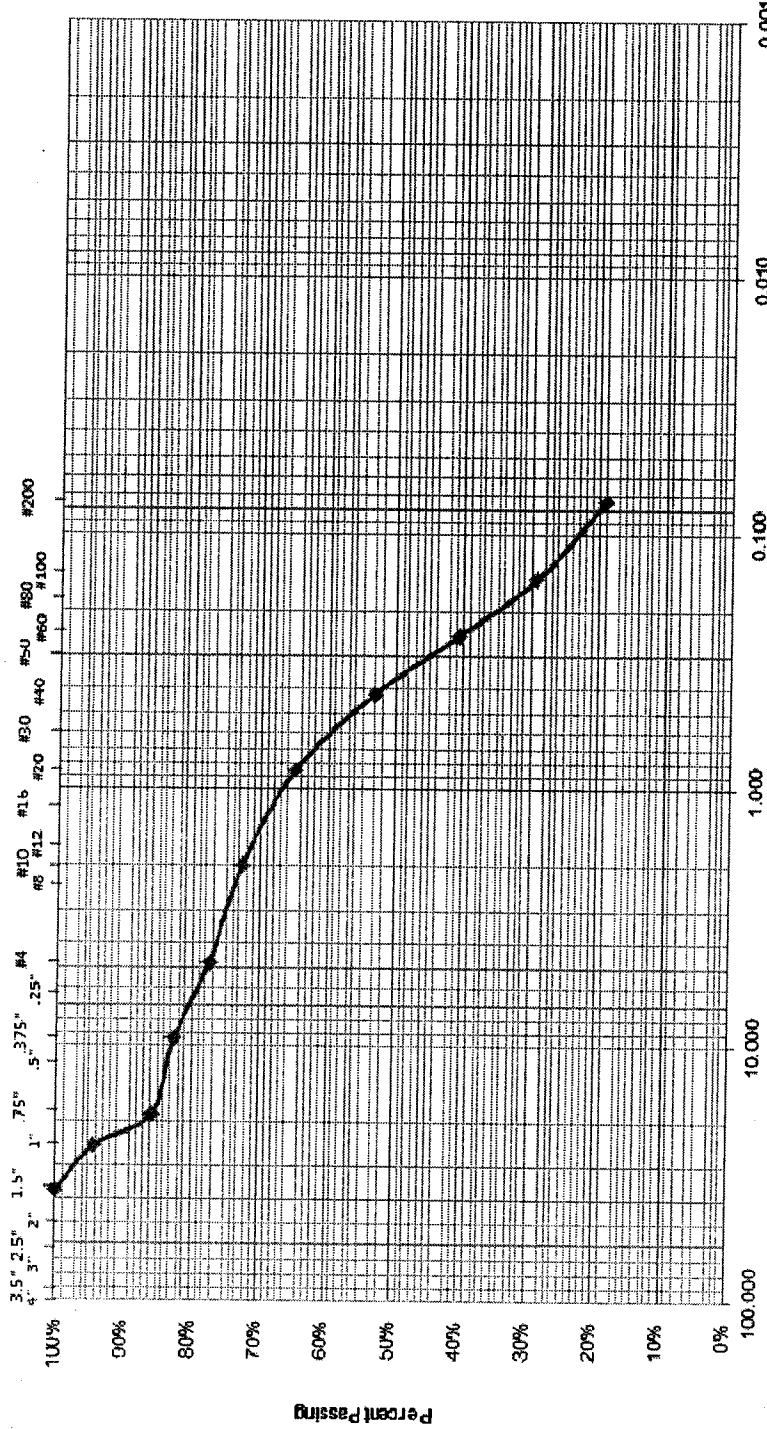
TECTONIC

Practical Solutions & Professional Services
29-16 40th Ave, Long Island City NY, 11101

W.O.#: 5192.01 SES # 4001
Date Tested: 10/30/12
Date Sampled: 10/18/12
Sample Source: Boring B-2
Sample ID: B2-S5
Depth: 25' - 27'

Description: F-1/8m SAND, some Gravel, little Silt/Clay

ASTM D422 Particle Size Analysis SES# 4001 121 Plymouth Rd relocation to 424 Wythe Ave Sample B 2 S 5



COBBLES	GRAVEL			SAND			SILT/CLAY		
	COARSE	COARSE	FINE	COARSE	MEDIUM	FINE			

GRAVEL	22.6%
SAND	58.3%
SILT/CLAY	19.1%

MOISTURE CONTENT	
Cc	11.2%
Cu	

D100	37.500
D60	0.610
D30	0.160
D10	0.000

Component	Sieve Size	% Passing
Coarse Gravel	3"	
	2.5"	
	2"	
Fine Gravel	1.5"	100.0%
	1"	94.4%
	3/4"	85.9%
	3/8"	82.6%
Coarse Sand	1/4"	
	no. 4	77.4%
	no. 8	72.7%
Medium Sand	no. 10	
	no. 12	
	no. 16	
	no. 20	65.0%
	no. 30	
Fine Sand	no. 40	53.1%
	no. 50	
	no. 60	40.5%
	no. 80	
	no. 100	29.2%
Silt/Clay	no. 200	19.1%

GRAVEL	% of Sample
% COARSE =	14.1%
% FINE =	8.5%
TOTAL GRAVEL =	22.6%

SAND	% of Sample	% of Sand
% COARSE =	4.7%	8.1%
% MEDIUM =	19.6%	33.6%
% FINE =	34.0%	56.2%
TOTAL SAND =	58.3%	100.0%

ASTM D 422 Particle Size Analysis of Soils



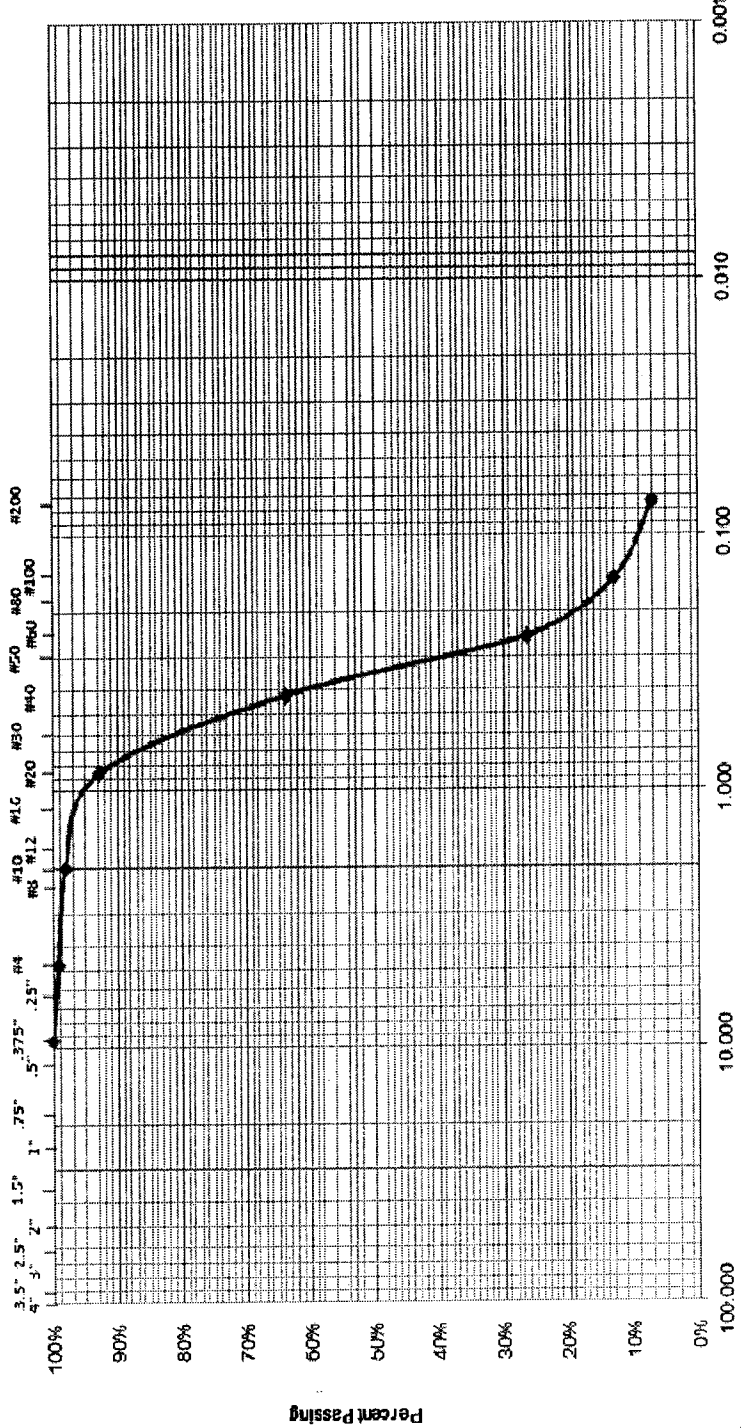
W.O.#: 5192.01 SES # 4001
 Date Tested: 10/30/12
 Date Sampled: 10/18/12

Sample Source: Boring B-2
 Sample ID: B2-S8
 Depth: 40' - 42'

Description: F-M Br SAND, trace Silt/Clay

ASTM D422 Particle Size Analysis

SFS# 4001 121 Plymouth Reformation in 424 Wythe Ave Sample: B-2 S-8



COBBLES		GRAVEL		SAND		SILT/CLAY	
COARSE	FINE	COARSE	FINE	COARSE	FINE	COARSE	FINE

GRAVEL	0.8%
SAND	92.1%
SILT/CLAY	7.1%

MOISTURE CONTENT	
Cc	1.633
Cu	3.333

D100	9.500
D60	0.400
D30	0.280
D10	0.120

Component	Sieve Size	% Passing
Coarse Gravel	3"	
	2.5"	
	2"	
Fine Gravel	1.5"	
	1"	
	3/4"	
Medium Sand	1/2"	
	3/8"	100.0%
	1/4"	
	no. 4	99.2%
Coarse Sand	no. 8	
	no. 10	98.1%
	no. 12	
Fine Sand	no. 16	
	no. 20	92.8%
	no. 30	
	no. 40	63.8%
Silt/Clay	no. 50	
	no. 60	26.3%
	no. 80	12.9%
	no. 100	7.0%
	no. 200	

GRAVEL	% of Sample
% COARSE =	0.0%
% FINE =	0.8%
TOTAL GRAVEL =	0.8%

SAND	% of Sample	% of Sand
% COARSE =	1.0%	1.1%
% MEDIUM =	34.3%	37.3%
% FINE =	56.8%	61.6%
TOTAL SAND =	92.1%	100.0%

ASTM D 422 Particle Size Analysis of Soils



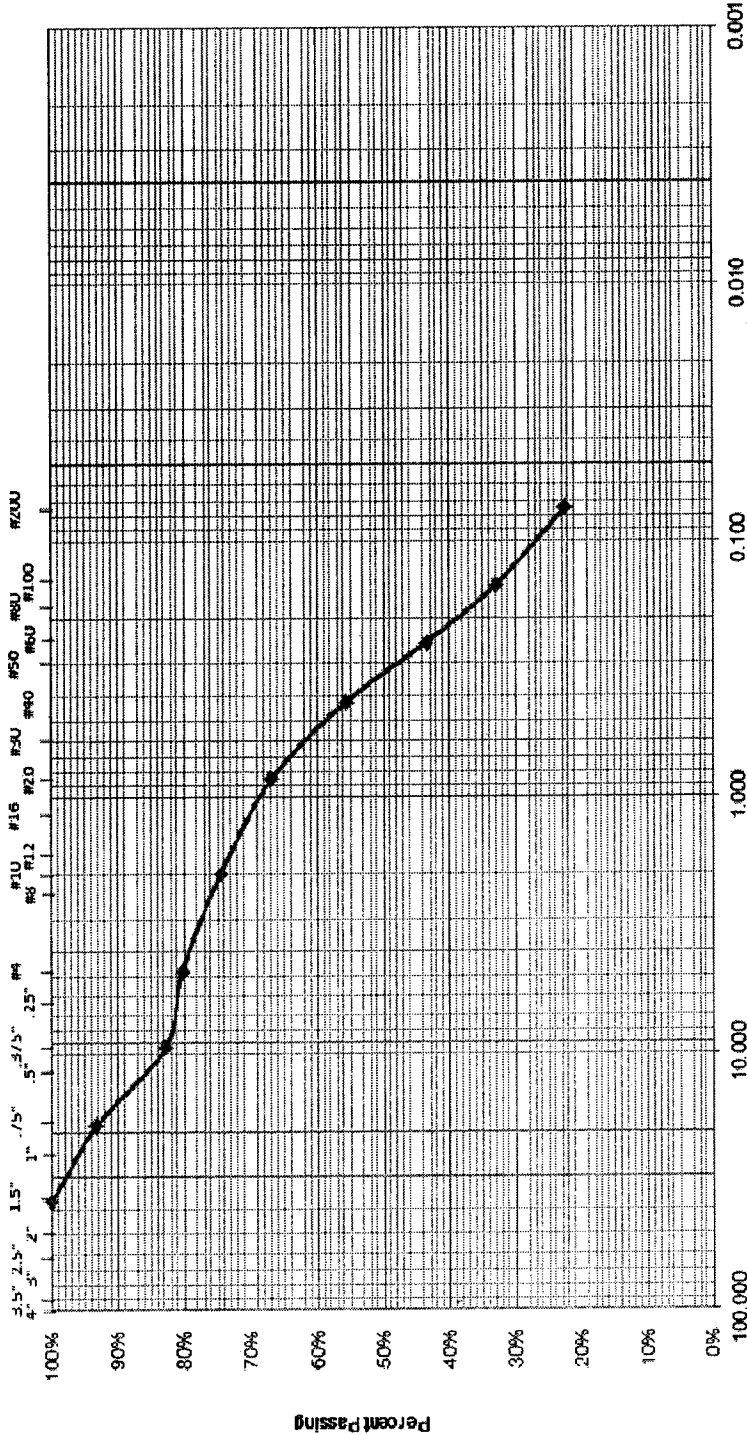
TECTONIC
 29-16 40th Ave, Long Island City NY, 11101

W.O.#: 5192.01 SES # 4001
 Date Tested: 10/30/12
 Date Sampled: 10/18/12

Sample Source: Boring B-3
 Sample ID: B3-S6A
 Depth: 30' - 32'

Description: F-M Bm SAND, some SiltyClay, little Gravel

ASTM D422 Particle Size Analysis SES# 4001 121 Plymouth Rd. to 424 Wylie Ave Sample B-3-S-6A



COBBLES	GRAVEL		SAND		SILT/CLAY
	COARSE	FINE	COARSE	FINE	

GRAVEL	19.8%
SAND	57.8%
SILT/CLAY	22.4%

MOISTURE CONTENT	
Cc	11.4%
Cu	

D100	37.500
D60	0.560
D30	0.135
D10	0.000

Component	Sieve Size	% Passing
Coarse Gravel	3"	
	2.5"	
	2"	
	1.5"	100.0%
Fine Gravel	1"	
	3/4"	93.2%
	1/2"	
	3/8"	82.8%
Coarse Sand	1/4"	
	no. 4	80.2%
	no. 8	
	no. 10	74.5%
Medium Sand	no. 12	
	no. 16	
	no. 20	66.9%
	no. 30	
Fine Sand	no. 40	55.6%
	no. 50	
	no. 60	43.4%
	no. 80	
	no. 100	32.9%
	no. 200	22.4%
Silt/Clay		

GRAVEL	% of Sample
% COARSE =	6.8%
% FINE =	13.0%
TOTAL GRAVEL =	19.8%

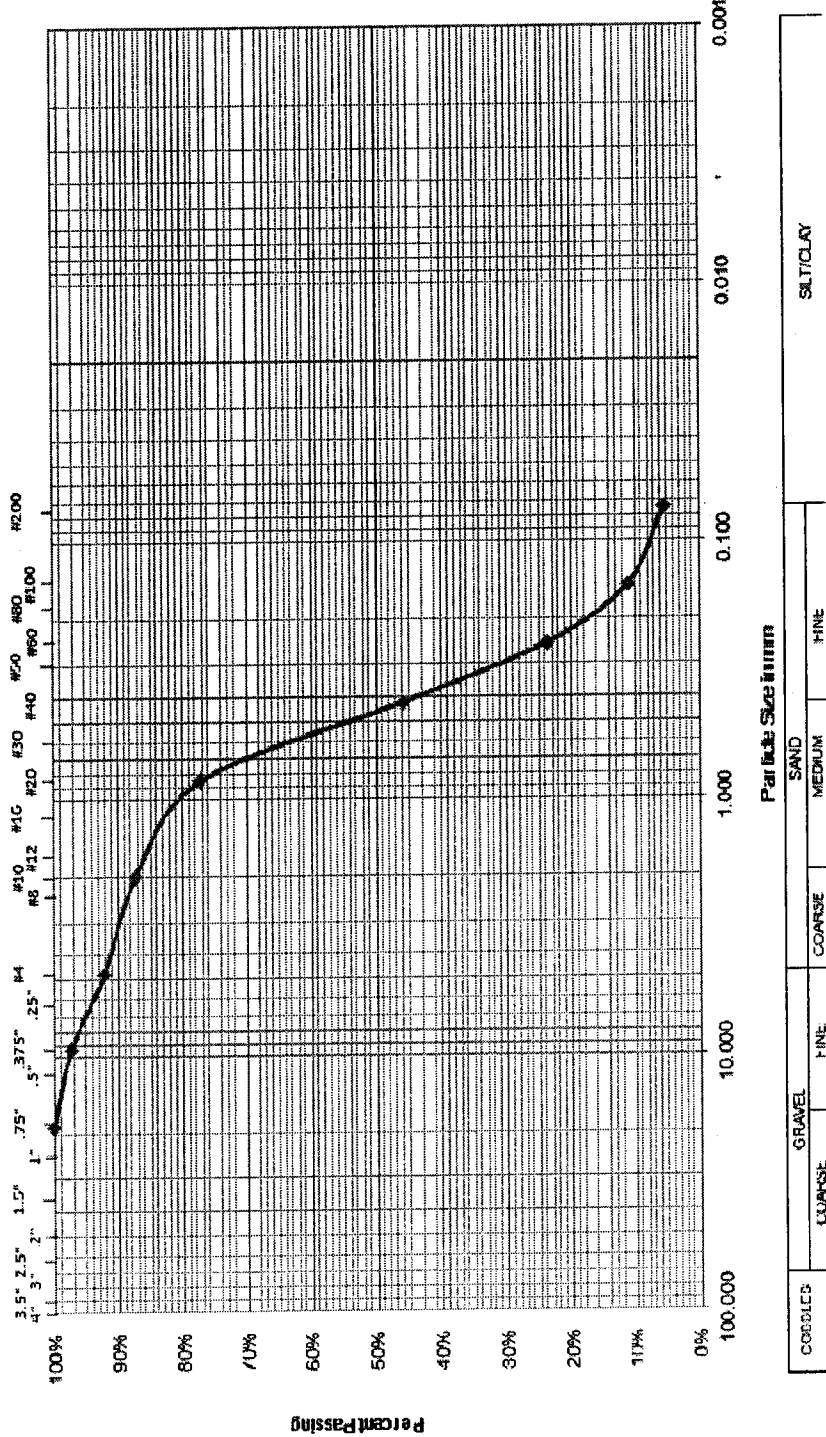
SAND	% of Sample	% of Sand
% COARSE =	5.7%	9.8%
% MEDIUM =	18.9%	32.8%
% FINE =	33.2%	57.4%
TOTAL SAND =	57.8%	100.0%

ASTM D 422 Particle Size Analysis of Soils

W.O.#: 5192.01 SES # 4001
 Date Tested: 10/30/12
 Date Sampled: 10/18/12
 Sample Source: Boring B-3
 Sample ID: B3-S9
 Depth: 45' - 47'

Description: F-M Brn SAND, trace Gravel, trace Silt/Clay

ASTM D422 Particle Size Analysis SES# 4001 121 Plymouth Road to 424 Wylie Ave Sample B-3-S-9



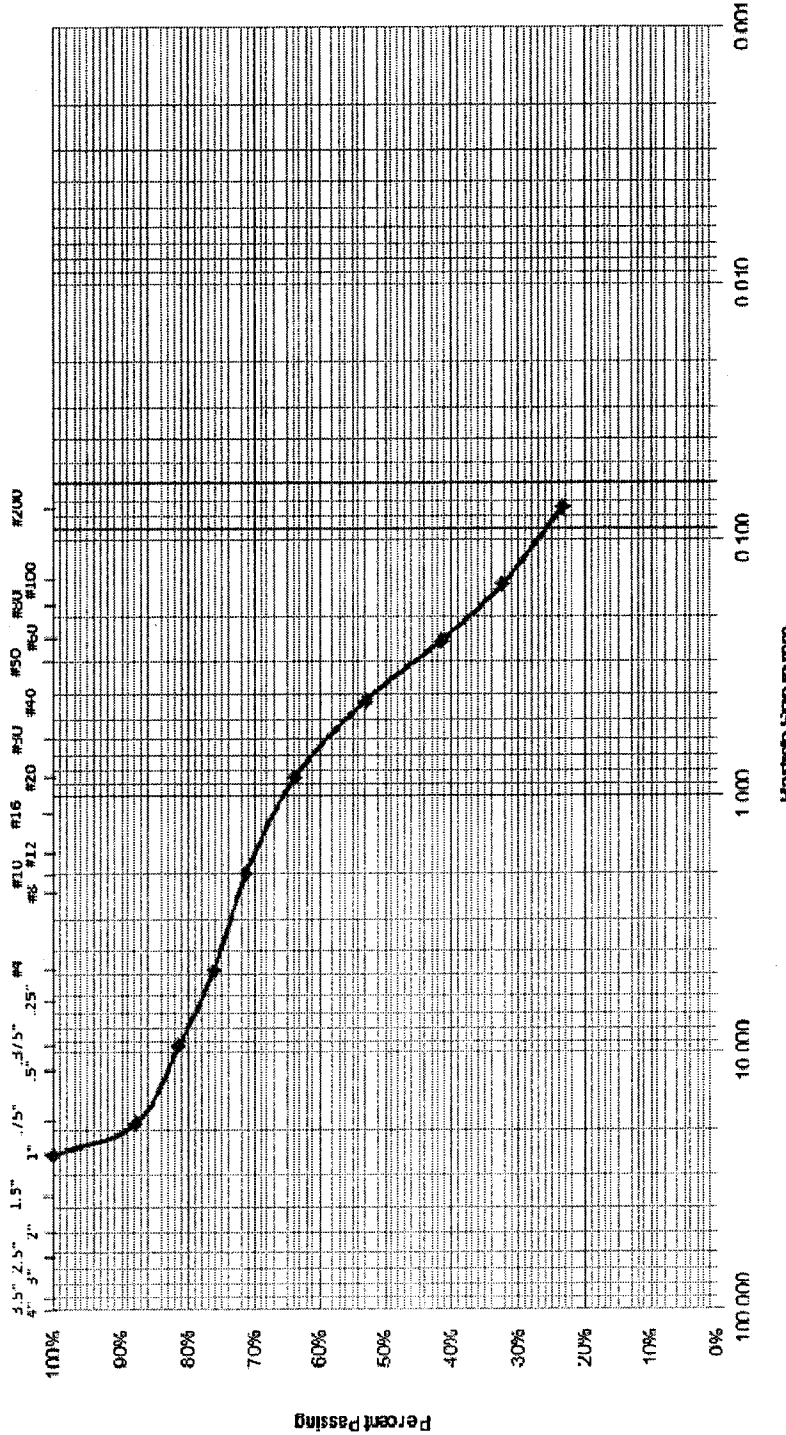
ASTM D 422 Particle Size Analysis of Soils



W.Q.#: 5192.01 SES # 4001
 Date Tested: 10/30/12
 Date Sampled: 10/16/12

Sample Source: Boring B-4
 Sample ID: B4-S3
 Depth: 15' - 17'

ASTM D422 Particle Size Analysis
 SES# 4001 121 Plymouth Relocation to 424 Wythe Ave Sample B-4 S-3



COARSE	FINE	COARSE	FINE	SAND	SILT/CLAY
GRAVEL					

GRAVEL	23.9%
SAND	52.7%
SILT/CLAY	23.4%

MOISTURE CONTENT	
Cc	10.9%
Cu	

D100	25.000
D60	0.680
D30	0.135
D10	0.000

Component	Sieve Size	% Passing
Coarse Gravel	3"	
	2.5"	
	2"	
Fine Gravel	1.5"	
	1"	100.0%
	3/4"	87.8%
Coarse Sand	1/2"	
	3/8"	81.4%
	1/4"	
Medium Sand	no. 4	76.1%
	no. 8	
	no. 10	71.3%
	no. 12	
	no. 16	
	no. 20	63.8%
Fine Sand	no. 30	
	no. 40	52.9%
	no. 50	
	no. 60	41.5%
Silt/Clay	no. 80	
	no. 100	32.4%
	no. 200	23.4%

GRAVEL	% of Sample
% COARSE =	12.2%
% FINE =	11.7%
TOTAL GRAVEL =	23.9%

SAND	% of Sample	% of Sand
% COARSE =	4.9%	9.2%
% MEDIUM =	18.3%	34.8%
% FINE =	29.5%	56.0%
TOTAL SAND =	52.7%	100.0%

ASTM D 422 Particle Size Analysis of Soils

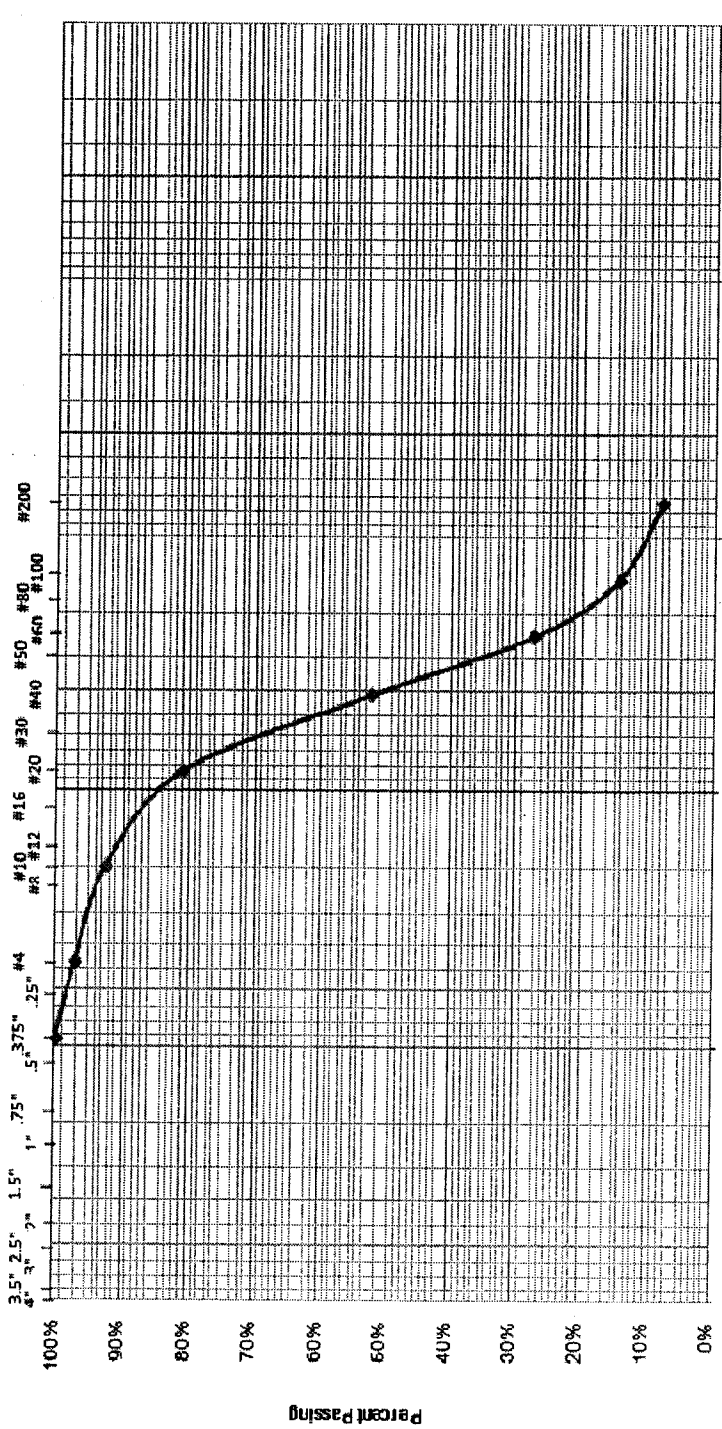


29-16 40th Ave., Long Island City, NY, 11101

W.O.#: 5192.01 SES # 4001
 Date Tested: 10/30/12
 Date Sampled: 10/17/12
 Sample Source: Boring B-4
 Sample ID: B4-S7
 Depth: 35' - 37'

Description: F-M Brn SAND, trace Silt/Clay, trace Gravel

ASTM D122 Particle Size Analysis SES# 4001 121 Plymouth Relocation to 424 Wythe Ave Sample B-4 S-7



COBBLES		GRAVEL		SAND		SILT/CLAY	
COARSE	FINE	COARSE	FINE	COARSE	MEDIUM	FINE	

GRAVEL	2.9%
SAND	89.2%
SILT/CLAY	7.9%

MOISTURE CONTENT	
Cc	15.6%
Cu	1.568
Cu	5.000

D100	9.500
D60	0.500
D30	0.280
D10	0.100

Component	Sieve Size	% Passing
Coarse Gravel	3"	
	2.5"	
	2"	
	1.5"	
Fine Gravel	1"	
	3/4"	
	1/2"	
	3/8"	100.0%
Coarse Sand	1/4"	
	no. 4	97.1%
	no. 8	
	no. 10	92.5%
Medium Sand	no. 12	
	no. 16	
	no. 20	80.8%
	no. 30	
Fine Sand	no. 30	
	no. 40	62.2%
	no. 50	
	no. 60	27.3%
Silt/Clay	no. 80	
	no. 100	14.5%
	no. 200	7.9%

GRAVEL	% of Sample
% COARSE =	0.0%
% FINE =	2.9%
TOTAL GRAVEL =	2.9%

SAND	% of Sample
% COARSE =	4.6%
% MEDIUM =	40.2%
% FINE =	44.3%
TOTAL SAND =	89.2%
% of Sand	5.2%
	45.1%
	49.7%
	100.0%

THE NATIONAL
DEPARTMENT OF
DEFENSE

MEMORANDUM FOR THE SECRETARY OF DEFENSE
SUBJECT: [Illegible]

[Illegible]

ADDITIONAL

CONSIDERATION

[Illegible]

[Illegible]

[Illegible]

[Illegible]

[Illegible]

[Illegible]

[Illegible]

[Illegible]

[Illegible]

[Illegible]

[Illegible]

FMS ID: HWKF029B



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

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

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

CONTRACT NO. 1 GENERAL CONSTRUCTION WORK

121 Plymouth Paint Warehouse Relocation to 424 Wythe Building Construction

LOCATION: 424 Wythe Avenue
BOROUGH: Brooklyn 11211
CITY OF NEW YORK

Contractor _____

Dated _____, 20____

Entered in the Comptroller's Office

First Assistant Bookkeeper _____

Dated _____, 20____

