



PROJECT ID:

PV272-PATH

LAW

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

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

DAMAGES FOR DELAY

VOLUME 1 OF 3

BID BOOKLET

FOR FURNISHING ALL LABOR AND MATERIALS
NECESSARY AND REQUIRED FOR:

Construction of Garden-Wide Pedestrian Pathway System

LOCATION:
BOROUGH:
CITY OF NEW YORK

43-50 Main Street
Queens, 11355

CONTRACT NO. 1

GENERAL CONSTRUCTION WORK

Dept of Cultural Affairs

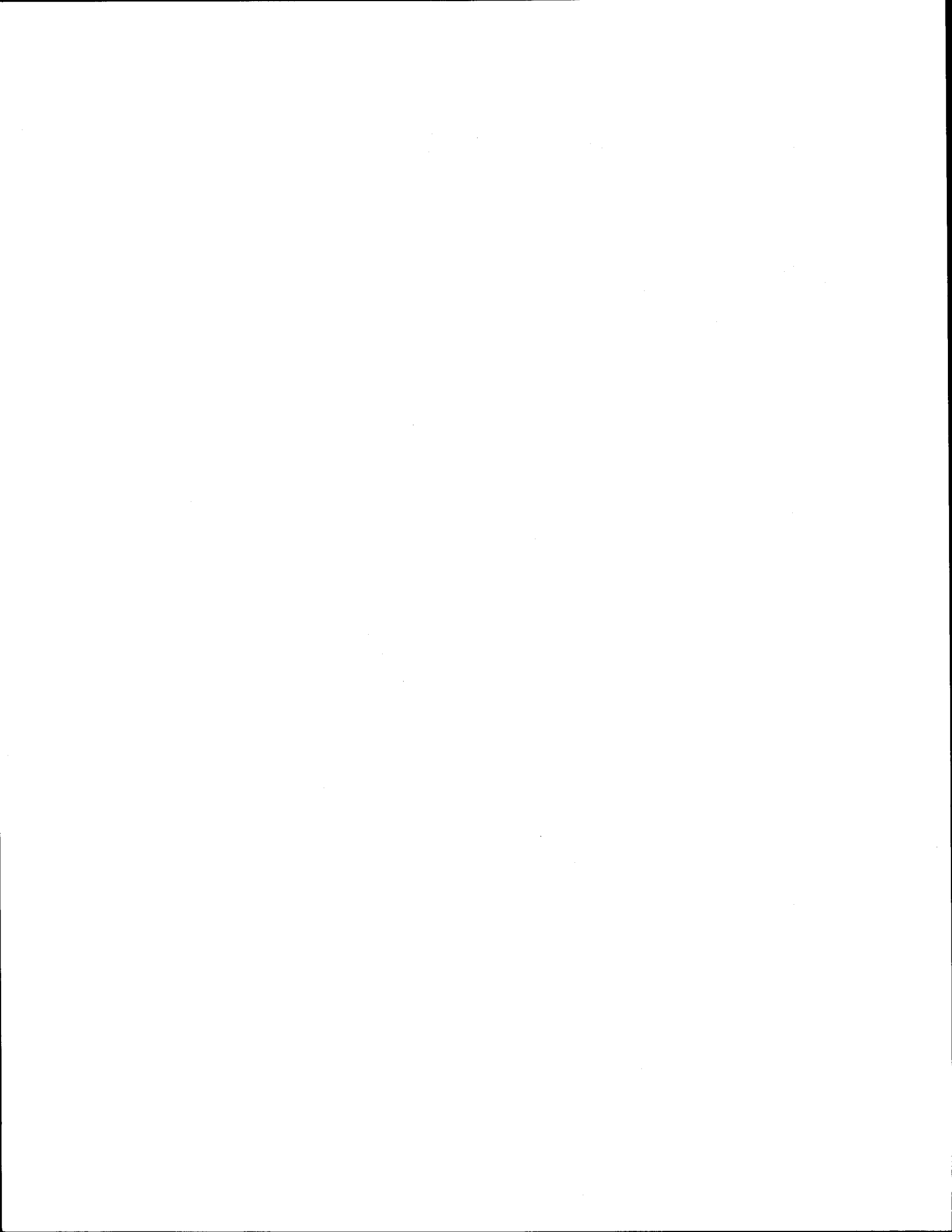
Abel Bainnson Butz, LLP



Date:

April 4, 2013

17 3-044





NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

DAVID J. BURNEY, FAIA
Commissioner

CAROL DIAGOSTINO
Agency Chief
Contracting Officer

December 03, 2013

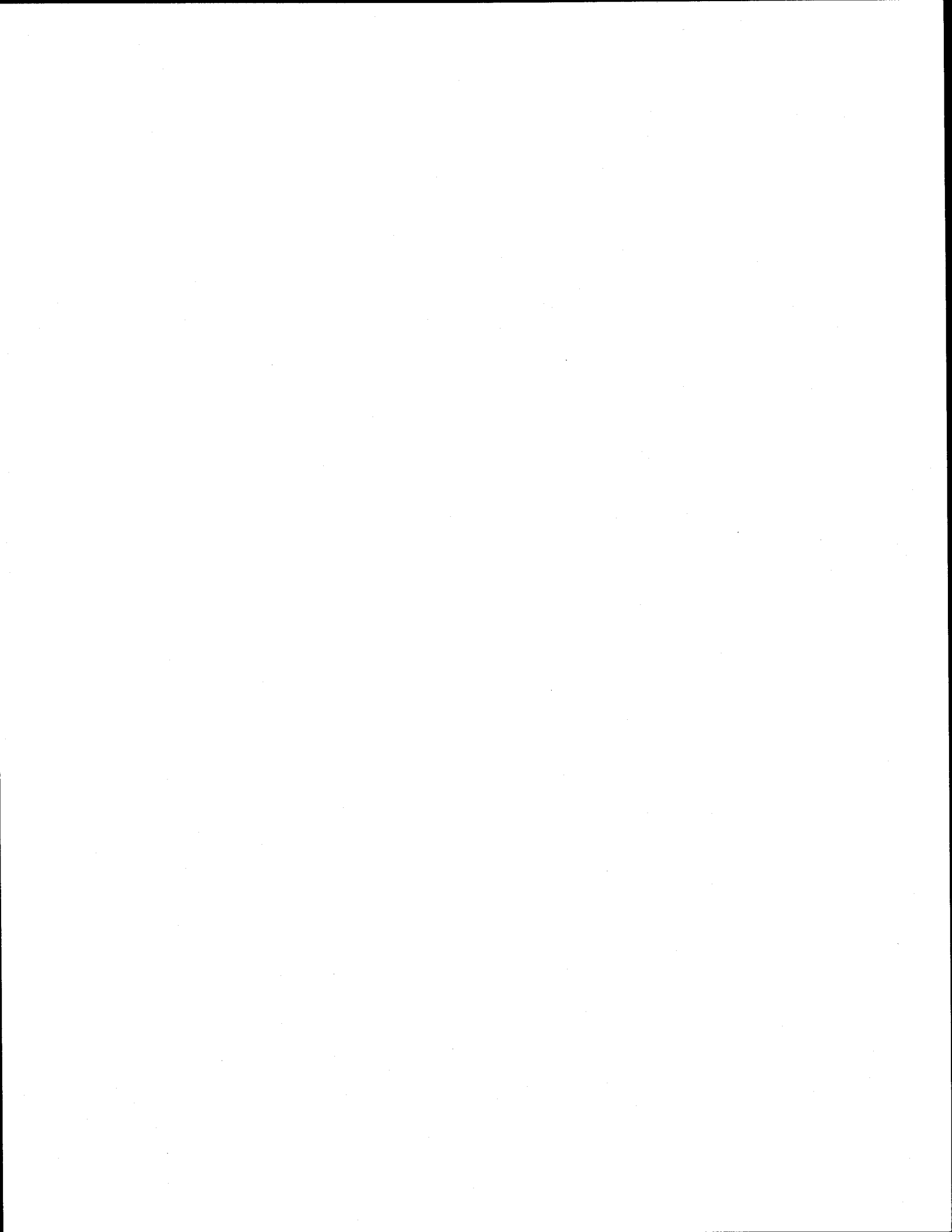
CERTIFIED MAIL - RETURN RECEIPT REQUEST
GALVIN BROS., INC./MADHUE CONTRACTING, INC.
149 Steamboat Road
Great Neck, NY 11024

RE: FMS ID: PV272PATH
E-PIN: 85013B0102001
DDC PIN: 8502013PV0020C
CONSTRUCTION OF GARDEN-WIDE
PEDESTRIAN PATHWAY SYSTEM -
BOROUGH OF QUEENS
NOTICE OF AWARD

Dear Contractor:

You are hereby awarded the above referenced contract based upon your bid in the amount of \$4,513,131.00 submitted at the bid opening on June 25, 2013. 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.



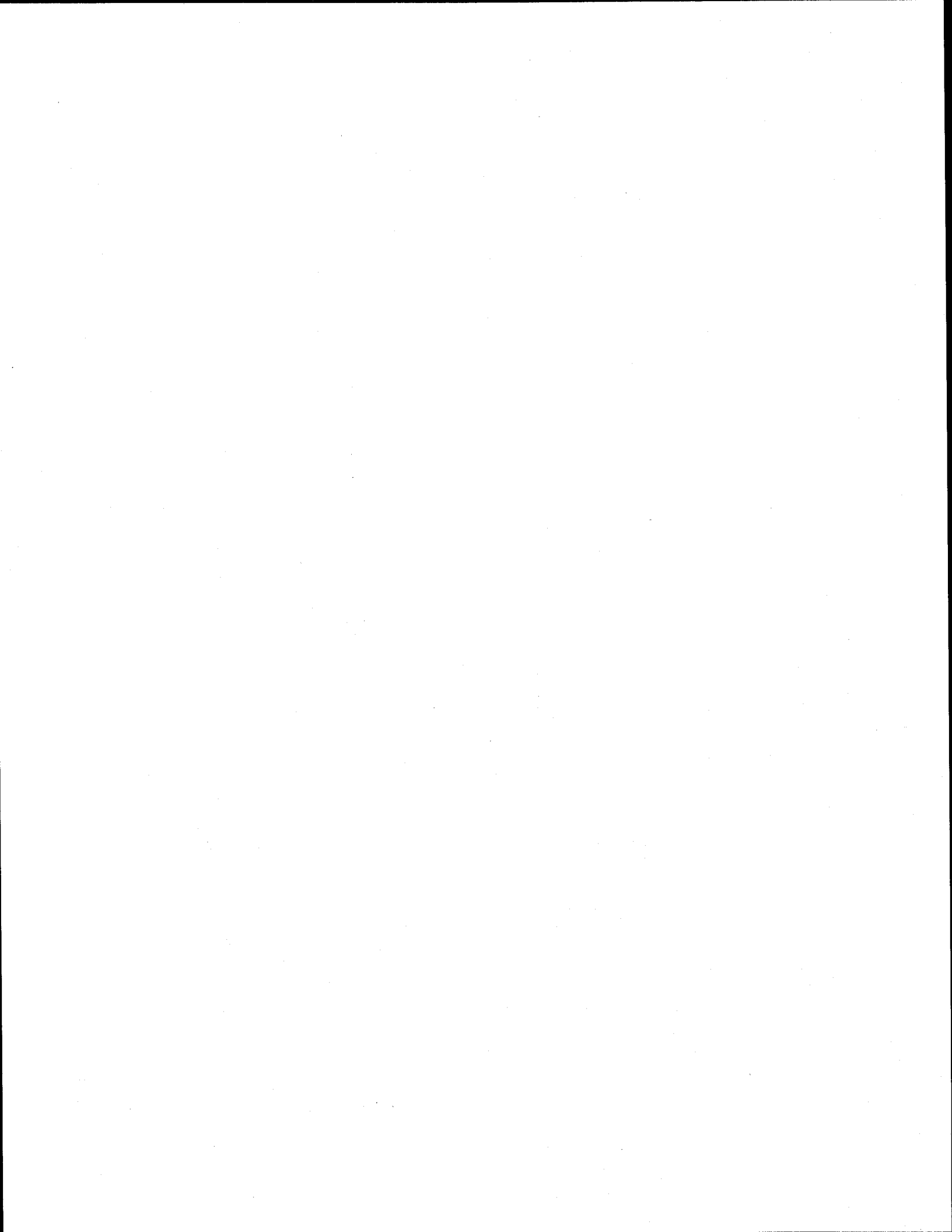


On or before the contract commencement date, you are required to submit all other certificates of insurance and/or policies in the types and amounts required by Schedule A. Such certificates of Insurance and/or policies must be submitted to the Agency Chief Contracting Office, Attention: Risk Manager,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

Lorraine Holley
DACCO



BID FORM
THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF STRUCTURES

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

PROJECT ID: PV272-PATH

**Construction of Garden-Wide Pedestrian Pathway System
43-50 Main Street
Queens, 11355**

Name of Bidder: GALVIN BROS., INC/MADHUE CONTRACTING, INC, a joint venture

Date of Bid Opening: June 17, 2013

Bidder is: (Check one, whichever applies) Individual () Partnership () Corporation () ^{xx} Joint Venture

Place of Business of Bidder: 149 Steamboat Road, Great Neck, New York 11024

Bidder's Telephone Number: 516-466-3785 Bidder's Fax Number: 516-466-3607

Bidder's Email Address: g.hayes@galvinbrothers.com

Residence of Bidder (If Individual): _____

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

Names of Partners

Residence of Partners

Edward P. Galvin (Galvin Bros)

15 West Drive, Plandome, NY 11030

Carol McCartney Galvin (Madhue)

15 West Drive, Plandome, NY 11030

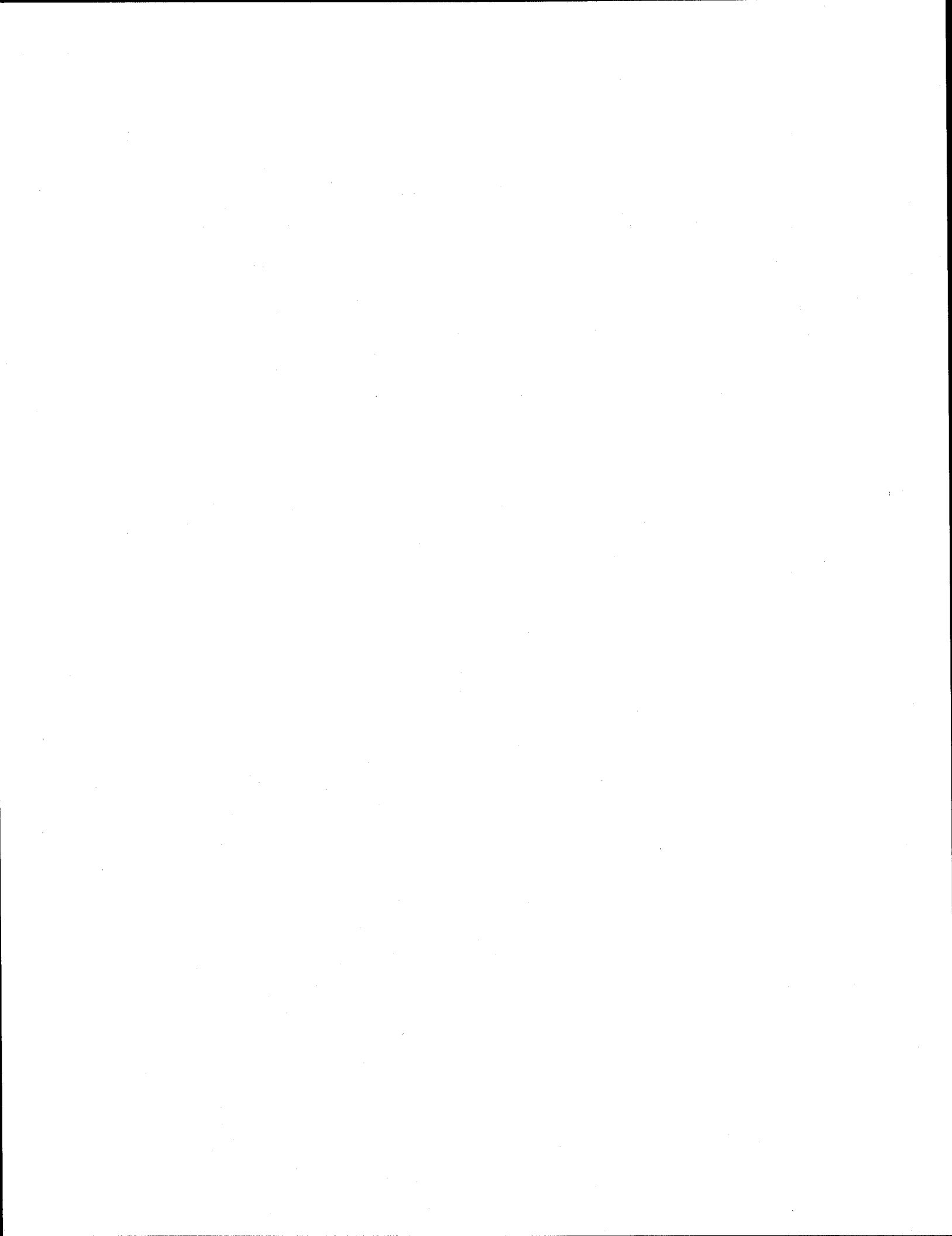
If Bidder is a Corporation, fill in the following blanks:

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: _____



BID FORM

PROJECT ID: PV272-PATH

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

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

Total Price For Labor

Total Price for Material Sold and Delivered

\$3017,135 + \$1,495,996 Total Price for Item A \$4513,131

TOTAL BID PRICE (Add A) (a/k/a BID PROPOSAL)

\$4513,131 6/25/13 P. 8

BIDDER'S SIGNATURE AND AFFIDAVIT

WARNING!! Failure to comply with items below will result in the rejection of your bid.

* SUBCONTRACTORS: You MUST complete and submit the form entitled "Bidder's Identification of Subcontractors" (See 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 share the form entitled "Bidder's Identification of Subcontractors". xx Yes No

* MWBE GOALS: You MUST complete and submit the Affirmations contained in the Subcontractor Utilization Plan (See Page 7), or a pre-approved waiver (See Page 9), at the time you submit your bid. You must submit the Affirmations (or a pre-approved waiver) in BID ENVELOPE #1.

Bidder: GALVIN BROS., INC./MADHUE CONTRACTING INC., a joint venture

By:

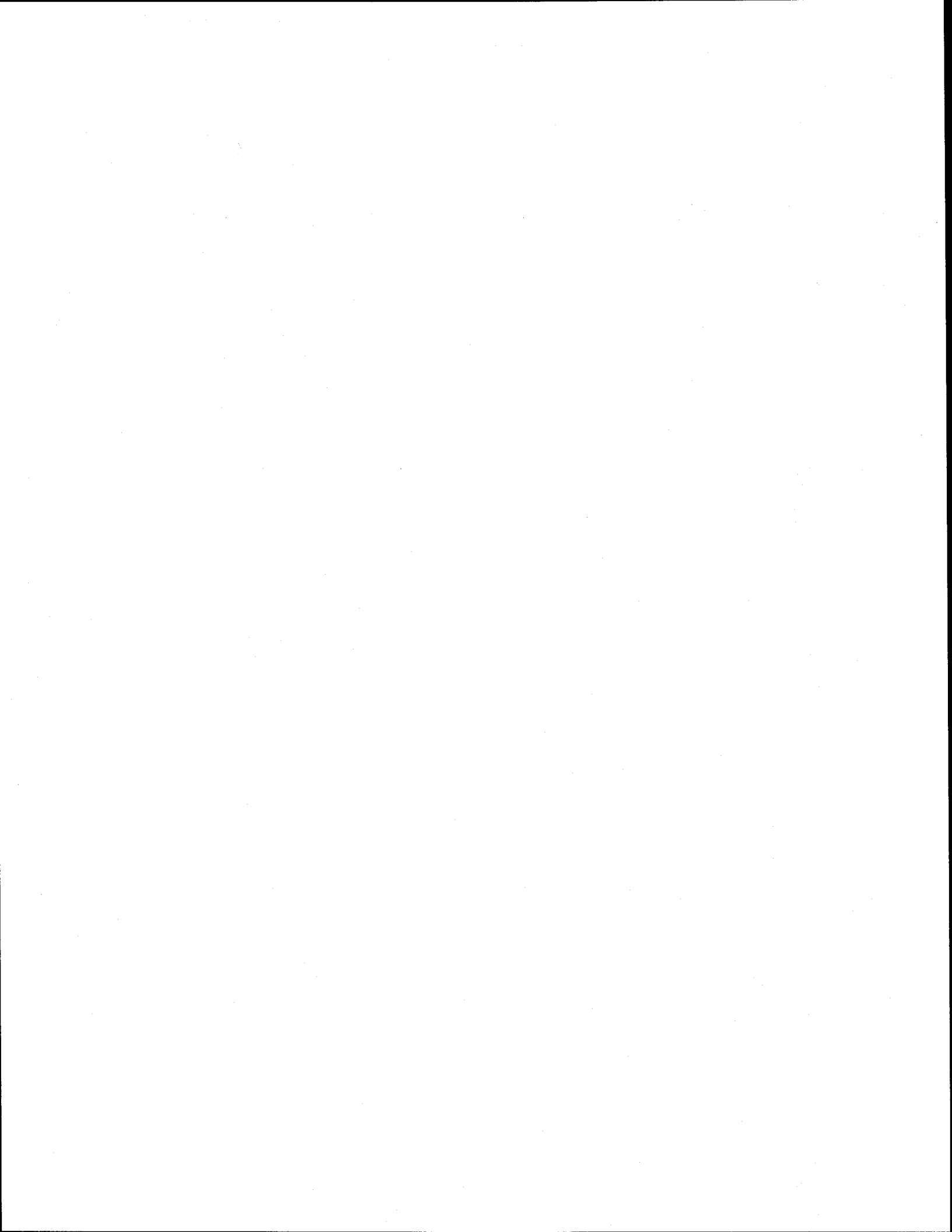
(Signature of Partner or corporate officer) Edward P. Galvin, General Partner

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

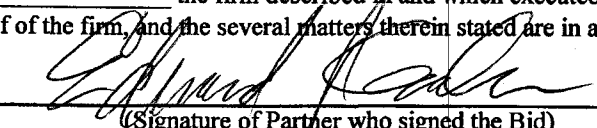
AFFIDAVIT WHERE BIDDERS IS A PARTNERSHIP

STATE OF NEW YORK, COUNTY OF Nassau ss:

Edward P. Galvin

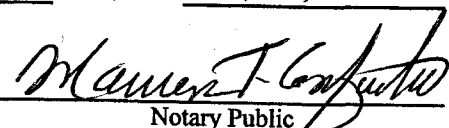
being duly sworn says:

I am a member of Galvin Bros, Inc/Madhue Contracting Inc, JV 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)
Edward P. Galvin, General Partner

Subscribed and sworn to before me this
14th day of June, 2013



Notary Public

MAUREEN T. CONFORTIN
Notary Public, State of New York
No. 01CO4850066
Qualified in Suffolk County
Commission Expires January 2014 2014

AFFIDAVIT WHERE BIDDERS IS A CORPORATION

STATE OF NEW YORK, COUNTY OF _____ ss:

being duly sworn says:

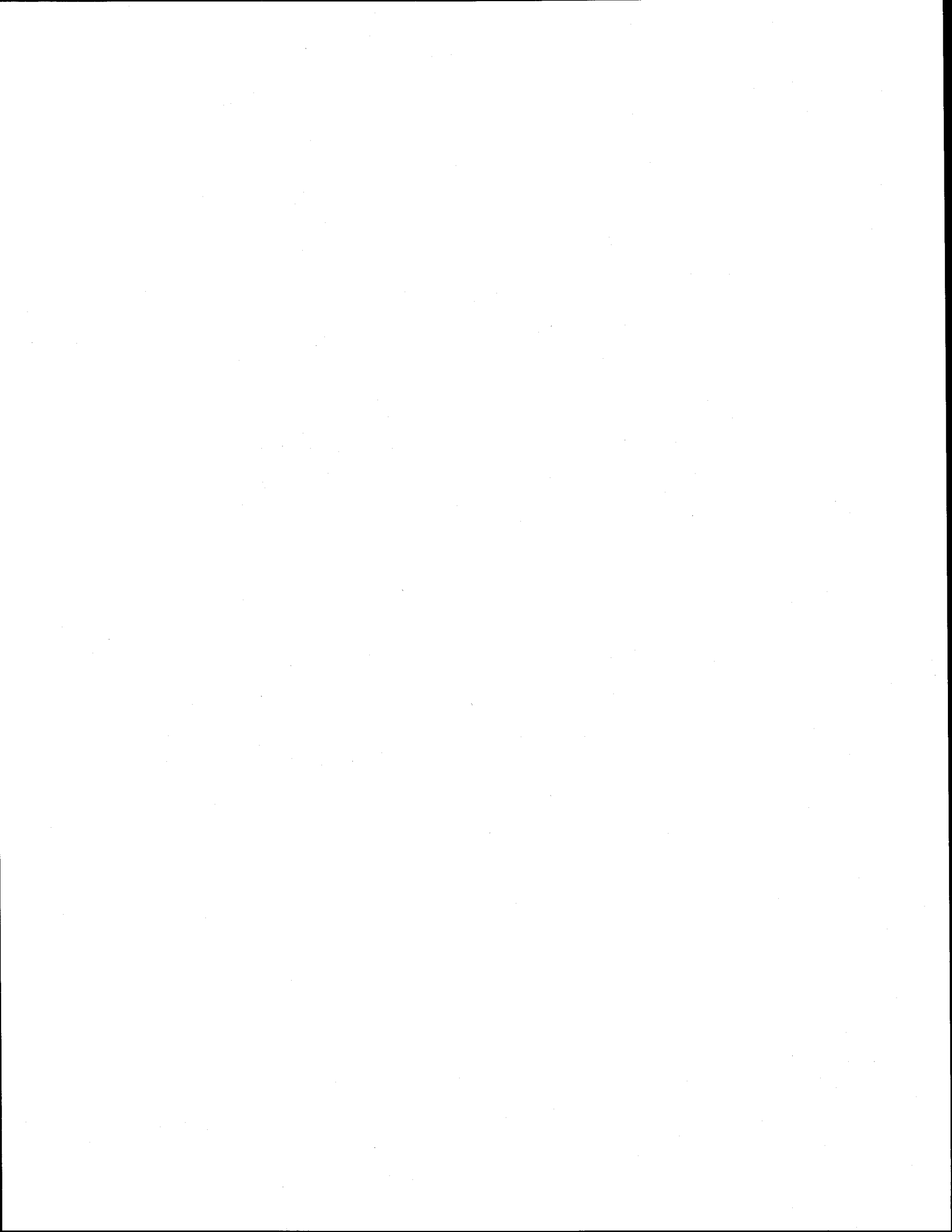
I am the _____ of the above named corporation whose name is subscribed to and which executed the foregoing bid. I reside at _____

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: Galvin Bros., Inc/Madhue Contracting, Inc, a joint venture

Address: 149 Steamboat Road

City: Great Neck

State: New York

Zip Code: 11024

CHECK ONE BOX AND INCLUDE APPROPRIATE NUMBER:

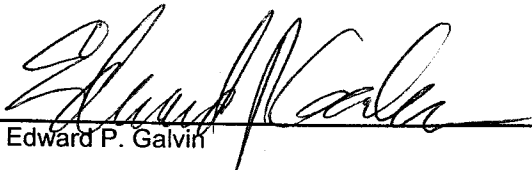
A - Individual or Sole Proprietorship *
SOCIAL SECURITY NUMBER

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

26-4699648

C - Corporation
EMPLOYER IDENTIFICATION NUMBER

By: _____

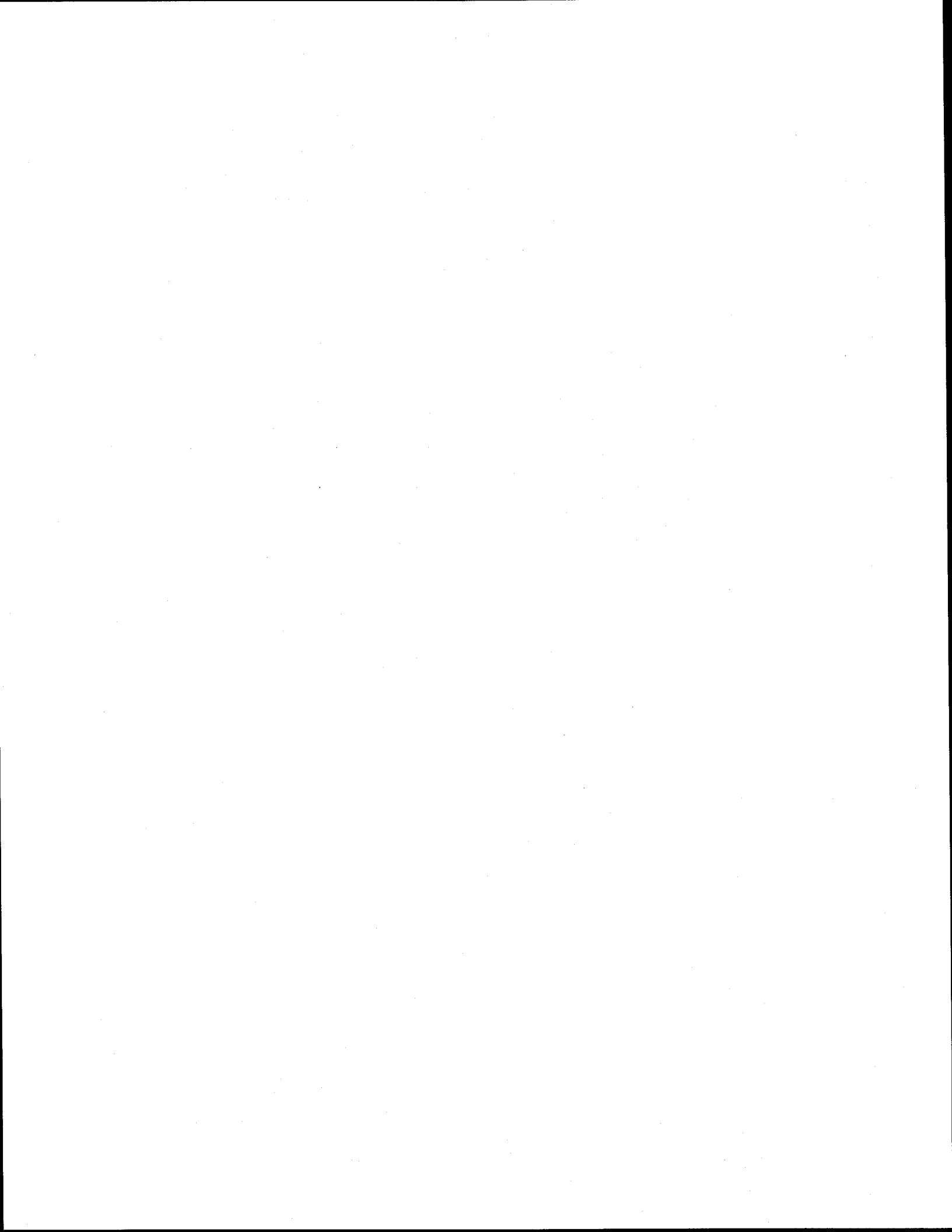

Signature: Edward P. Galvin

Title: General 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.



2
11/2/13

BIDDER'S IDENTIFICATION OF SUBCONTRACTORS

Project ID: PV272-PATH

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:**

Frash Machine
(Print Name)

Agreed Amount To Be Paid To Subcontractor: \$ 90,000

2. **HVAC CONTRACTOR:**

(Print Name)

Agreed Amount To Be Paid To Subcontractor: \$ _____

3. **ELECTRICAL CONTRACTOR:**

Welsbade Electric
(Print Name)

Agreed Amount To Be Paid To Subcontractor: \$ 220,000

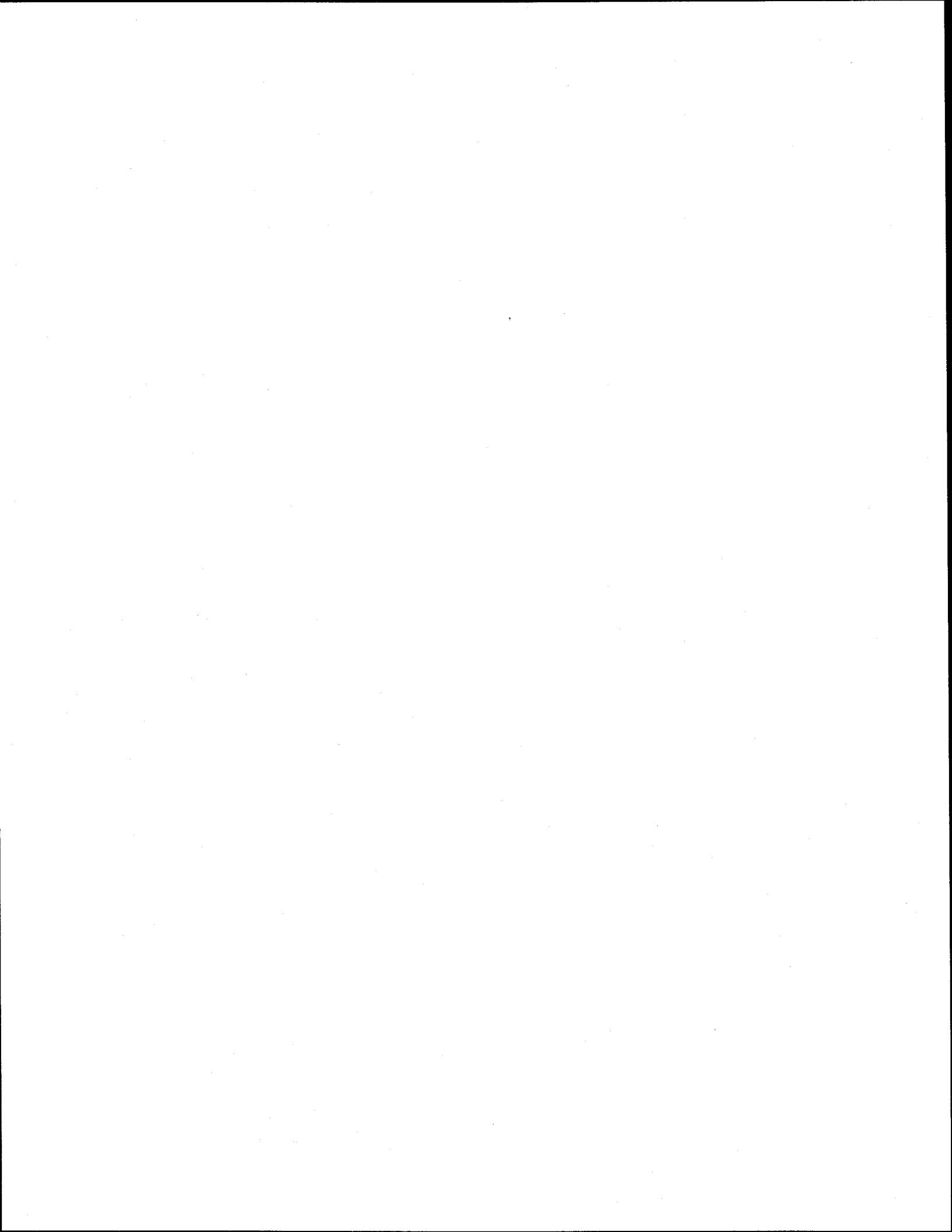
BIDDER'S SIGNATURE: The Bidder must sign this form in the space provided below:

Name of Bidder: Galvin Machine JV

By: [Signature]
Signature of Partner or Corporate Officer

Print Name: Edward P Galvin

Title: President



Qualification Form

Project ID: PV272-PATH

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

SEE ATTACHED LIST

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: _____

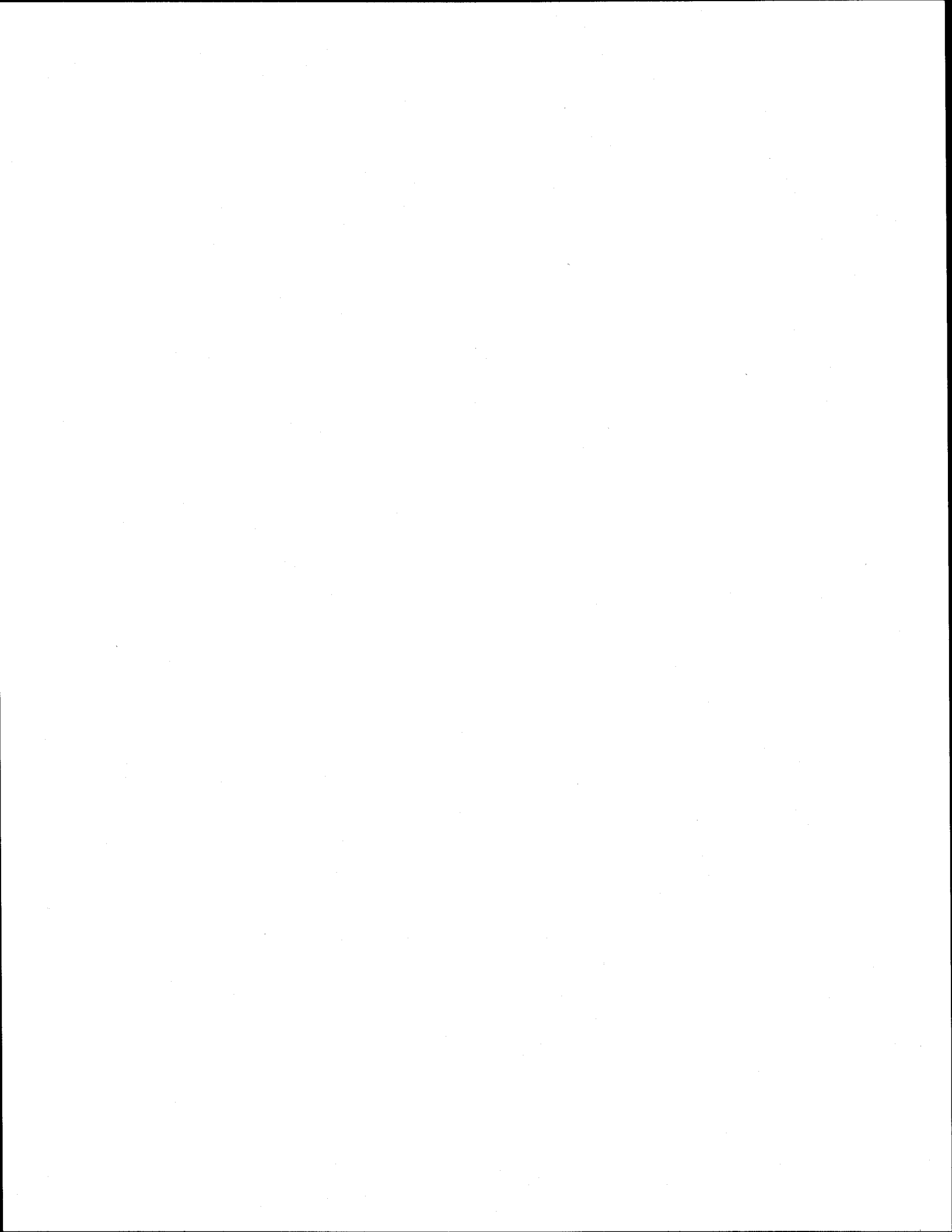
Title: _____ Phone Number: _____

Brief description of work completed: _____

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

Amount of Contract: _____

Date of Completion: _____

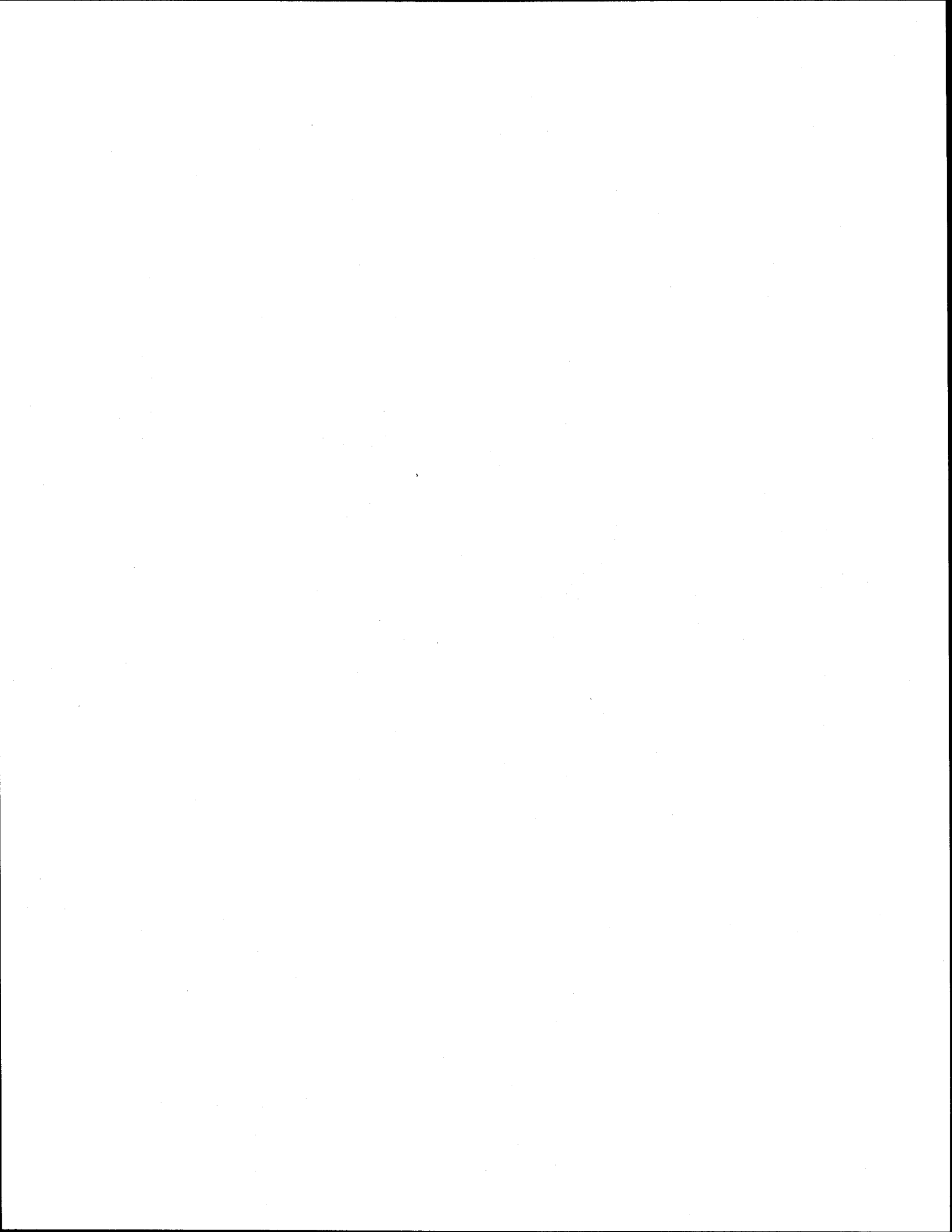


GALVIN BROS., INC./MADHUE CONTRACTING, INC.
a joint venture

PROJECT LISTING

Updated: June 2012

Owner	Description	Contact	Price	Date
Dormitory Authority State of New York	Brooklyn College	Ray Shadood (718) 421-2621	\$3,112,876	11
County of Westchester	Mamaroneck River-Saxon Woods	Rob Lopane (914) 995-4415	\$322,061	11
County of Nassau	Udalls Cove	Brian Schneider (516) 571-9610	\$5,936,075	11
Dormitory Authority State of New York	Temp Construction Facilities Contract 2822409999/CR40	Andrew Kerr (212) 268-1500	\$ 1,744,400	10
NYC DDC	Renovation of Glendale (DOT) yard; Contract HWQF2002		\$1,338,287	10
City of NY Dept of Parks & Recreation	Restoration of salt marsh bounded by Norton & Barrett Avenues, Pugsley Creek & Castle Hill Park	Joe Sdao (718) 760-6728	\$1,493,155	09
Dormitory Authority State of New York	Sitework- Bronx Psychiatric Cntr Contract 2822409999/CR23	Andrew Kerr (212) 268-1500	\$1,186,000	09

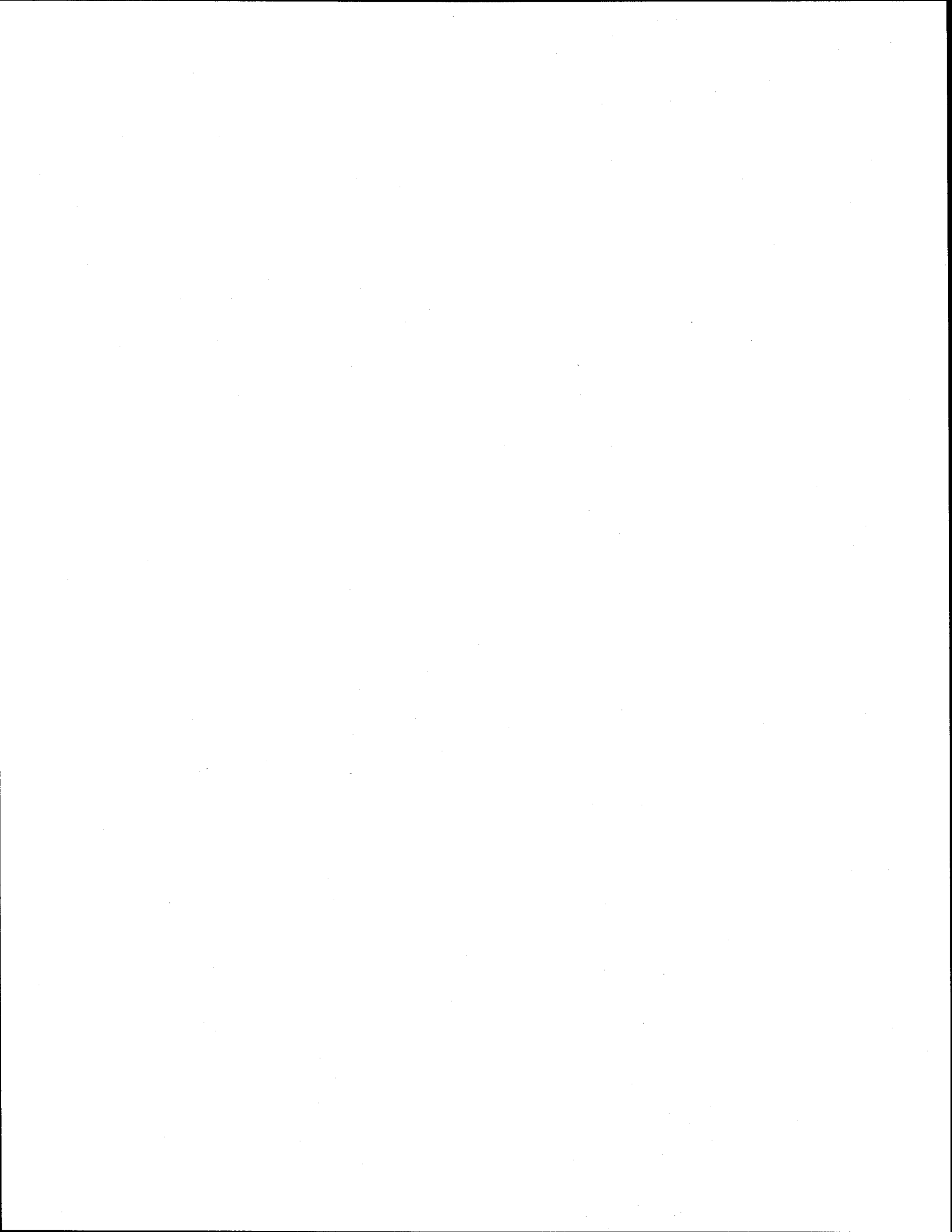


GALVIN BROS., INC.

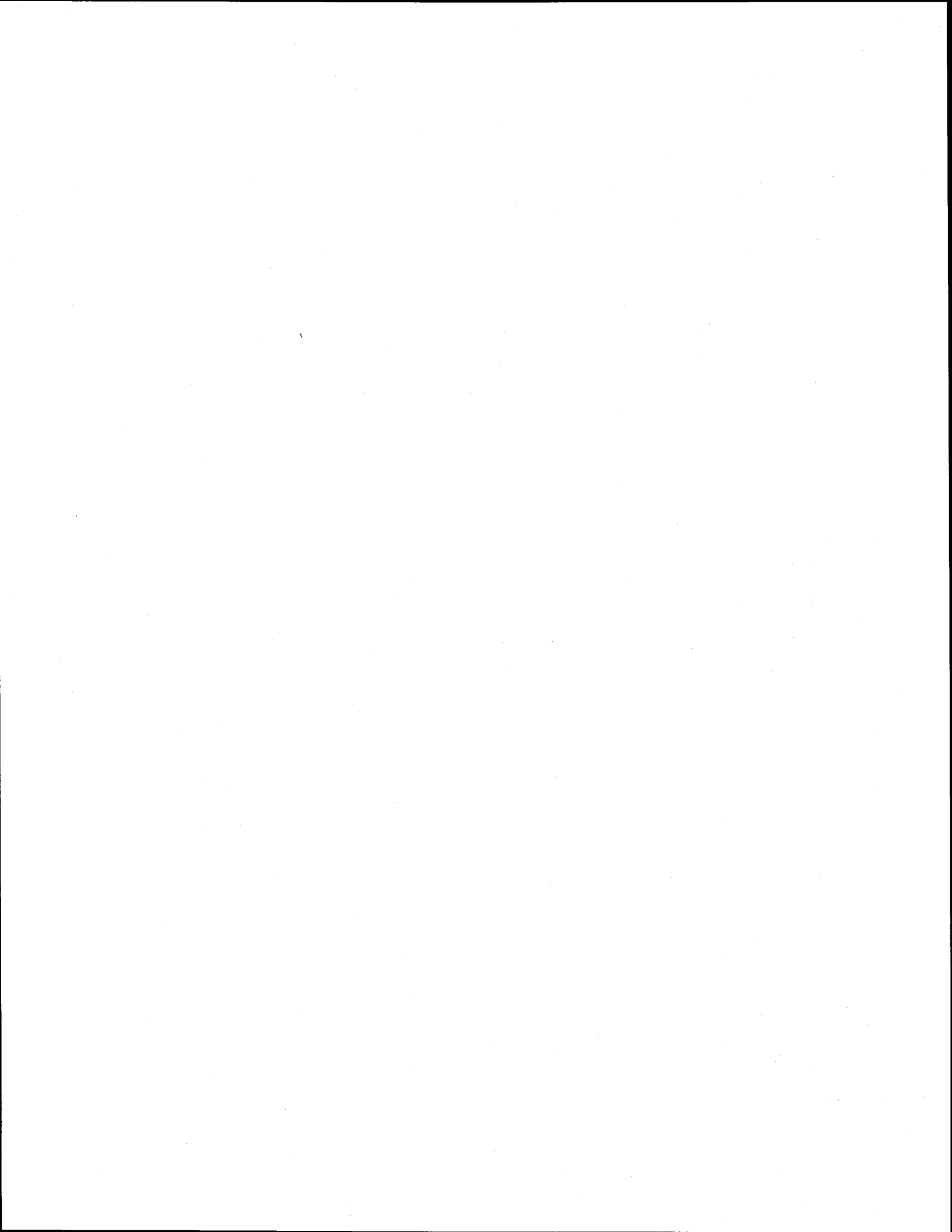
PROJECT LISTING

Updated: June 1, 2012

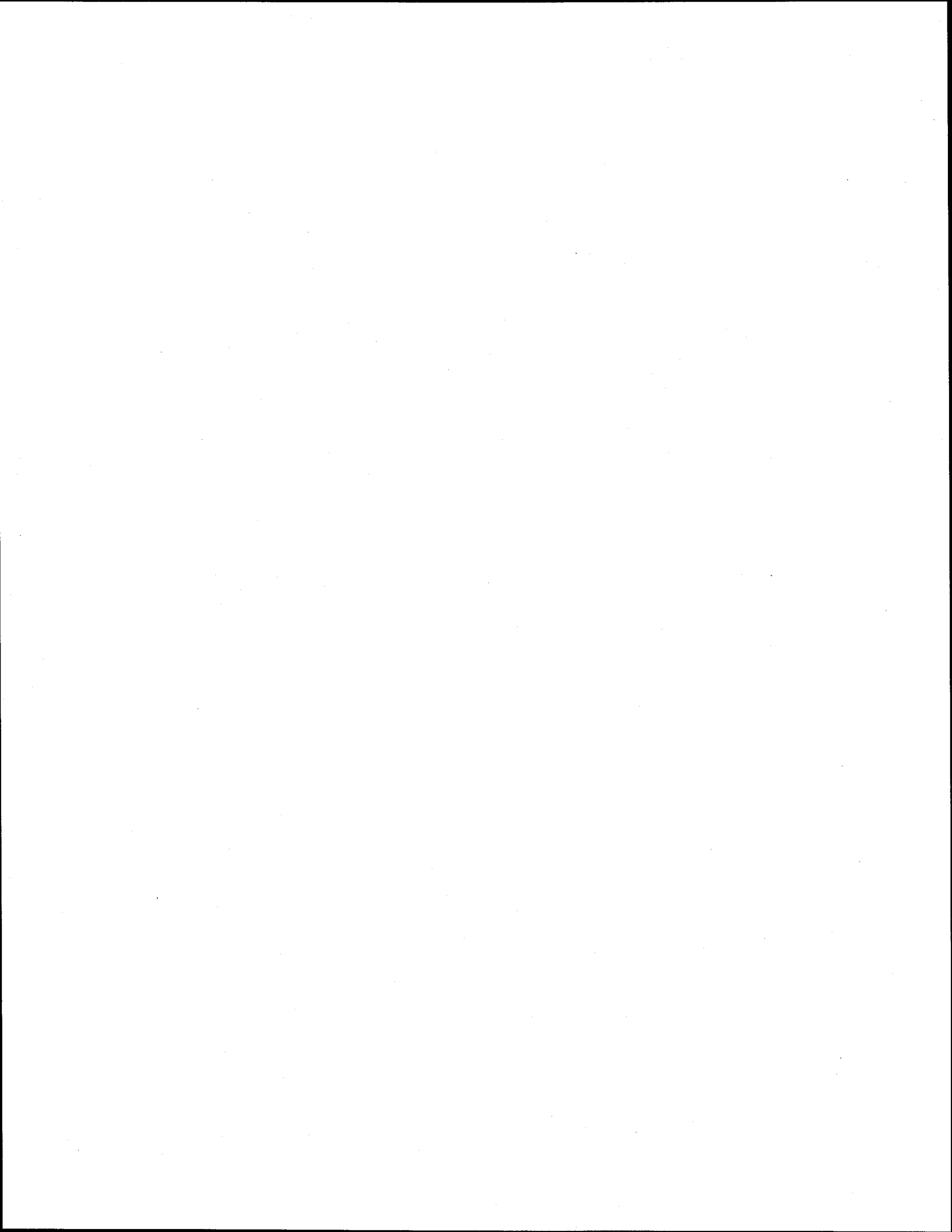
Owner	Description	Contact	Price	Date
Long Island Water Company	Plant 15 Iron Removal Facilities		\$4,943,000	12
Town of Oyster Bay	Tappen Beach	Jim Gladysz, Cashin Associates (631) 348-7600	\$244,300	12
US Army Corps of Engineers	Soundview Park Aquatic	Shewen Bien (917) 790-6251	\$5,276,000	11
DASNY	Brooklyn College (joint venture)	Ray Shadood (718) 421-2621	\$3,112,876	11
Westchester County	Mamaroneck River Saxon Woods (joint venture)	Rob Lopane (914) 995-4415	\$322,061	11
NYC EDC	Waterfront Park	Michael Rem, LIRO (212) 312-3725	\$15,882,169	11
Nassau County	Udalls Cove (joint venture)	Brian Schneider (516) 571-9610	\$5,936,075	11
North Shore Long Island Jewish Health Systems	Concrete/Asphalt Paving	Rich Benini, Bovis (718) 470-4052	\$774,590.00	11
NYC DPR	Drier-Offerman Park	John Natoli (718) 760-6725	\$3,410,880	11
NYS OGS	Queens Children Psychiatric Center	Gloria Hagerstrom (718) 776-4441	\$278,900	11
NYC EDC	South Bronx Greenway Hunts Point Landing Park and Fishing Pier	Owen Foote (212) 312-3748	\$6,823,000	11
NYS Parks	Renovation of Roberto Clemente State Park, Pool and Deck	Steve McCorkell (518) 474-1352	\$5,600,000	10
Queens West Development Corp.	Site renovation, park construction, esplanade, sewer, utilities	Larry Ford (718) 786-2034	\$16,000,000	10
LIRR	Installation of elevator at train station, building renovation	Poonam Punj (718) 558-3638	\$1,272,000	10
NYS OGS	Installation of concrete helicopter landing pads and asphalt paving	Russell Blue (914) 584-0631	\$1,041,000	10
Dormitory Authority State of NY	Bronx Psychiatric Center - Athletic Field and related sitework	Andrew Kerr (212) 268-1500	\$1,247,000	10
US Army Corp of Engineers	Gerritsen Creek - Salt Marsh restoration 60 acres, sand importation	Shewen Bian (917) 790-6251	\$6,700,000	10



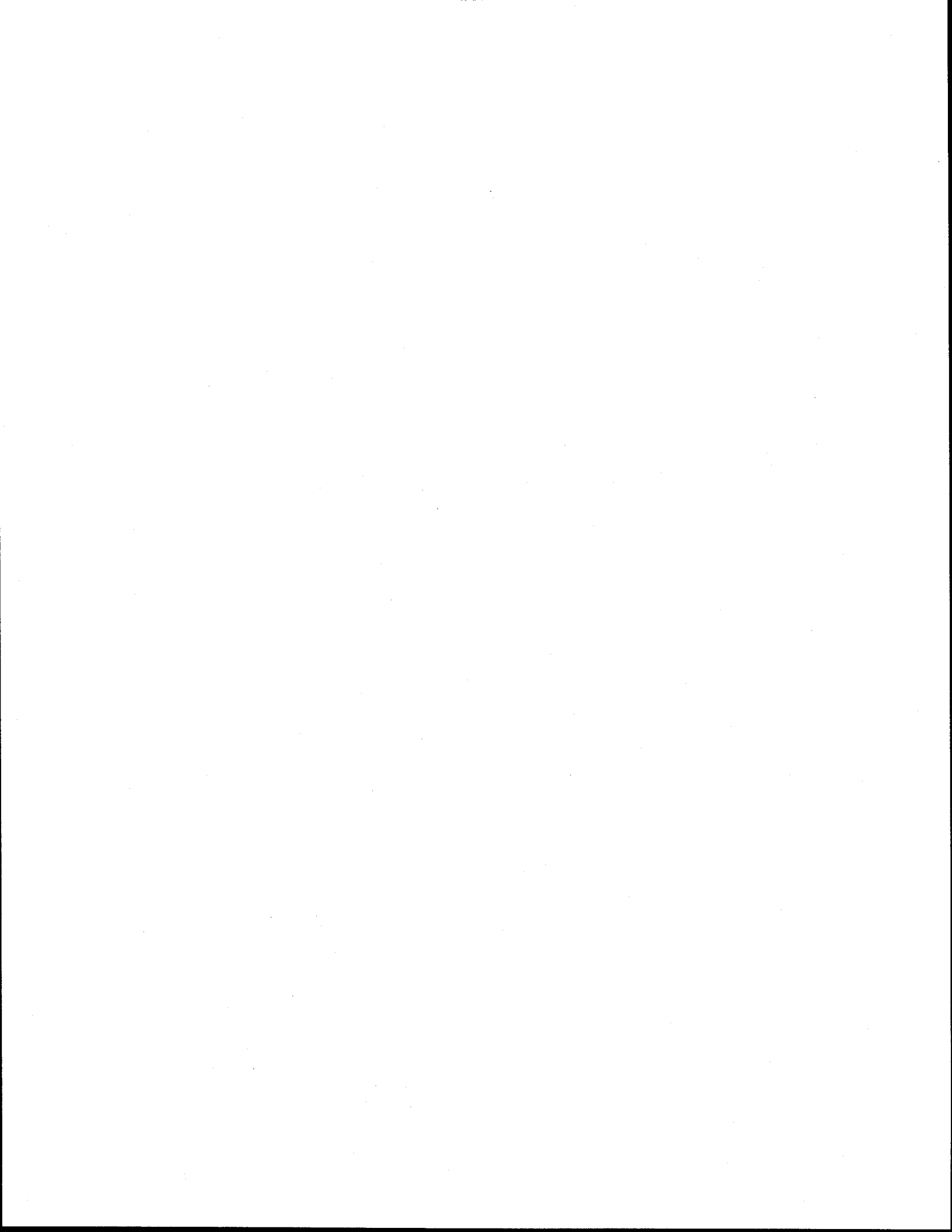
US Army Corp of Engineers	Elders Point West - 57 acre Island construction, wetland plantings, hummock relocation	Shewen Bian (917) 790-6251	\$5,700,000	10
Dormitory Authority State of NY	Bronx Psychiatric Center - Road work, parking lot, site lighting	Andrew Kerr (212) 268-1500	\$1,423,000	10
NYS DEC	Turtle Cove - Pedestrian Bridge Construction in Wetlands	Sherri Albrecht (973) 812-6877	\$144,000	10
Town of North Hempstead	Wetlands restoration	Laura Schwarnoff	\$155,000	10
Town of North Hempstead	Sewer line on piles	Jill Guiney (516) 739-6713	\$780,000	10
Town of Mamaroneck	Gardens Lake dredge and restoration	David Goessl (914) 381-7835	\$1,060,000	10
SUNY Maritime	Road Work - Granite curbs, brick paths, asphalt paving	William Herrmann (718) 409-2882	\$547,000	10
SUNY Maritime	Granite curbs, brick paths, asphalt paving	William Herrmann (718) 409-2882	\$1,620,000	09
North Shore Long Island Jewish Health Systems	Women's Hospital - Foundations and site work	Bovis Lend Lease- (718) 470-4189	\$14,091,000	08
Great Neck Park District	Parkwood Sports Complex Site Work/Pool Package	Craig Belesi - Beacon Building Group (718) 343-5400	\$8,443,000	08
NYC Parks & Recreation	Construction of access to Bronx River & misc site work in Soundview Park	Elicer Pertuz- NYC Parks (718) 760-6827	\$1,791,319	08
Town of Hempstead	Construction of Beach Locker Facility - Atlantic Beach	Larry Feeley (631) 563-4800	\$4,243,000	08
NYC Parks & Recreation	Installation of floating pool barge, pedestrian access, related utility connections and site work in Barretto Point Park, and reconstruction of fire damaged portions of the Tiffany Street Pier	John Natoli - NYC Parks (718) 760-6722	\$7,658,038	08
Caumsett Foundation Inc	Stabilization of Historic Garage & Office Exterior at Caumsett State Park		\$662,000	08
NYS OGS	Arthur Kill Rifle Range	Juan Alvarenga (917) 731-7023	\$1,820,000	07
NYC Parks & Recreation	Reconstruction of portion of Indian Lake, picnic area and adjacent area in Crotona Park	Elicer Pertuz- NYC Parks (718) 760-6827	\$3,992,326	07
NYC Parks & Recreation	Construction of Pugsley Creek Greenway	Faisal Choudhury- NYC Parks (718) 760-6816	\$2,633,020	07



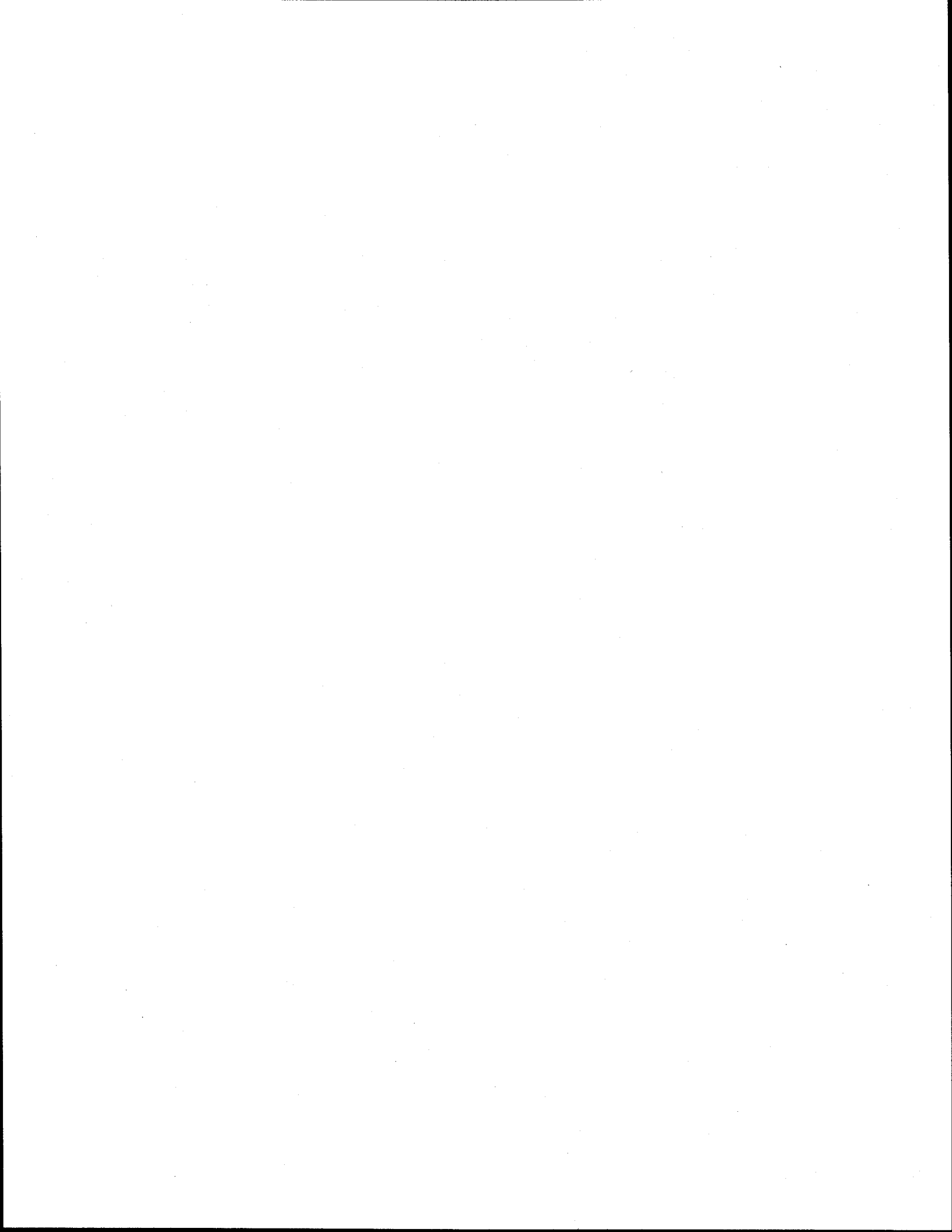
NYC Sanitation	Construction of New Salt Storage Facility at East 125 th Street	Stephen Arthur-NYC Dept of Sanitation (917) 237-5965	\$5,228,000	07
Village of Great Neck	2007 Roadway Improvement Program	Matt Mohlin- H2M Group (631) 756-8000	\$1,179,100	07
Great Neck Park District	Parkwood Sports Complex Phase I - Demolition	Craig Belesi- Beacon Building Group (718) 343-5400	\$424,000	07
State of New York-Parks	Bethpage Park Pump Station	(631) 321-3544	\$600,000	07
North Shore Long Island Jewish Health Systems	LI Jewish Parking Structure Foundation	Bovis Lend Lease-Bill Allan -(718) 470-4189	\$2,200,000	07
NYC DEC	Randalls Island Salt Marsh	Mohammad Elwakil (212) 691-5000	\$4,500,000	07
NYC Parks & Recreation	Construction of a portion of the Bronx River Greenway (concrete plant)	Eliecer Pertuz- NYC Parks (718) 760-6827	\$4,141,066	06
Young Israel of Jamaica Estates	Synagogue Addition	Sheldon Steiner (212) 951-3951	\$3,400,000	06
U.S. Army Corps	Elders Point Mitigation and Restoration Project	Donald Braun (718) 630-5363	\$15,506,000	06
Lexington School for the Deaf	Athletic Field and Track; Parking Lots	Tom Reilly (718) 350-3002	\$900,000	06
Secure USA, Inc.	Hillview Reservoir and roadways	Hampton Cobb (770)205-0789	\$210,000	06
Village of East Hills	Salt Storage Facility and roadways	Dick Ward (631) 563-4800	\$350,000	06
Town of Oyster Bay	Centre Island Wetlands	Paul (516) 624-6609	\$380,000	06
Secure USA, Inc.	One Centre Street; New Roadways	Hampton Cobb (770) 205-0789	\$425,000	06
NYC Parks Dept.	Emergency Reconstruction of the Shore Parkway Seawall and three (3) miles of roadway	John Natoli 718-760-6725	\$17,500,000	06
NYS DEC NYS OGS	Bridge Creek Wetlands Restoration	Nanci Bateman 518-402-9106	\$1,105,043	05
Village of East Hills	General Construction, The Park at East Hills, Village pool and Fields and two (2) miles of roadway	Richard Arenella 516-775-7862	\$11,808,000	05
Secure USA, Inc	Perimeter fencing and security issues at Jerome Park Reservoir and roadway	Brian Doherty 770-205-0789	\$1,653,000	05
Beth Abraham Health Services	Interior, exterior alterations & renovations, & Parking Lot	Norman Vesik 718-636-1000	\$1,475,000	05



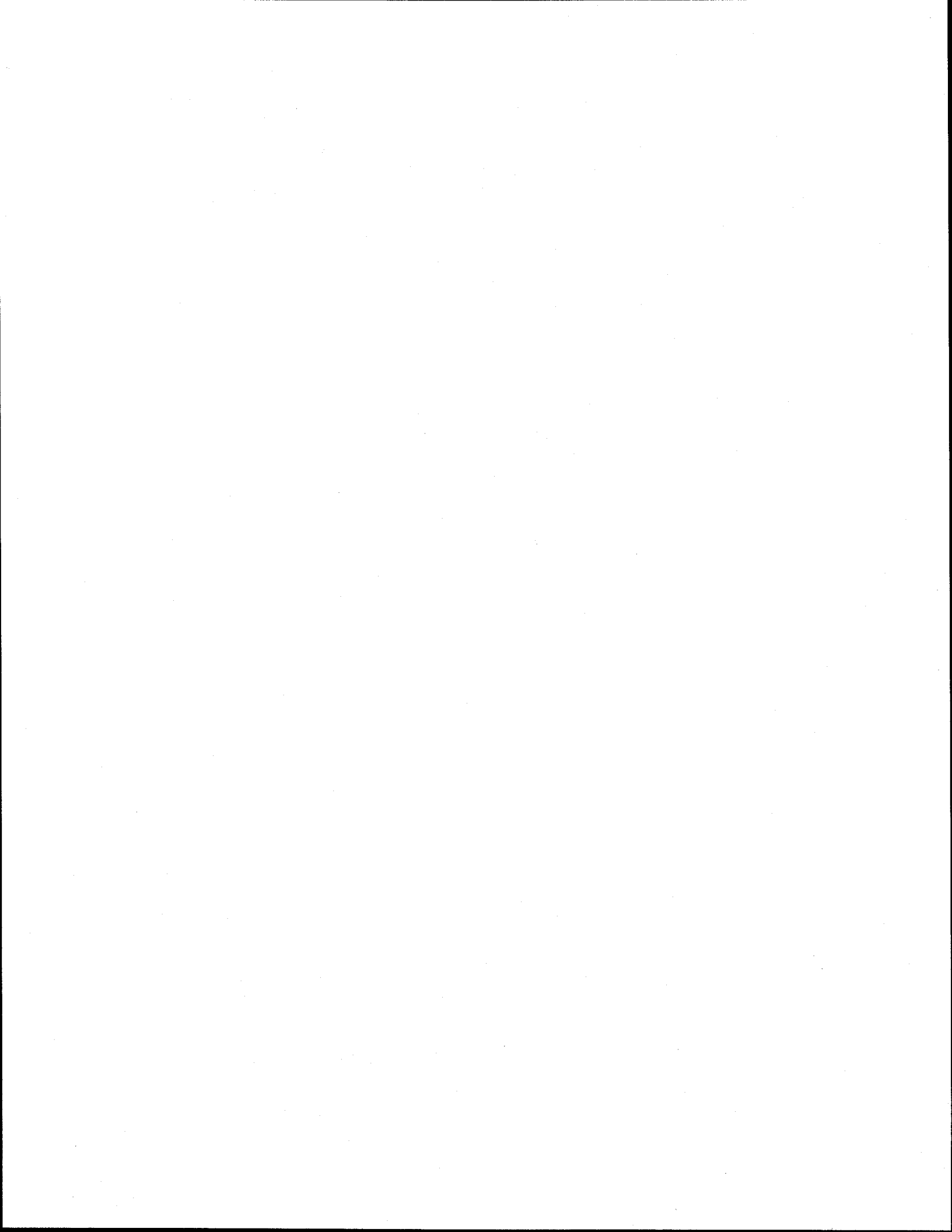
Center for Nursing & Rehabilitation	Interior alterations and renovations	Norman Vesik 718-636-1000	\$94,000	05
Kean Development	Demolition, excavation & sitework	Dick Hannington 631-367-9696	\$560,000	05
Village of Great Neck Estates	Village Park Improvements Landscaping and roadwork	Sid Krugman 516-482-8283	\$144,400	05
Secure USA, Inc.	Kensico Dam-Security Issues around perimeter of Dam	Hampton Cobb 770-205-0789	\$196,236	04
Long Island Railroad	Garden City Employee Facility and parking lot	Mike Cooley 718-558-3636	\$2,436,000	04
NYC Parks Dept.	Bronx River Floodplain Restoration	Eliecer Pertuz 718-760-6827	\$2,314,000	04
LI Water (American Water)	Two (2) Iron Removal Plants and parking lots	Ed Radwanski 623-445-4200	\$6,244,000	04
County of Suffolk	Mill Dam Bridge and roadway	Jim Peterman, P.E. 631-852-4003	\$2,308,000	04
Village of Great Neck	Road work (Ravine Road) and curbing	Don Sioss, P.E (H2M). 631-756-8000	\$688,858	04
US Dept of Interior- National Park Service	Frank Charles Park- Gateway National Rec.: new asphalt walkways and bench slat replacement	Marvin Newman 718-354-4610	\$203,000	03
Village of Thomaston	New maintenance garage and sitework and parking lot	Bob Stern 516-482-3110	\$237,600	03
Nassau County Dept. of Public Works	Nassau Community College ADA Ramps; ADA Compliance (11 bldgs)	Joe Haran 516-571-6041	\$373,300	03
Nassau County Dept. of Public Works	Tanglewood Preserve - Brook & ponds dredging; park improvements	Brian Schnider 516-571-6994	\$1,113,000	03
Center for Nursing & Rehabilitation	St. Marks Avenue - New parking lot	Norman Vesik 718-636-1000	\$173,500	03
Great Neck Park District	Masonry wall and site improvements on Cohan Property	Nial Marin 516-487-7665	\$150,000	03
Sands Point Water District	Caustic soda containment pads and parking lot	John Mirando, PE Dvirka and Bartilucci 516-364-9892	\$97,300	03
Secure USA	Installation of security ramps and bollards in NYC	Brian Doherty 770-205-0789	\$500,000	03
Village of Plandome	Road improvements	Richard Weber Sidney Bowne 516-746-2350	\$98,000	03
Village of Kings Point	Kings Point Sinclair Drive Outfall	Ed Palmer 516-326-6434	\$272,440	03
City of Glen Cove	Glen Cove Esplanade and blacktop path	Nick DeSantis	\$1,100,000	03



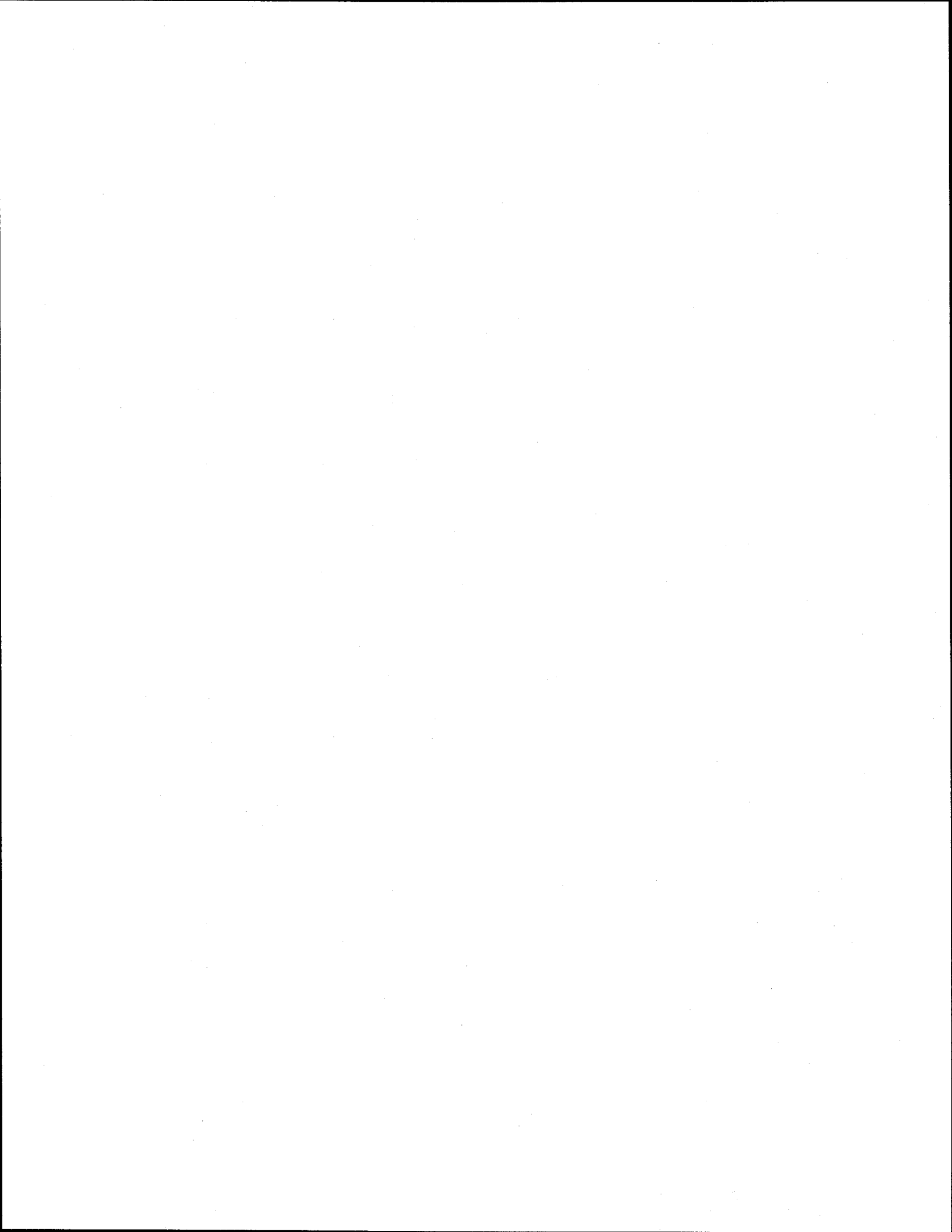
Village of Floral Park	Floral Park Road Work	Richard Weber 516-746-2350	\$636,371	03
NYC Parks Department	Lemon Creek-Staten Island, Bulkhead and Channel Dredging	Martin Christie 718-760-6752	\$545,000	03
Manhasset Lakeville Water District	Chemical transfer and containment system	Ben Blitch, H2M	\$280,000	03
Village of Kings Point	Channel Drive outfall restoration	Rich Weber 516-746-2350	\$50,000	03
Village of Kings Point	Foxwood Road outfall restoration	Rich Weber 516-746-2350	\$40,000	03
St. Barnabas Hospital	New parking lot construction	Paul Fawcett 914-633-1655	\$160,000	03
Town of Oyster Bay	Bldg. H, addition/renovation	D. Wilke 516-759-9050	\$141,000	03
NYC Parks Department	Van Cortlandt Park and roadway	Eliecer Pertuz 718-760-6827	\$8,100,000	02
New York City Dept. of Design & Construction	Installation of Pedestrian Ramps	William Svilar, P.E. 718-391-2427	\$6,348,130	02
Village of Rockville Centre	Hempstead Lake Athletic Field Improvement Project	Thomas Burke 516-827-4900	\$2,397,211	02
NYS Department of Transportation	Improvements, Route 111	Carlos Palomeque 631-218-6445	\$473,000	02
Avolon Bay Communities, Inc.	Road work, Pulaski Road	Andrew Forsberg 212-370-9269	\$65,000	02
Town of Hempstead	Baldwin Parking Field Construction	William Rockensies, P.E. 516-489-5000	\$242,295	02
Village of Island Park	Long Beach Road Beautification Project	Ann Berlin 516-431-0600	\$178,191	02
Town of Hempstead	Outfall Restoration, Bulkhead Reconstruction	William Rockensies, P.E. 516-489-5000	\$656,011	01
Village of Massapequa Park	Installation of Handicap Ramps	Skip Horal 516-798-0244	\$172,400	01
Nassau County Dept. of Public Works	Roosevelt and Milburn Creek Park Restoration	William Vlasik 516-571-4183	\$274,459	01
New York City Dept. of Design & Construction	Installation of Pedestrian Ramps	William Svilar, P.E. 718-391-2427	\$6,348,130	01
LIRR - Babylon	State Storehouse & Employee Facility and parking lot	David Washington 631-893-4965	\$3,100,000	01
Village of Thomaston	Thomaston Roads Stage IV	Bob Stern 516-482-3110	\$284,000	01
Town of Huntington	Main Street Improvements	Tom Mazzola 631-286-8668	\$474,000	01



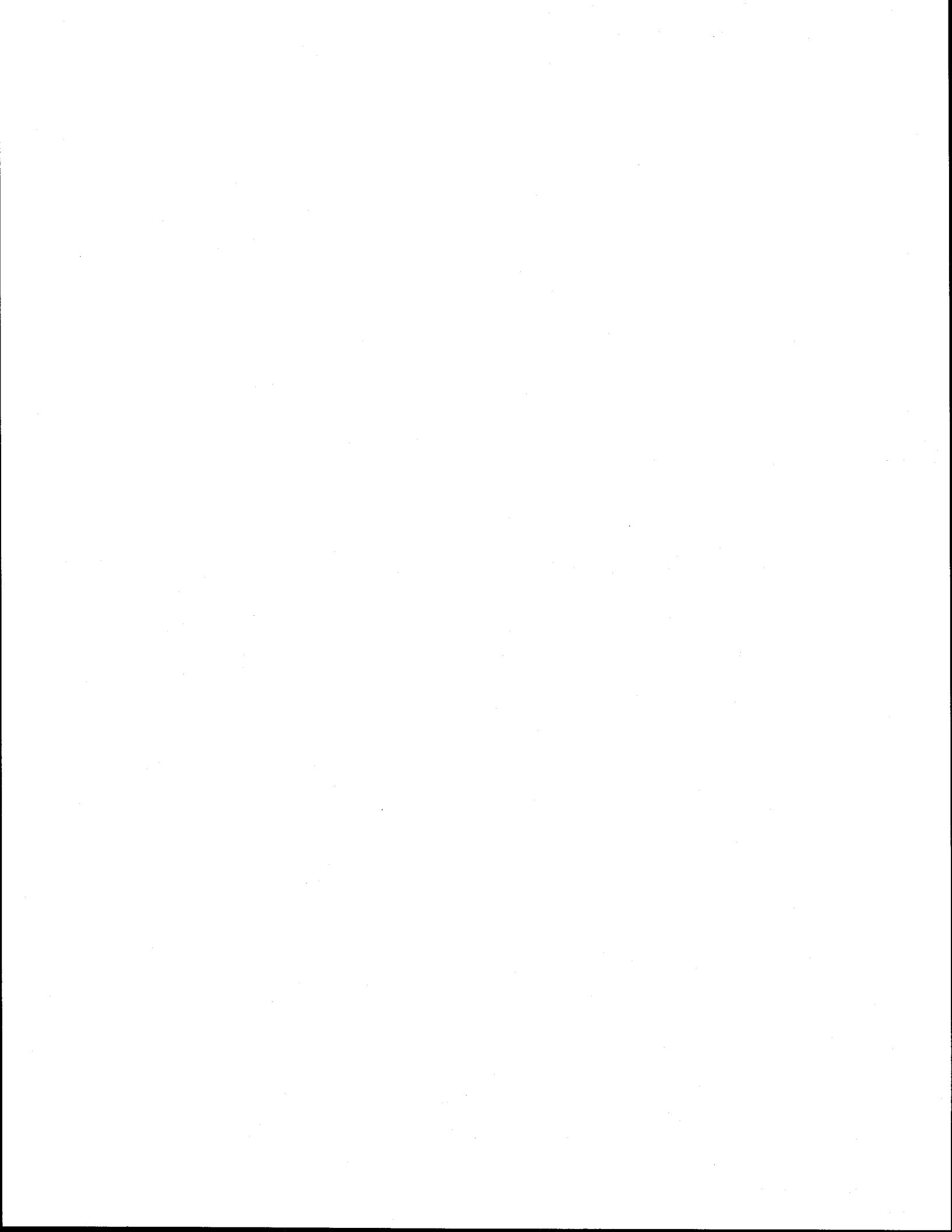
Town of Brookhaven	New Cell Construction Phase VIII, IX Brookhaven Landfill	Chris Dwyer 631-286-8668	\$3,980,000	01
Village of Lattingtown	Closure of breach in the Frost Creek boat basin	Chuck Bowman 631-727-2400	\$164,856	01
Town of Southampton	LIRR Station Improvements and parking lot	Nancy Lenz 631-348-7600	\$1,412,219	01
AIL Loading Dock	New (3) bay docks and site work	Angel Venegas 631-595-5309	\$366,800	01
Village of Great Neck Estates	2000/2001 Road Improvements Program	Jo Choo 631-592-2660	\$1,900,000	00
Village of Lynbrook	Lynbrook Pool Complex Greis Park and parking lots	Thomas Burke 516-827-4900	\$1,917,796	00
Diocese of Rockville Centre	St. Patrick's Convent Renovation	Lee Sagastano 516-364-8150	\$405,000	00
Village of Great Neck	Steamboat Road Retaining Wall	Don Sioss 631-756-8000	\$84,090	00
Village of Hempstead	Parking Garage Fields 5 & 6 Reconstruction	Jim O'Callahn 516-827-4900	\$763,000	00
Great Neck Plaza	Great Neck Plaza Parking Garage Repairs	Harry Perlman 516-482-4500	\$783,639	00
Village of Kings Point	Reconstruction of Broadlawn Road	Richard Weber 516-746-2350	\$471,000	00
Fox Navigation	Ferry Terminal Building & Dock and parking lot	Joe Wilson 860-437-6930	\$350,000	00
Great Neck Park District	Wyngate Park Rehabilitation	Sol Wesler 516-789-8818	\$417,077	00
City of Glen Cove	Glen Cove Ferry Parking Lot	Tom Cancellere 516-676-2000	\$239,247	99
City of Glen Cove	Glen Cove Wetlands Restoration	Greg Scott 631-232-2600	\$248,490	99
Diocese of Rockville Centre	St. Rosalie Rehabilitation	Lee Sagastano 516-364-8150	\$803,500	99
Long Island Water	Water Tank Dome	Hans Tuneblom 856-346-8279	\$260,000	99
Great Neck Park District	Cutter Mill Park Rehabilitation	George Desmaris 631-694-3040	\$58,000	99
Great Neck Park District	Steppingstone Park Retaining Wall	George Fehrman 631-434-7900	\$144,274	99
Merchant Marine Academy	Merchant Marine Museum Rehabilitation	Linda Fasbac 516-773-5515	\$47,500	99
Great Neck Park District	Peninsula Park	George Desmaris 631-694-3040	\$35,000	99
Diocese of Rockville Centre	St. Aloysius Rehabilitation	Jack Baumann 516-482-2770	\$624,998	99



Nassau County	Welwyn Preserve	William Vlasak 516-571-4031	\$1,492,170	99
Valley Stream	Valley Stream Roads	Sean Lindvall 516-827-4900	\$273,008	99
Village of Saddle Rock	Saddle Rock Tennis Court	Leonard Samansky 516-482-9400	\$35,513	99
Great Neck Park District	Steppingstone Porch Roof Replacement	George Ferman 631-434-7900	\$74,079	99
Town of North Hempstead	Harbor Links Mini Golf Course	Paul Roth 631-451-6222	\$574,434	99
Village of Sea Cliff	Bulkhead & Park Renovations	William Vlascik 516-571-4183	\$379,949	99
Village of Williston Park	1999 Road Improvements	Ken Pritchard 516-364-9892	\$473,610	99
Village of Kings Point	Road work various roads	Richard Weber 516-746-2350	\$471,016	99
Town of Babylon	Babylon Landfill Final Cover System	William Huff 631-422-7955	\$3,959,035	99
Great Neck Estates	Road Reconstruction Various Roads	Joe Choo 516-938-5666	\$256,590	99
Nassau County	Inwood Park Rehabilitation	John Longo 516-563-4800	\$1,891,080	98
Town of North Hempstead	Harbor Links Golf Course Various Contracts; roadways and parking lot	Commissioner Paul Roth 631-451-6222	\$13,300,000	98
State Construction Fund	Construction Sand/Salt Building - Technology College Farmingdale	Michael Clemente 518-443-5700	\$171,200	98
Nassau County	Inwood Park Rehabilitation Park Support Building	John Longo 516-563-4800	\$198,000	98
Town of North Hempstead	Construct a Sewer Pump Station at Harbor Links	Paul Roth 631-451-6222	\$829,953	98
Town of Hempstead	Road Reconstruction - Various Roads Baldwin	Rich Hueglin 516-489-5000	\$1,298,190	98
Village of Thomaston	Road Rehabilitation	Bob Stern 516-482-3110	\$2,322,065	98
Town of North Hempstead	Parking Lot at Harbor Links Golf Course	Paul Roth 631-451-6222	\$1,840,000	98
Nassau County	Installation of Handicap Ramps Phase IV	Gerry Leonetti 571-4385	\$1,500,000	98
Nassau County	Wantagh Park Pool Modernization and parking lots	Larry Feeley 516-563-4804	\$7,000,000	98
Great Neck Estates	Road work for the Village of Great Neck Estates	Joe Choo 516-938-5666	\$500,000	98
Village of Mineola	Reconstruction of Village Pool	Louis DiDomenico 516-746-0750	\$1,462,000	97

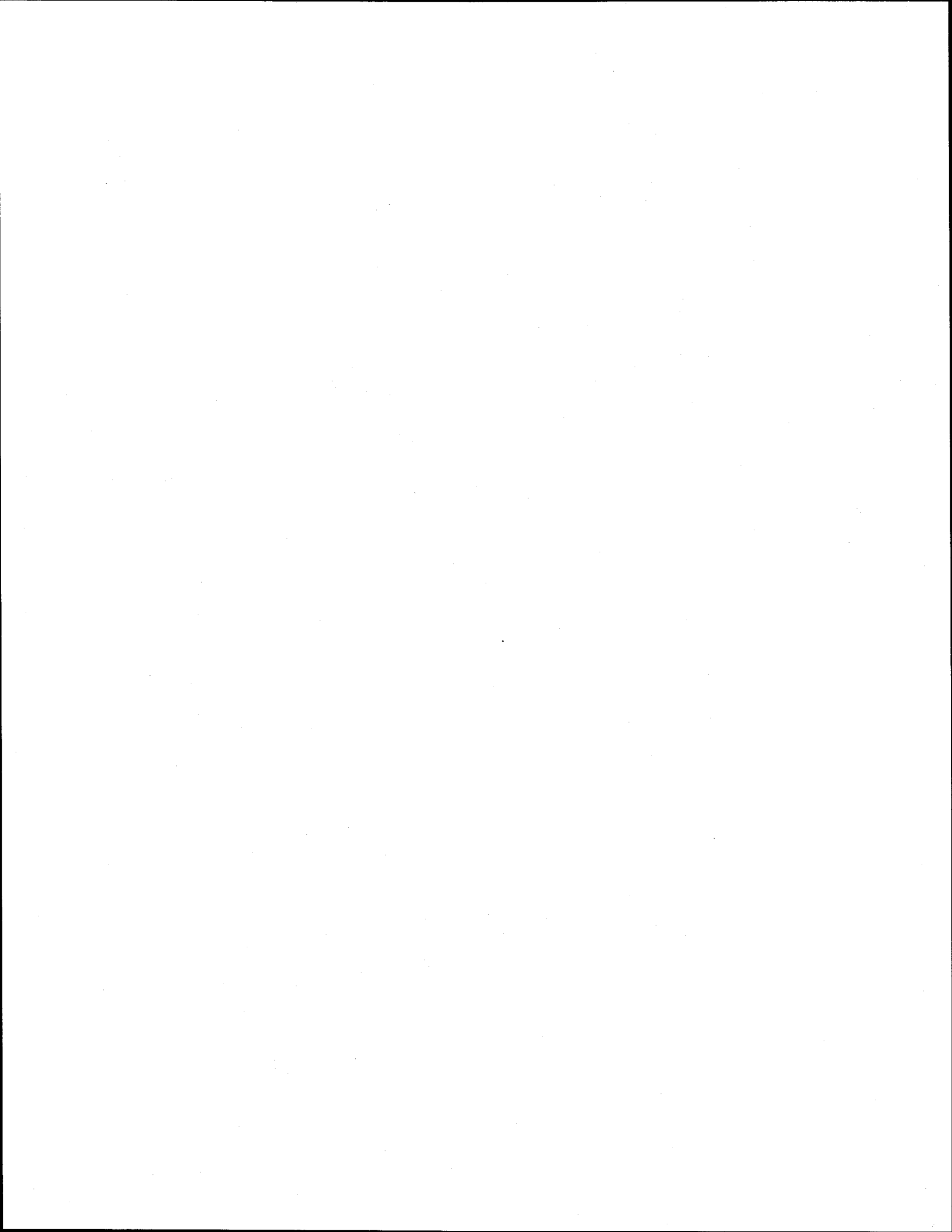


Piping Rock Club	Reconstruction of Beach Club	Heidi DeBethman Butler, Rogers, Baskett 212-686-9677	\$840,000	97
Town of North Hempstead	Bluff Stabilization at Harbor Links Golf Course	Paul Roth 631-451-6222	\$3,223,139	97
Village of Thomaston	Road Reconstruction	Pat Knowles 516-482-3110	\$1,730,000	97
Village of Lake Success	Drainage Improvements at Lake Success	Richard Petraca 516-827-6900	\$196,000	97
Long Island Water	Backwash Facility	Vincent Boccia 516-593-1000	\$109,000	97
Great Neck Estates	Road Reconstruction	Joseph Choo 516-938-5666	\$75,000	97
St. John's University	Marillac Hall site and landscaping work	Grant Kassap Scorcia & Diana 285-5365	\$440,000	97
Nassau County	Installation of Handicap Ramps Phase II	Gerry Leonetti 571-4385	\$1,500,000	97
Town of North Hempstead	18 Hole final shaping at Harbor Links Golf Course	Paul Roth 631-451-6222	\$4,244,502	97
Town of North Hempstead	Construction of Par 3 Golf Course & Rec. Facility	Paul Roth 631-451-6222	\$481,349	97
Town of North Hempstead	Harbor Links Golf Course Rough Grading	Paul Roth 631-451-6222	\$1,700,000	97
St. Frances de Chantal Church	Renovation and Addition to Convent	Claude Cuvie 243-5005	\$750,000	96
Town of Hempstead	Reconstruction of roads in Elmont	John Flataco 938-0600	\$1,850,000	96
Village of Kings Point	Roads, curbs and drainage	Jim Davis 482-7872	\$532,000	96
Village of Atlantic Beach	Atlantic Beach concrete roadway construction	Emily Siniscalchi 516-371-4600	\$76,280	96

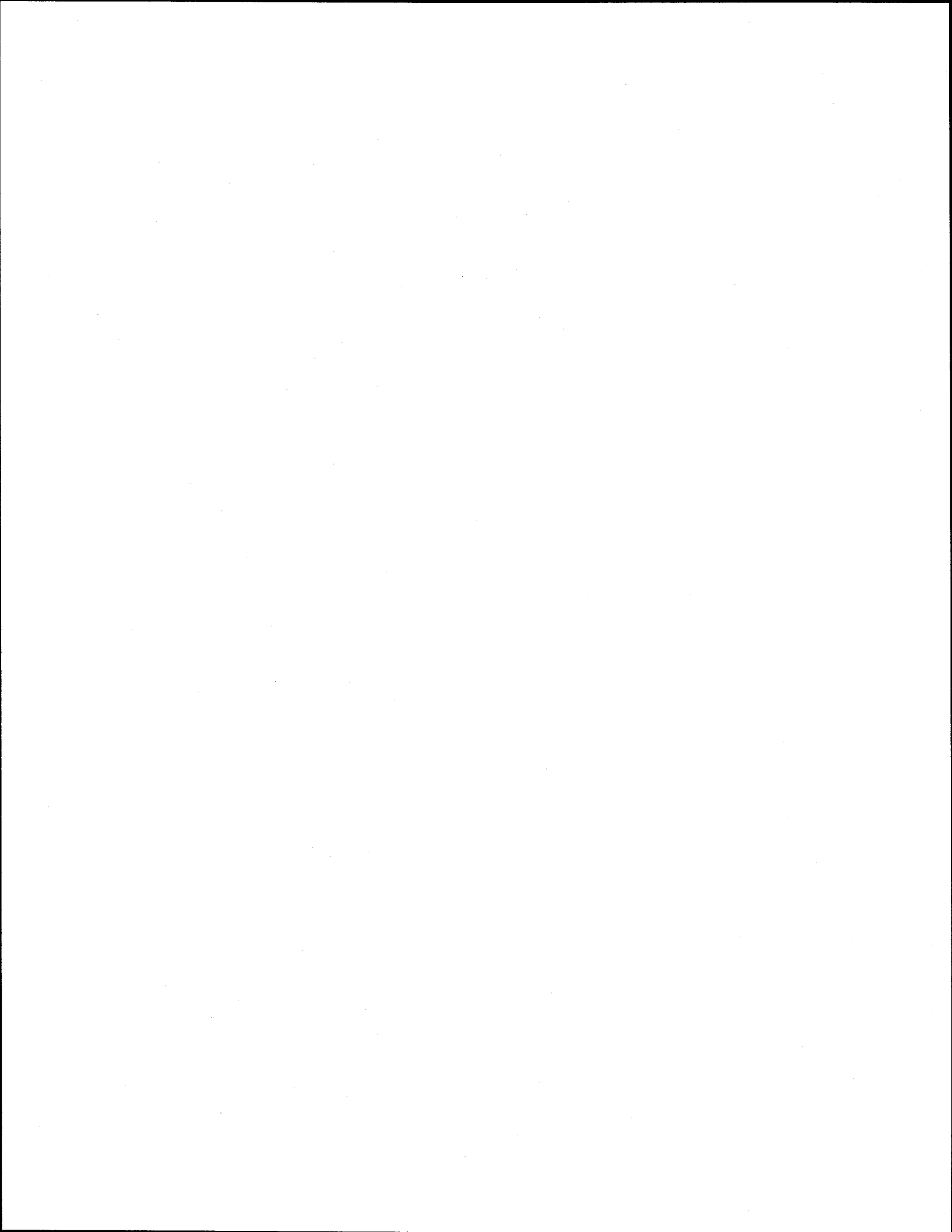


PAVIN MADHUE/SV

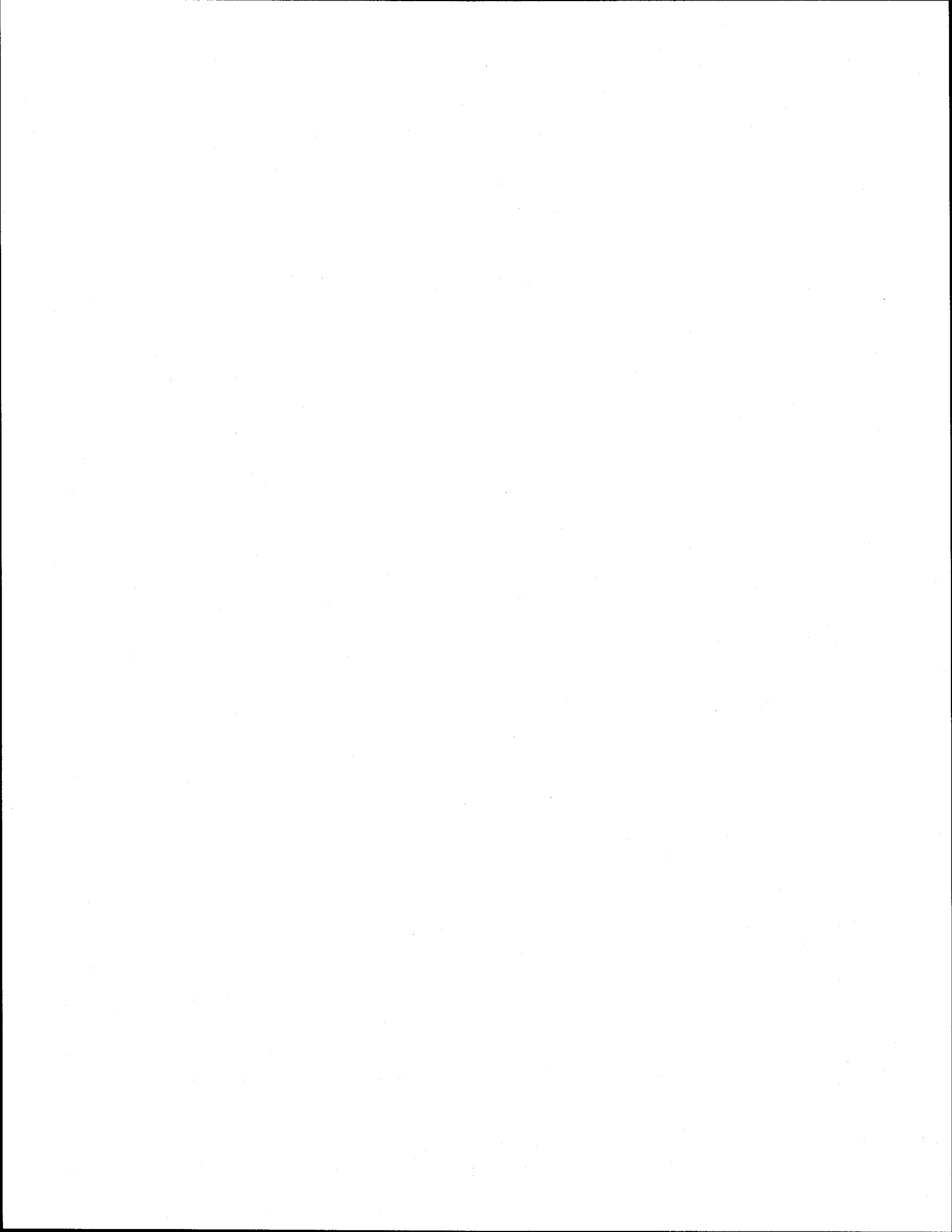
General Requirements	Qty	Unit	UC of Mater	Tot Mat	UC of Labor	Tot Lab	Tot LM & L
Mobilization	1	LS	75000	\$75,000.00	175000	\$175,000.00	\$250,000.00
Temporary Electric	1	LS	\$2,500.00	\$2,500.00	\$3,000.00	\$3,000.00	\$5,500.00
Construction Fence: Rented Chain Link Fence- 8-0" HT	5,700	LF	\$15.00	\$85,500.00	\$0.00	\$0.00	\$85,500.00
Construction Fence: Rented Chain Link Fence- 8-0" HT	10,100	LF	\$2.00	\$20,200.00	\$30.00	\$303,000.00	\$323,200.00
Temporary Tree and Plant Protection	115	EA	\$50.00	\$5,750.00	\$150.00	\$17,250.00	\$23,000.00
Tree Root Protection @ Oak Allee (Plywood Boards)	640	SF	\$0.75	\$480.00	\$2.00	\$1,280.00	\$1,760.00
Temporary Tree Protection for Grove	1,240	LF	\$3.00	\$3,720.00	\$6.00	\$7,440.00	\$11,160.00
Compensatory Crown Pruning	248	TU		\$0.00	\$300.00	\$74,400.00	\$74,400.00
Decompaction	56	TU		\$0.00	\$300.00	\$16,800.00	\$16,800.00
Remove Bench + Dispose Existing Benches	19	ea		\$0.00	\$200.00	\$3,800.00	\$3,800.00
Remove Existing Light Bollard	3	ea		\$0.00	\$1,000.00	\$3,000.00	\$3,000.00
Remove Existing Well House Shed (includes electrical	1	ea		\$0.00	\$5,000.00	\$5,000.00	\$5,000.00
Sawcut Pavement	200	lf	\$1.00	\$200.00	\$4.00	\$800.00	\$1,000.00
Handling, Transport and Disposal of Contaminated Mat	2,200	cy	\$90.00	\$198,000.00	\$120.00	\$264,000.00	\$462,000.00
Concrete Bench Pads	24	ea	\$500.00	\$12,000.00	\$1,000.00	\$24,000.00	\$36,000.00
Concrete Curb	183	lf	\$5.00	\$915.00	\$15.00	\$2,745.00	\$3,660.00
Concrete Footing (Drains)	1	ea	\$50.00	\$50.00	\$100.00	\$100.00	\$150.00
Concrete Curbwall	20	LF	\$25.00	\$500.00	\$50.00	\$1,000.00	\$1,500.00
Integral Colored Concrete Step Ramp	34	CY	\$210.00	\$7,140.00	\$1,000.00	\$34,000.00	\$41,140.00
Concrete Slab for Sheds	2	CY	\$150.00	\$300.00	\$500.00	\$1,000.00	\$1,300.00
Steel Bar Reinforcement	2,000	lb	\$1.00	\$2,000.00	\$2.00	\$4,000.00	\$6,000.00
Pipe Rail Railings	20	LF	\$50.00	\$1,000.00	\$50.00	\$1,000.00	\$2,000.00
Hand Railings	100	LF	\$30.00	\$3,000.00	\$60.00	\$6,000.00	\$9,000.00
Finishes							
Exterior Painting (included with 05 52 13)							
Remove, Salvage + Store Existing Benches	24	EA	\$50.00	\$1,200.00	\$300.00	\$7,200.00	\$8,400.00

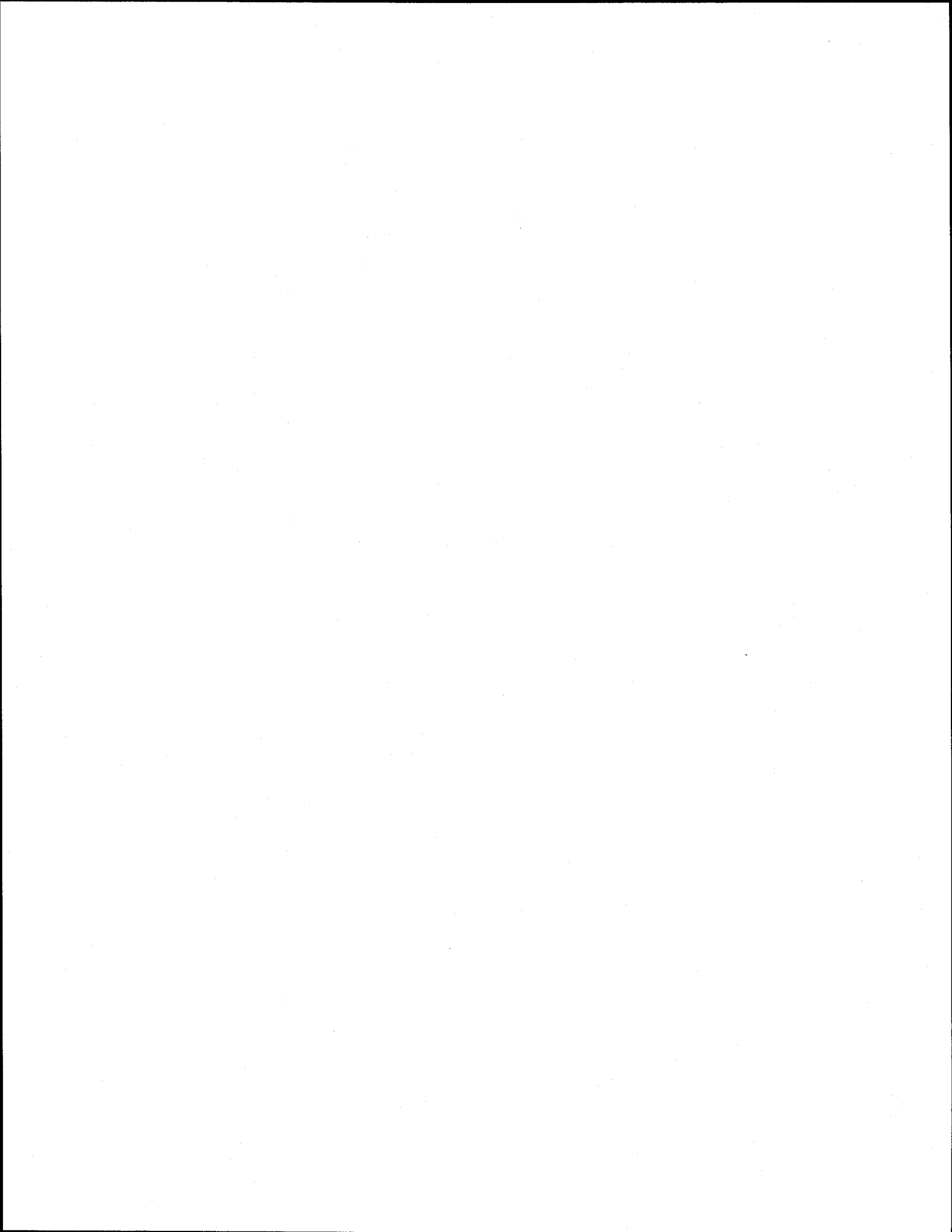


Reset Existing Benches	24 ea			\$0.00	\$500.00		\$12,000.00	\$12,000.00
Remove, Store & Reset Existing Signage	1 LS		\$0.00	\$3,000.00		\$3,000.00	\$3,000.00	
Remove, Store & Reset Existing Bike Rack	1 LS		\$0.00	\$1,200.00		\$1,200.00	\$1,200.00	
Prefabricated Shed	2 ea		\$25,000.00	\$50,000.00	\$15,000.00	\$30,000.00	\$80,000.00	
5-1/4" Cast Iron Valve Box	3 ea		\$300.00	\$900.00	\$500.00	\$1,500.00	\$2,400.00	
3/4" Hose Bibb	4 ea		\$400.00	\$1,600.00	\$210.00	\$840.00	\$2,440.00	
3" Dia. Gate Valve	1 ea		\$100.00	\$100.00	\$840.00	\$840.00	\$940.00	
2" Dia. Air Release Valve	1 ea		\$750.00	\$750.00	\$840.00	\$840.00	\$1,590.00	
3" Dia. Check Valve	1 ea		\$1,500.00	\$1,500.00	\$840.00	\$840.00	\$2,340.00	
Irrigation Filter	1 ea		\$500.00	\$500.00	\$500.00	\$500.00	\$1,000.00	
Pipe and Valve Identification	8 ea		\$100.00	\$800.00	\$131.25	\$1,050.00	\$1,850.00	
3" Copper Tubing Type 'L'	40 LF		\$60.00	\$2,400.00	\$26.25	\$1,050.00	\$3,450.00	
Variable Frequency Drive Motor Starter	2 ea		\$2,800.00	\$5,600.00	\$1,200.00	\$2,400.00	\$8,000.00	
5 0 0 KCML Wire	3,780 LF		\$22.00	\$83,160.00	\$7.00	\$26,460.00	\$109,620.00	
1/0 AWG Wire	945 LF		\$6.00	\$5,670.00	\$5.00	\$4,725.00	\$10,395.00	
#2 AWG Wire	160 LF		\$5.00	\$800.00	\$4.00	\$640.00	\$1,440.00	
#6 AWG Wire	280 LF		\$2.00	\$560.00	\$3.00	\$840.00	\$1,400.00	
#8 AWG Wire	70 LF		\$1.00	\$70.00	\$3.00	\$210.00	\$280.00	
#12 AWG Wire	530 LF		\$1.00	\$530.00	\$3.00	\$1,590.00	\$2,120.00	
24 AWG Twisted Shielded control Wire	40 LF		\$2.00	\$80.00	\$2.00	\$80.00	\$160.00	
Grounding and Bonding	1 ls		\$300.00	\$300.00	\$700.00	\$700.00	\$1,000.00	
4" RGS Conduit	890 LF		\$20.00	\$17,800.00	\$30.00	\$26,700.00	\$44,500.00	
2" RGS Conduit	30 LF		\$20.00	\$600.00	\$37.00	\$1,110.00	\$1,710.00	
1-1/2" Conduit	60 LF		\$20.00	\$1,200.00	\$40.00	\$2,400.00	\$3,600.00	

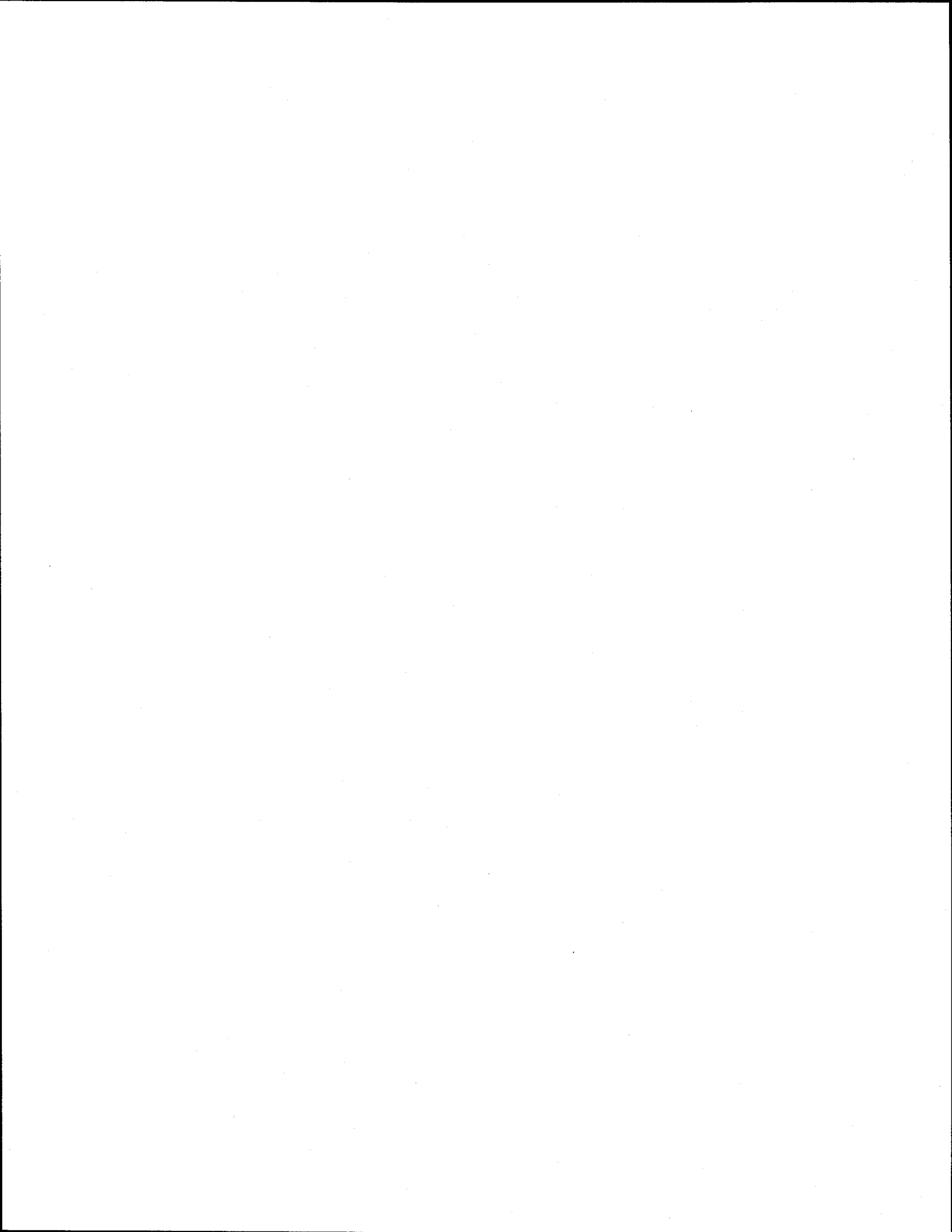


3/4" Conduit	170 LF	\$3.00	\$510.00	\$18.00	\$3,060.00	\$3,570.00
Junction Box	3 ea	\$1,200.00	\$3,600.00	\$1,000.00	\$3,000.00	\$6,600.00
Pullbox	8 ea	\$2,000.00	\$16,000.00	\$1,000.00	\$8,000.00	\$24,000.00
60A Electrical Panel	2 ea	\$1,000.00	\$2,000.00	\$2,000.00	\$4,000.00	\$6,000.00
30A Disconnect Switch	2 ea	\$300.00	\$600.00	\$350.00	\$700.00	\$1,300.00
Connect to existing 42 CKT panel - 44 0A	1 ea	\$150.00	\$150.00	\$350.00	\$350.00	\$500.00
GFI Receptacle	6 ea	\$100.00	\$600.00	\$350.00	\$2,100.00	\$2,700.00
Switch	2 ea	\$80.00	\$160.00	\$350.00	\$700.00	\$860.00
Fluorescent Fixtures	4 ea	\$400.00	\$1,600.00	\$700.00	\$2,800.00	\$4,400.00
Connect to existing lines	1 ea	\$300.00	\$300.00	\$1,000.00	\$1,000.00	\$1,300.00
Clear and Grub	1 ea		\$0.00	\$15,000.00	\$15,000.00	\$15,000.00
Excavation (Pavement Removals)	2,500 CY		\$0.00	\$120.00	\$300,000.00	\$300,000.00
Remove Selected Trees, Including Stump	5 ea		\$0.00	\$1,500.00	\$7,500.00	\$7,500.00
Remove Existing Concrete Slab	1 ea		\$0.00		\$0.00	\$0.00
Remove Existing Concrete Curb	420 lf		\$0.00	\$10.00	\$4,200.00	\$4,200.00
Remove Existing Timber Curb	40 lf		\$0.00	\$5.00	\$200.00	\$200.00
General Fill	100 cy	\$25.00	\$2,500.00	\$25.00	\$2,500.00	\$5,000.00
6" Structural Soil Base @ Oak Allee Paths	750 CY	\$50.00	\$37,500.00	\$25.00	\$18,750.00	\$56,250.00
Excavation (New Work)	1,100 CY		\$0.00	\$75.00	\$82,500.00	\$82,500.00
Excavation- Hand Excavation (6" depth Oak Allee)	1 LS		\$0.00	\$1,500.00	\$1,500.00	\$1,500.00
Base Aggregate Stone (Under Paving & Bench Pads)	2,800 Ton	\$39.00	\$109,200.00	\$24.00	\$67,200.00	\$176,400.00
New Topsoil	1,600 CY	\$25.00	\$40,000.00	\$15.00	\$24,000.00	\$64,000.00
Silt Fence	10,100 lf	\$2.00	\$20,200.00	\$5.00	\$50,500.00	\$70,700.00
Stabilized Construction Access & Haul Road	950 SY	\$5.00	\$4,750.00	\$10.00	\$9,500.00	\$14,250.00
Geogrid Reinforcement (Construction Access)	950 SY	\$1.00	\$950.00	\$2.00	\$1,900.00	\$2,850.00
Hay Bales	80 lf	\$3.00	\$240.00	\$4.00	\$320.00	\$560.00
Snow Fence	1,200 lf	\$2.00	\$2,400.00	\$3.00	\$3,600.00	\$6,000.00
Inlet Protection	2 ea	\$50.00	\$100.00	\$100.00	\$200.00	\$300.00





Mulch	1,600	SY	\$2.00	\$3,200.00	\$6.00	\$9,600.00	\$12,800.00
Sod	80,000	SF	\$0.50	\$40,000.00	\$1.50	\$120,000.00	\$160,000.00
Grass Seed "Fescue Mix"	35,000	SF	\$0.05	\$1,750.00	\$0.10	\$3,500.00	\$5,250.00
Fine grading adjacent to path	1	LS	\$0.00	\$0.00	\$80,000.00	\$80,000.00	\$80,000.00
Restore landscape areas disturbed by irrigation installat	1	LS	\$0.00	\$0.00	\$30,000.00	\$30,000.00	\$30,000.00
Groundcover (Cotoneasters)	30	ea	\$15.00	\$450.00	\$25.00	\$750.00	\$1,200.00
Transplant Existing Trees (+/- 3 0) to On-Site Location	32	ea	\$200.00	\$6,400.00	\$1,800.00	\$57,600.00	\$64,000.00
Well Testing	1	LS	\$0.00	\$0.00	\$3,000.00	\$3,000.00	\$3,000.00
Pressure Transducer	1	ea	\$7,000.00	\$7,000.00	\$1,050.00	\$1,050.00	\$8,050.00
Dresser Coupling	1	ea	\$850.00	\$850.00	\$840.00	\$840.00	\$1,690.00
1-1/2" Plug Valve	5	ea	\$350.00	\$1,750.00	\$210.00	\$1,050.00	\$2,800.00
1-1/2" Pipe Reducer	4	ea	\$50.00	\$200.00	\$105.00	\$420.00	\$620.00
1- 1/2" Copper Tubing Type 'K'	560	LF	\$28.00	\$15,680.00	\$7.88	\$4,410.00	\$20,090.00
2" Copper Tubing Type 'K'	620	LF	\$30.00	\$18,600.00	\$7.11	\$4,410.00	\$23,010.00
3" Copper Tubing Type 'K'	50	LF	\$55.00	\$2,750.00	\$16.80	\$840.00	\$3,590.00
Ground Hydrants - 1"	4	ea	\$1,300.00	\$5,200.00	\$367.50	\$1,470.00	\$6,670.00
Submersible Well Pump (7.5 HP)	1	ea	\$8,500.00	\$8,500.00	\$1,470.00	\$1,470.00	\$9,970.00
Broken Stone	60	Cy	\$50.00	\$3,000.00	\$40.00	\$2,400.00	\$5,400.00
Trench Drain	68	Cy	\$125.00	\$8,500.00	\$200.00	\$13,600.00	\$22,100.00
Catch Basin	2	ea	\$1,300.00	\$2,600.00	\$3,000.00	\$6,000.00	\$8,600.00
Precast Concrete Dry Well	1	ea	\$1,000.00	\$1,000.00	\$3,000.00	\$3,000.00	\$4,000.00
Area Drain	1	ea	\$800.00	\$800.00	\$700.00	\$700.00	\$1,500.00
Clean Out	1	ea	\$150.00	\$150.00	\$100.00	\$100.00	\$250.00
Polyethylene Corrugated Pipe (12" Dia)	70	LF	\$15.00	\$1,050.00	\$50.00	\$3,500.00	\$4,550.00
Ductile Iron Pipe (6"Dia)	110	LF	\$40.00	\$4,400.00	\$80.00	\$8,800.00	\$13,200.00
Ductile Iron Pipe (4"Dia)	20	LF	\$25.00	\$500.00	\$70.00	\$1,400.00	\$1,900.00
				\$1,495,996.00		\$3,017,135.00	\$4,513,131.00



Tax ID #: _____

PIN#: _____

SCHEDULE B - Subcontractor Utilization Plan – Part II: Bidder/Proposer Subcontracting Plan

This page and the next (Part II herein) are to be completed by the bidder/proposer. **AFFIRMATIONS: Bidder/proposer must check the applicable boxes below, affirming compliance with M/WBE requirements.**

Bidder/proposer AFFIRMS or DOES NOT AFFIRM [statement below]

It is a material term of the contract to be awarded that, with respect to the total amount of the contract to be awarded, bidder/proposer will award one or more subcontracts for amounts under one million dollars, sufficient to meet or exceed the Target Subcontracting Percentage (as set forth in Part I) unless it obtains a full or partial waiver thereof, and it will award subcontracts sufficient to meet or exceed the Total Participation Goals (as set forth in Part I) unless such goals are modified by the Agency.

Bidder/proposer AFFIRMS that it intends to meet or exceed the Target Subcontracting Percentage (as set forth in Part 1); or
 AFFIRMS that it has obtained a full/partial pre-award waiver of the Target Subcontracting Percentage (as set forth in Part I) and intends to award the modified Target Subcontracting Percentage, if any; or
 DOES NOT AFFIRM

Section I: Prime Contractor Contact Information

Tax ID # 26-4699648 FMS Vendor ID # _____
Business Name Galvin Bros., Inc/Madhue Contracting, Inc, a joint venture Contact Person Greg Hayes
Address 149 Steamboat Road, Great Neck, NY 11024
Telephone # 516-466-3785 Email g.hayes@galvinbrothers.com

Section II: General Contract Information

1. Define the industry in which work is to be performed.

- Construction includes all contracts for the construction, rehabilitation, and/or renovation of physical structures. This category does include CM Build as well as other construction related services such as: demolition, asbestos and lead abatement, and painting services, carpentry services, carpet installation and removal, where related to new construction and not maintenance.
- Professional Services are a class of services that typically require the provider to have some specialized field or advanced degree. Services of this type include: legal, management consulting, information technology, accounting, auditing, actuarial, advertising, health services, pure construction management, environmental analysis, scientific testing, architecture and engineering, and traffic studies, and similar services.

a. Type of work on Prime Contract (Check one):

b. Type of work on Subcontract (Check all that apply):

Construction Professional Services Construction Professional Services Other

2. What is the expected percentage of the total contract dollar value that you expect to award to all subcontracts? _____ %

3. Will you award subcontract(s) in amounts below \$ 1 million for construction and/or professional services contracts within the first 12 months of the notice to proceed on the contract? Yes No

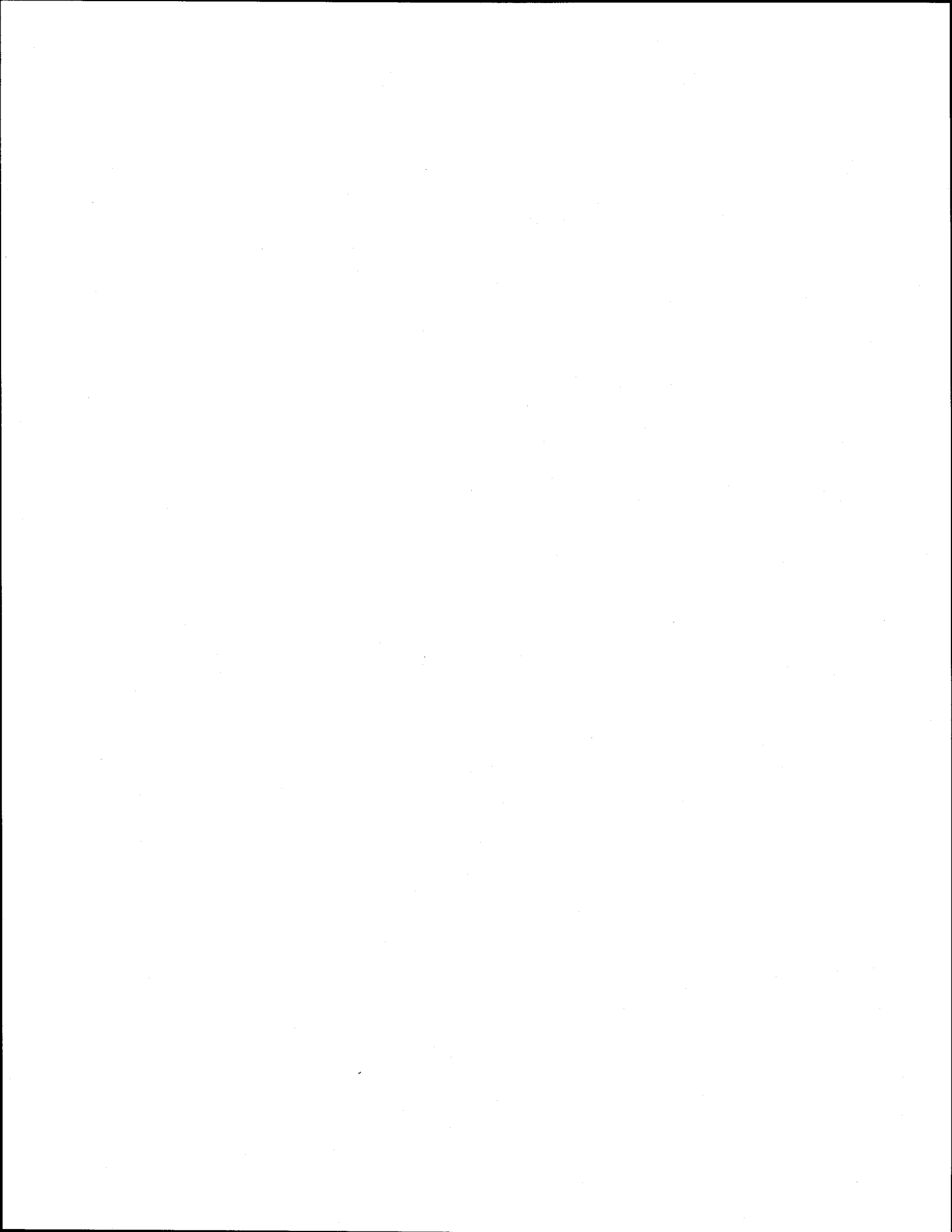
Section III: Subcontractor Utilization Summary

IMPORTANT: If you do not anticipate that you will subcontract at the target level the agency has specified, because you will perform more of the work yourself, you must seek a waiver of the Target Subcontracting Percentage by completing p. 9).

Step 1:	Subcontracts under \$1M (4) (construction/professional services)	Total Bid/Proposal Value	Calculated Target Subcontracting Percentage
Calculate the percentage (of your total bid) that will go towards subcontracts under \$1M for construction and/or professional services	5,148,000	4513,131	32.9 %
		÷ \$ 4513,131 x 100 =	

- Subcontracts under \$1M (construction/professional services):** Enter the value you expect to award to subcontractors in dollars for amounts under \$1 million for construction and/or professional services. This value defines the amount that participation goals apply to, and will be entered into the first line of Step 2.
- Total Bid/Proposal Value:** Provide the dollar amount of the bid/proposal.
- Calculated Target Subcontracting Percentage:** The percentage of the total contract dollar value that will be awarded to one or more subcontractors for amounts under \$1 million for construction and/or professional services. This percentage must equal or exceed the percentage listed by the agency on page 1, at line (1).

NOTE: The "Calculated Target Subcontracting Percentage" MUST equal or exceed the Target Subcontracting Percentage listed by the agency on Page 6, Line (1).



Tax ID #: _____

PIN#: _____

SCHEDULE B - cont.

Step 2:

Calculate value of subcontractor participation goals

Subcontracts under \$1M
(construction/professional services)

a. Copy value from Step 1, line (4) – the total value of all expected subcontracts under \$1M for construction and/or professional services

\$ 14,950,000

b. * From line a. above, allocate the dollar value of "Subcontracts under \$1M" by Construction and Professional Services,

Construction

Professional Services

* If all subcontracts under \$1M are in one industry, enter '0' for the industry with no subcontracts.

* Amounts listed on these lines should add up to the value from line a.

Subcontracts under \$1M by Industry \$ 14,950,000

* For Construction enter percentage from line (2) from Page 6.

* For Professional Services enter percentage from line (3) from Page 6.

c. * **Total Participation Goals Percentages must be copied from Part I, lines (2) and (3).**

Total Participation Goals x 31 %

x — %

d. **Value of Total Participation Goals** \$ 4,603,500

Step 3:

Subcontracts in Amounts Under \$1 M Scope of Work – Construction

Landscape \$260,000 (MBE)
Plumbing \$90,000
Electric \$215,000
Irrigation \$280,000
Fencing \$200,000 (MBE)

Subcontracts in Amounts Under \$1 M Scope of Work – Professional Services

Pavers \$425,000
Railing \$15,000

Enter brief description of type(s) of subcontracts in amounts under \$1M anticipated, by type of work, not by name of subcontractor.

LANOSCAPE, PLUMBING, ELECTRIC, IRRIGATION, FENCING, PAVERS

Enter brief description of type(s) of subcontracts in amounts under \$1M anticipated, by type of work, not by name of subcontractor.

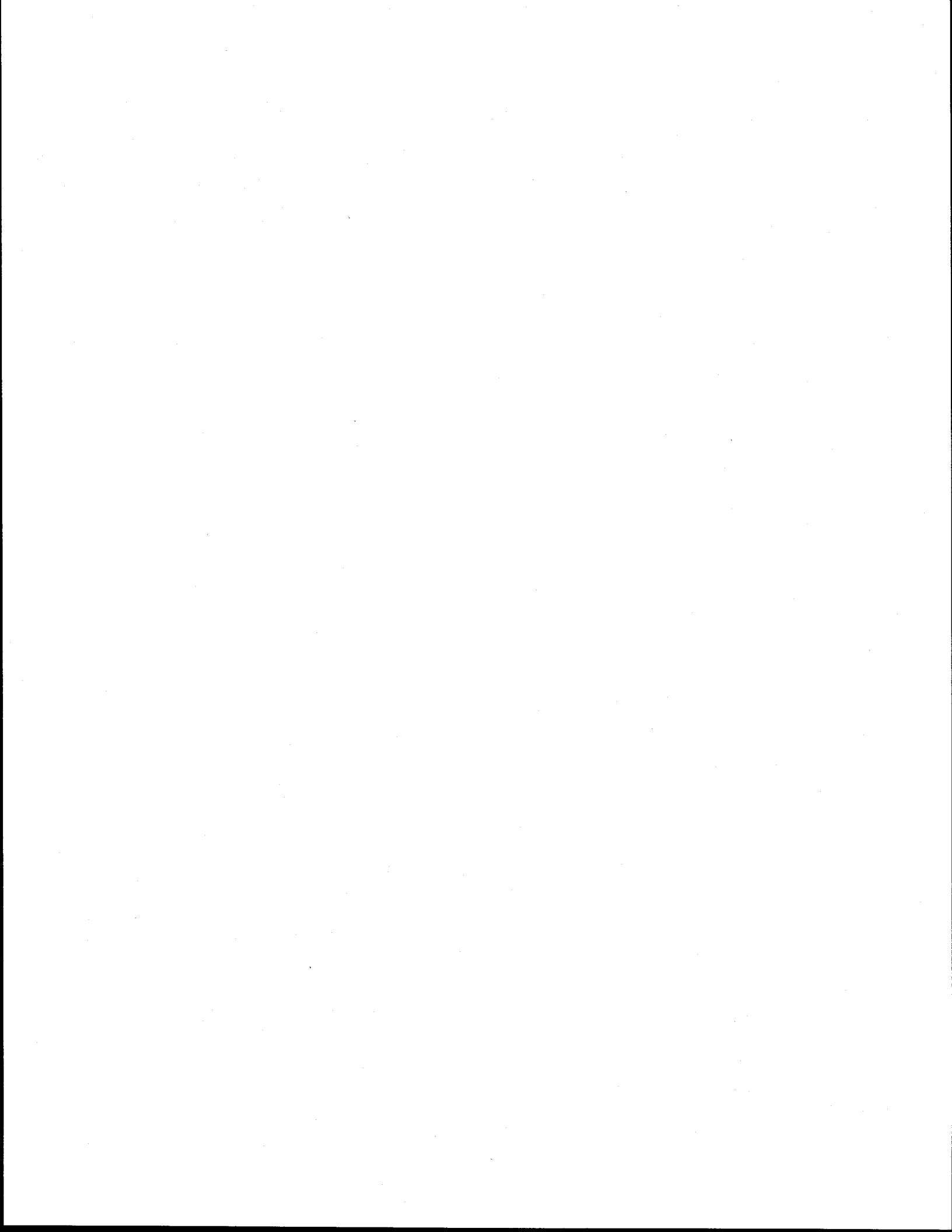
PAVERS, RAILING

Section IV: Vendor Certification and Required Affirmations

I hereby 1) acknowledge my understanding of the M/WBE requirements as set forth herein and the pertinent provisions of Local Law 129 of 2005, and the rules promulgated thereunder; 2) affirm that the information supplied in support of this subcontractor utilization plan is true and correct; 3) agree, if awarded this Contract, to comply with the M/WBE requirements of this Contract and the pertinent provisions of Local Law 129 of 2005, 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 subcontract(s) sufficient to meet the Target Subcontracting Percentage, unless a waiver is obtained, and the Vendor will award subcontract(s) sufficient to meet the Total Participation Goals unless such goals are modified by the Agency; and 5) agree and affirm, if awarded this contract the Vendor intends to make all reasonable, good faith efforts to meet the Target Subcontracting Percentage, or If the Vendor has obtained a waiver, the Vendor intends to meet the modified Target Subcontracting Percentage, if any, and the Vendor intends to solicit and obtain the participation of M/WBEs so as to meet the Total Participation Goals unless modified by the Agency.

Signature Edward P. Galvin
Print Name Edward P. Galvin

Date June 14, 2013
Title General Partner



BID BOND 1
FORM OF BID BOND

KNOW ALL MEN BY THESE PRESENTS. That we, Galvin Bros., Inc. / Madhue Contracting, Inc. a JV
149 Steamboat Road, Great Neck, NY 11024

hereinafter referred to as the "Principal", and Liberty Mutual Insurance Company
1200 MacArthur Blvd., Mahwah, NJ 07043

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

TEN PERCENT OF AMOUNT BID

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

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

Construction of Garden-Wide Pedestrian Pathway System, 43-50 Main St., Queens, NY - E-PIN: 85013B0102/DDC

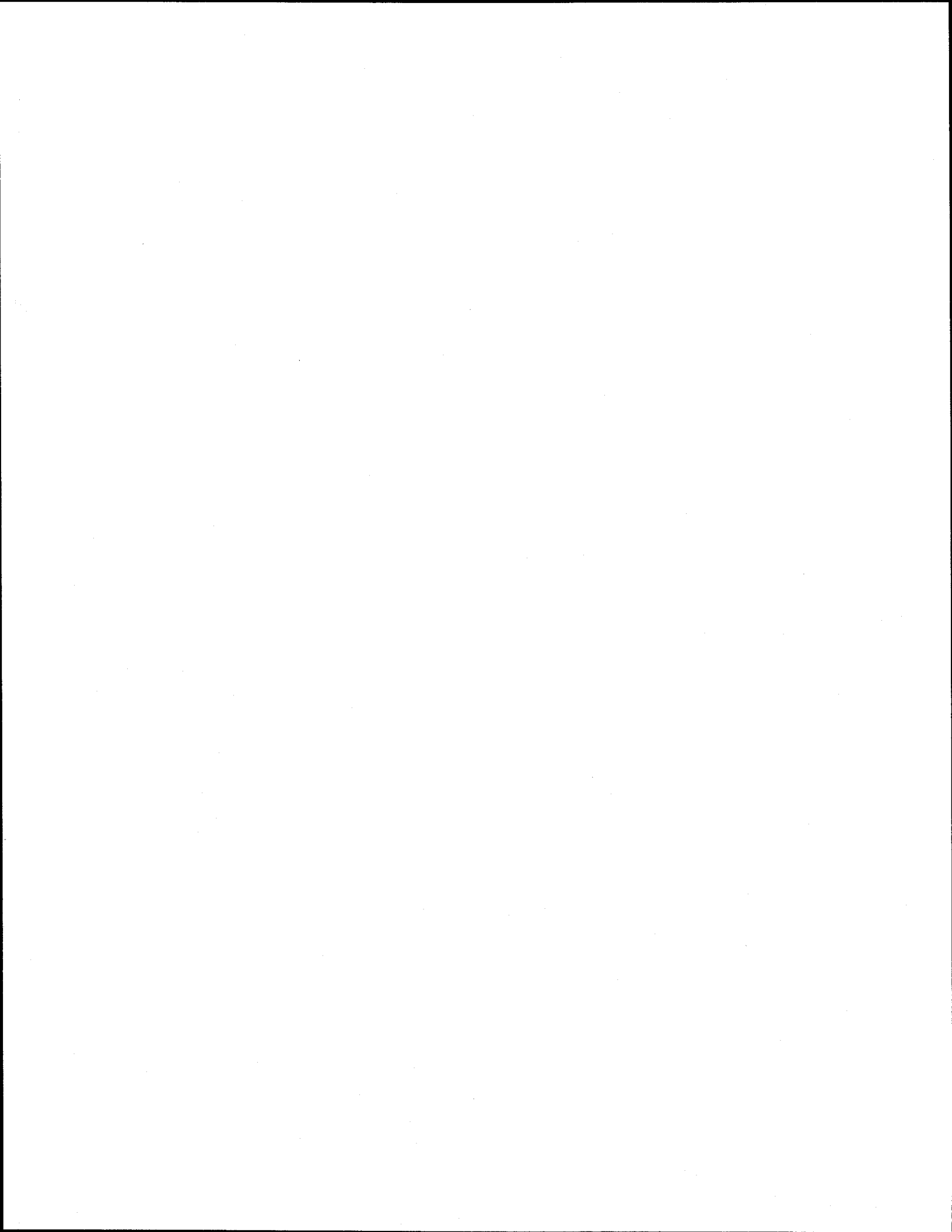
PIN: 8502013PV0020C - Proj. ID: PV272-PATH - Cont. #1 General Construction Work

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 the 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 12th day of June, 2013.

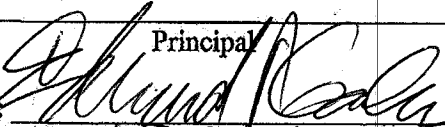
(Seal)

Galvin Bros., Inc. / Madhue Contracting, Inc. a JV

(L.S.)

Principal

By:


EDWARD P. GALVIN, General Partner

(Seal)

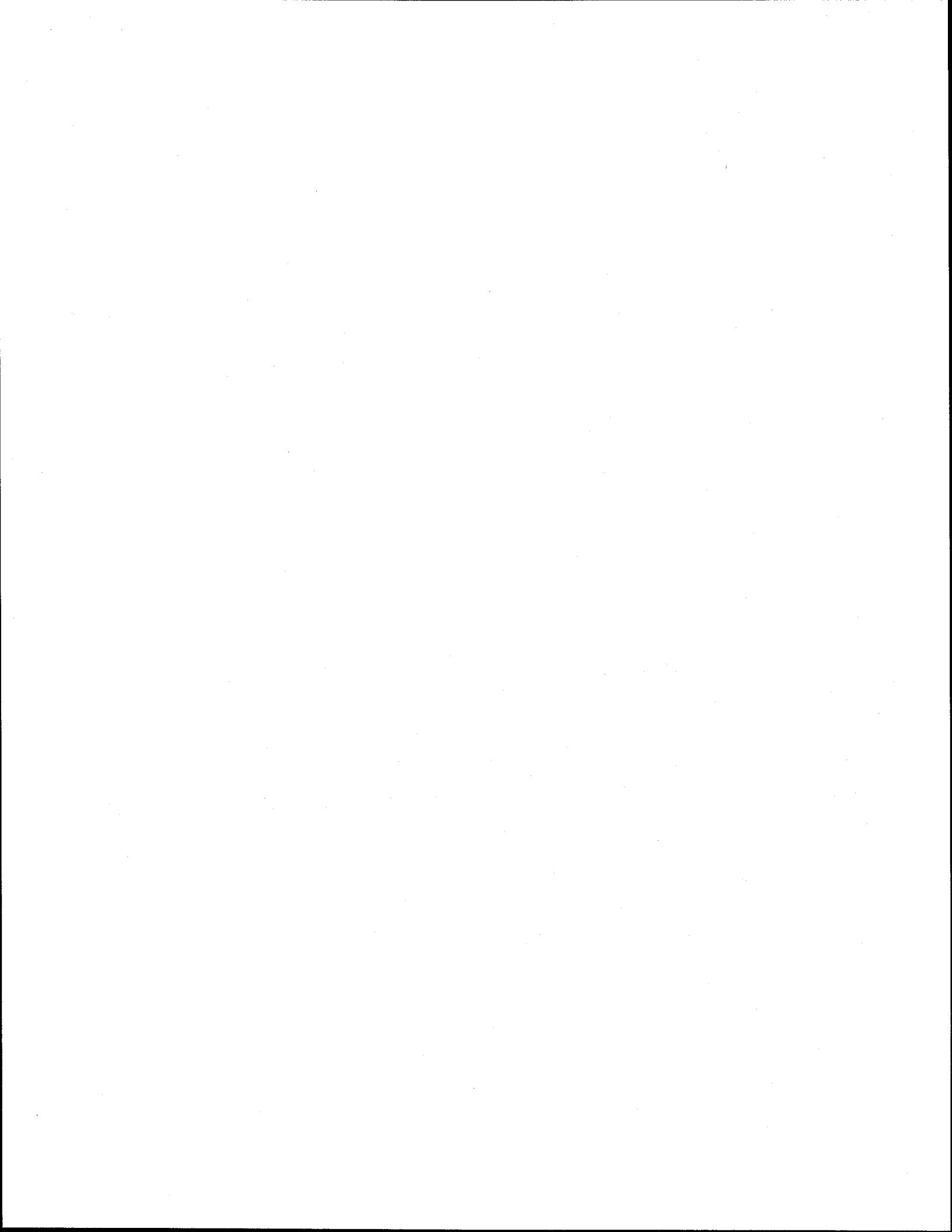
Liberty Mutual Insurance Company

Surety

Surety

By:


-Susan P. Hammel, Attorney-in-Fact



BID BOND 3

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

ACKNOWLEDGMENT OF PRINCIPAL, IF A PARTNERSHIP

State of New York County of NASSAU ss:
On this 12th day of JUNE, 2013, before me personally appeared EDWARD P. GALVIN to me known and known to me to be one of the members of the firm of GALVIN BROS, INC/MADHUF CONTRACTING, LLC ^{a joint venture} 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.

MAUREEN T. CONFORTIN
Notary Public, State of New York
No. 01CO4850066
Qualified in Suffolk County
Commission Expires January 2014

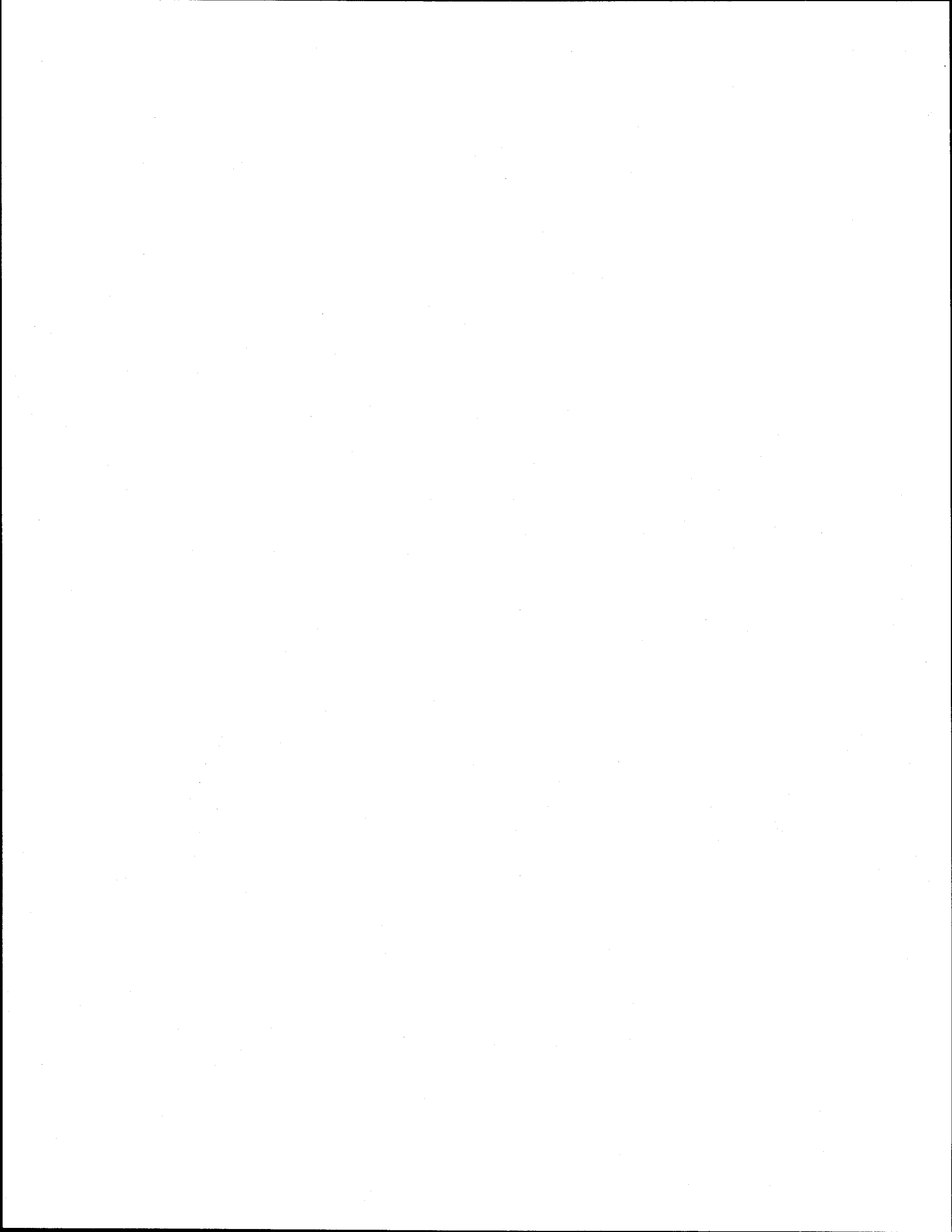
Maureen T. Confortin
Notary Public

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

AFFIX ACKNOWLEDGMENTS AND JUSTIFICATION OF SURETIES



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. 6085413

American Fire and Casualty Company
The Ohio Casualty Insurance Company

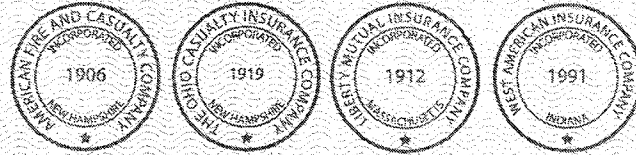
Liberty Mutual Insurance Company
West American Insurance Company

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, Joseph Sforzo; Robert Kempner; Robert W. O'Kane; Susan P. Hammel

all of the city of Plainview, 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 18th day of April, 2013.



American Fire and Casualty Company
The Ohio Casualty Insurance Company
Liberty Mutual Insurance Company
West American Insurance Company

By: Gregory W. Davenport
Gregory W. Davenport, Assistant Secretary

STATE OF WASHINGTON ss
COUNTY OF KING

On this 18th day of April, 2013, before me personally appeared Gregory W. Davenport, who acknowledged himself to be the Assistant Secretary of American Fire and Casualty Company, Liberty Mutual Insurance Company, The Ohio Casualty 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 Seattle, Washington, on the day and year first above written.



By: KD Riley
KD Riley, 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.

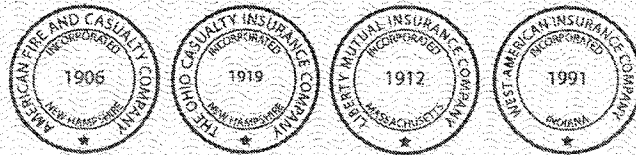
ARTICLE XIII – Execution of Contracts – SECTION 5. Surety Bonds and Undertakings. Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as 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 Gregory W. Davenport, 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, David M. Carey, 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.

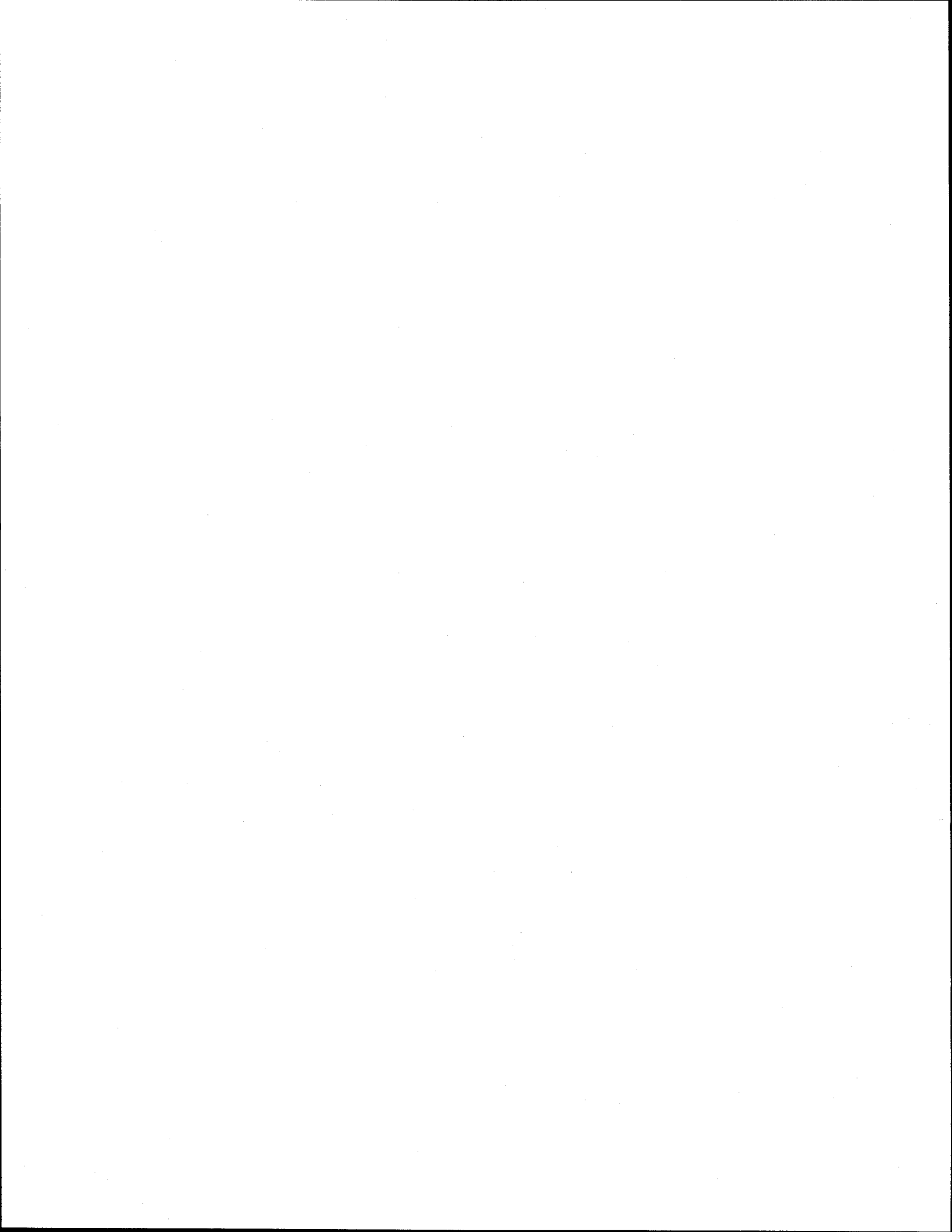
IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 12th day of June, 2013.



By: David M. Carey
David M. Carey, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, bank deposit, 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.





LIBERTY MUTUAL INSURANCE COMPANY
FINANCIAL STATEMENT — DECEMBER 31, 2012

Assets	Liabilities
Cash and Bank Deposits \$ 903,711,694	Unearned Premiums \$4,205,141,671
*Bonds — U.S Government 1,166,929,471	Reserve for Claims and Claims Expense 17,056,420,207
*Other Bonds 11,415,194,219	Funds Held Under Reinsurance Treaties 1,315,062,091
*Stocks 8,104,853,899	Reserve for Dividends to Policyholders 2,455,411
Real Estate 255,967,320	Additional Statutory Reserve 49,768,998
Agents' Balances or Uncollected Premiums 3,482,069,753	Reserve for Commissions, Taxes and
Accrued Interest and Rents 144,016,763	Other Liabilities <u>3,066,051,537</u>
Other Admitted Assets <u>14,732,623,458</u>	Total \$25,694,899,915
Total Admitted Assets <u>\$40,205,366,577</u>	Special Surplus Funds \$604,621,497
	Capital Stock 10,000,000
	Paid in Surplus 7,899,471,886
	Unassigned Surplus 5,996,373,279
	Surplus to Policyholders <u>14,510,466,662</u>
	Total Liabilities and Surplus <u>\$40,205,366,577</u>



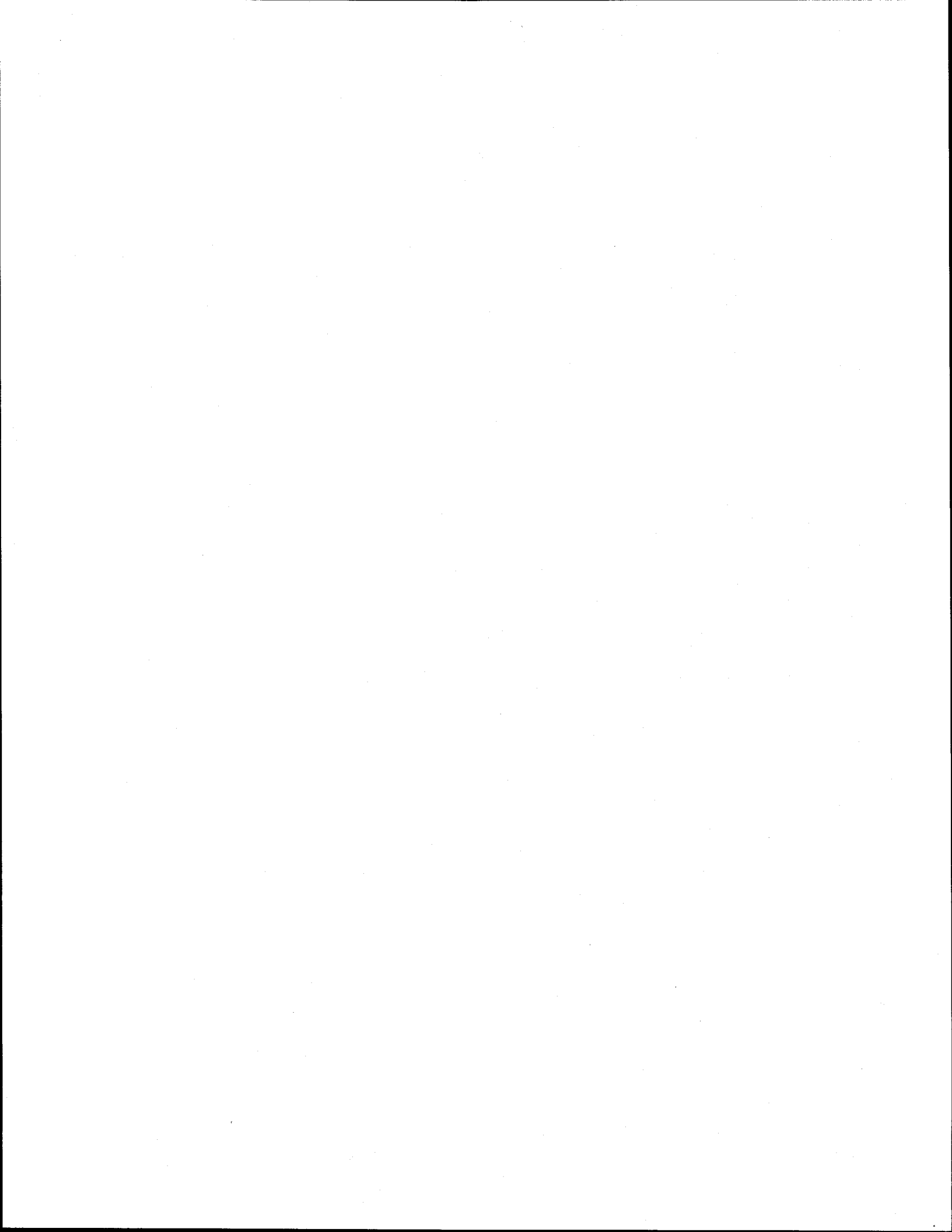
* Bonds are stated at amortized or investment value; Stocks at Association Market Values.
The foregoing financial information is taken from Liberty Mutual Insurance Company's financial statement filed with the state of Massachusetts Department of Insurance.

I, TIM MIKOLAJEWSKI, Assistant Secretary of Liberty Mutual 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, 2012, 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 25th day of March, 2013.

T. Mikolajewski

Assistant Secretary



ACKNOWLEDGEMENT OF PRINCIPAL, OF A CORPORATION

STATE OF _____

SS:

COUNTY OF _____

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 the foregoing instrument is such seal; that it was an affixed by order of the board of directors of said corporation; and that he signed his name thereto by like order.

Notary Public

ACKNOWLEDGEMENT OF SURETY

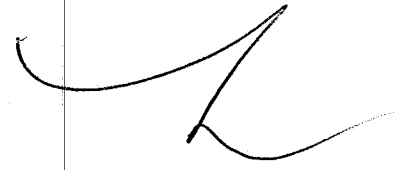
STATE OF New York

SS:

COUNTY OF Nassau

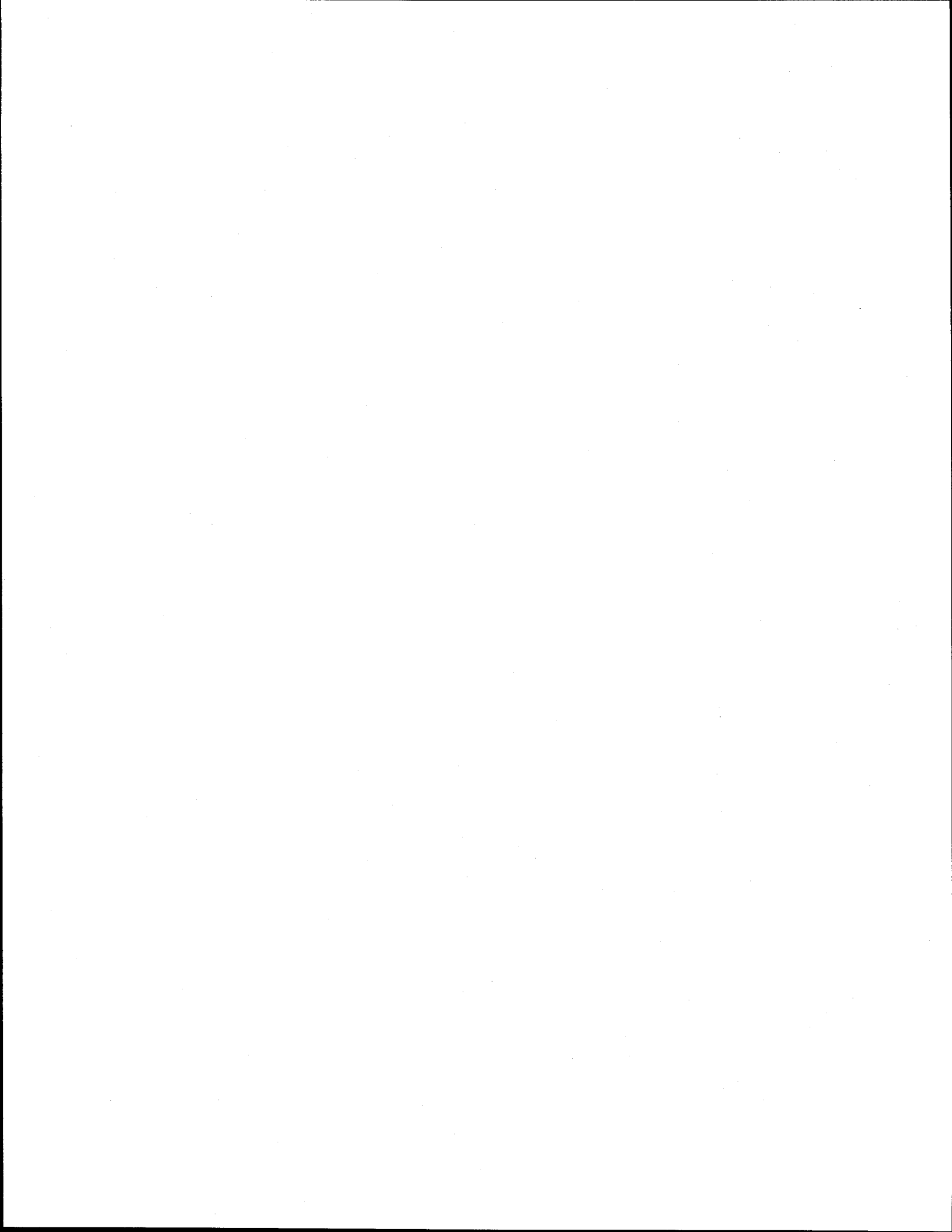
On this 12th day of June, 2013, before me personally came Susan P. Hammel to me known, who, being by me duly sworn, did depose and say that he is an Attorney-In-Fact of Liberty Mutual Insurance Company the corporation described in and which executed the within instrument; that he knows the corporate seal of said corporation; that the seal affixed to the within instrument is such corporate seal, and that he signed and said instrument and affixed the said seal as Attorney-In-Fact by authority of the Board of Directors of said corporation and by authority of this office under the Standing Resolutions thereof.

LYNN ANN INFANTI
Notary Public, State of New York
No. 011N6004351
Qualified in Suffolk County 2014
Commission Expires March 23, _____



My commission expires _____

Notary Public



**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.

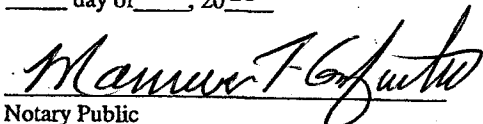
Dated: Great Neck, New York
June 14, 2013


SIGNATURE

Edward P. Galvin
PRINTED NAME

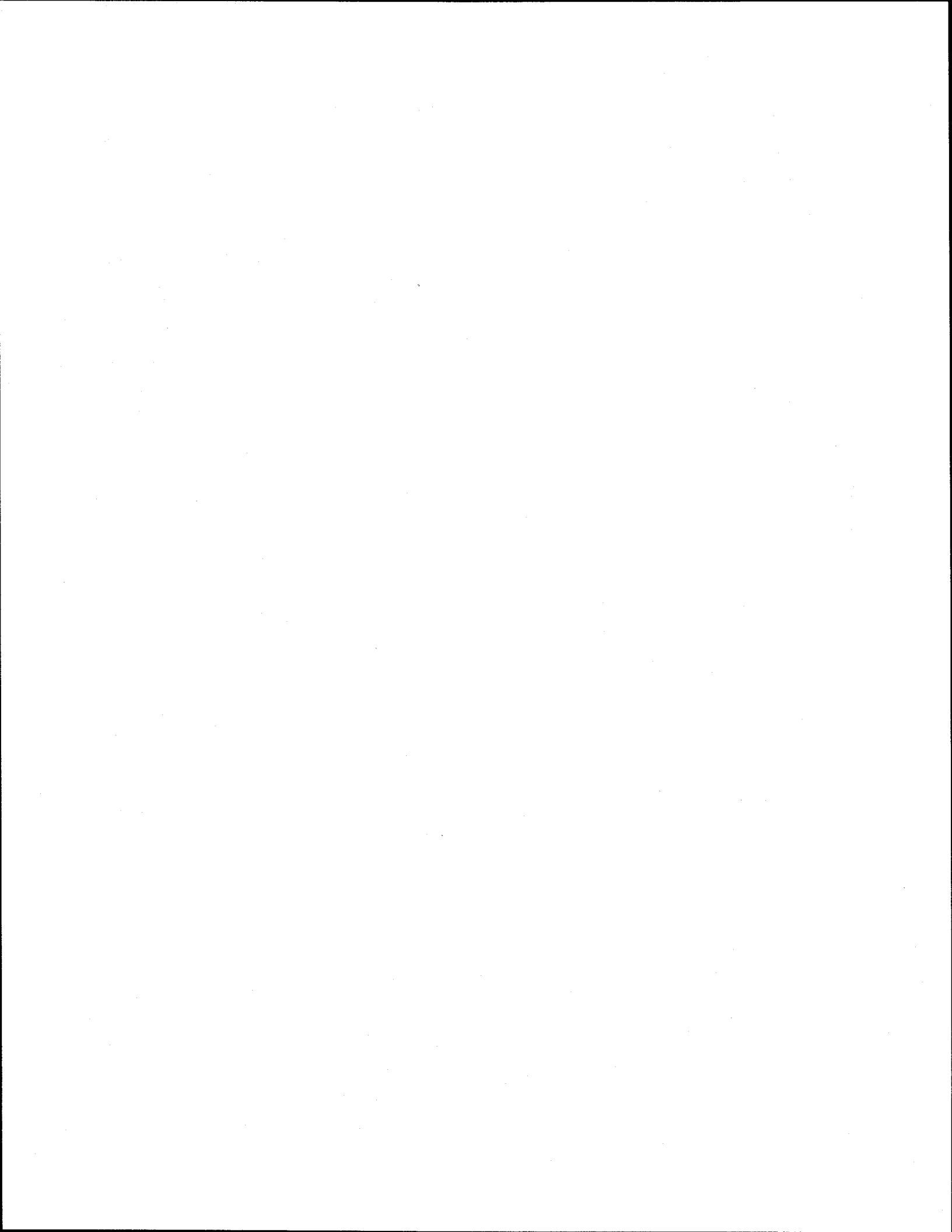
General Partner
TITLE

Sworn to before me this
14th day of June, 2013


Notary Public

Dated: June 14, 2013

MAUREEN T. CONFORTIN
Notary Public, State of New York
No. 01CO4850066
Qualified in Suffolk County
Commission Expires January 202014



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: Galvin Bros., Inc./Madhue Contracting, Inc., a joint venture

DDC Project Number: PV272-PATH

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

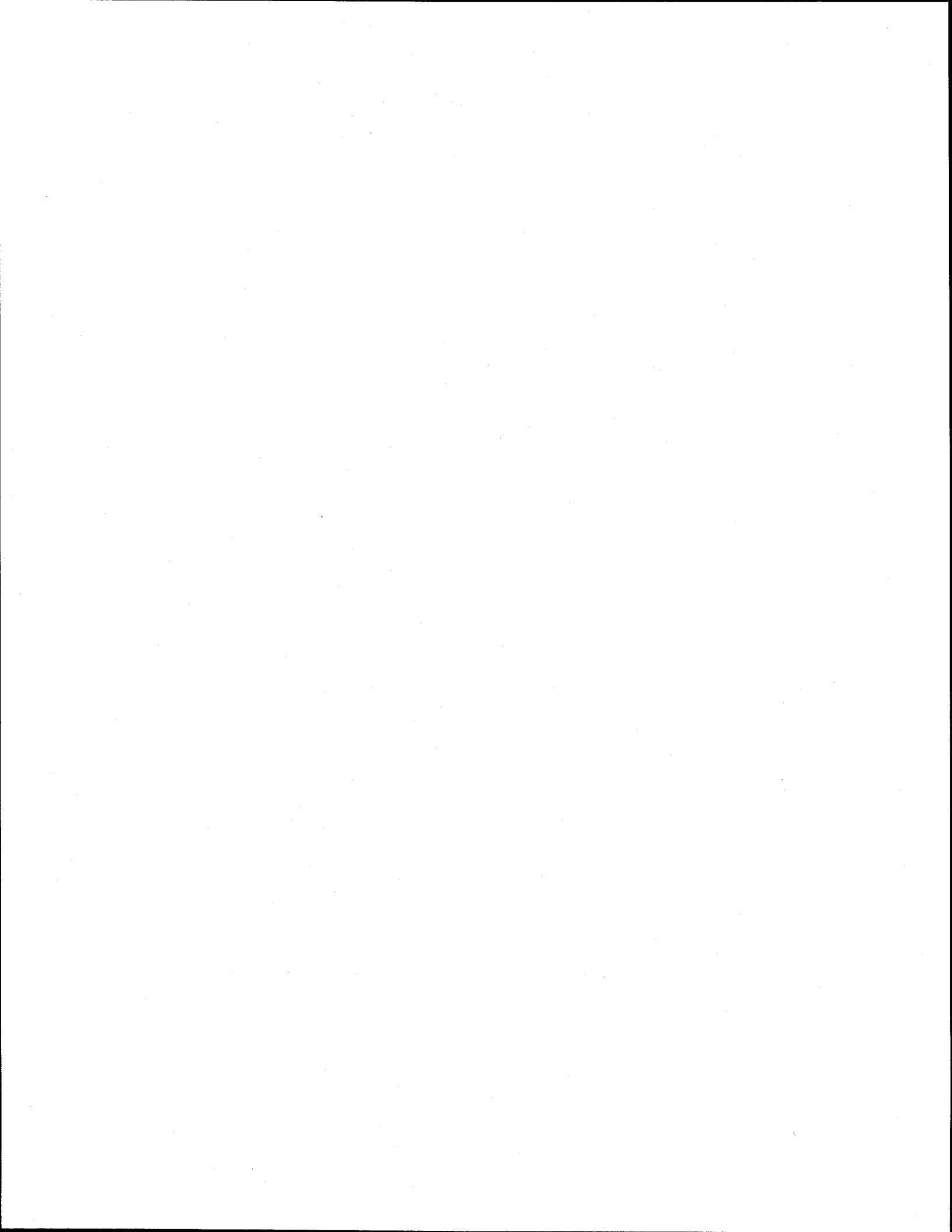
Yes Company has previously worked for DDC

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 type="checkbox"/>	<input type="checkbox"/>
Nonresidential Building Construction	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Heavy Construction, except building	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Highway and Street Construction	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Heavy Construction, except highways	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Plumbing, Heating, HVAC	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Painting and Paper Hanging	<input 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 type="checkbox"/>
Carpentry and Floor Work	<input type="checkbox"/>	<input type="checkbox"/>
Roofing, Siding, and Sheet Metal	<input type="checkbox"/>	<input type="checkbox"/>
Concrete Work	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Specialty Trade Contracting	<input type="checkbox"/>	<input type="checkbox"/>
Asbestos Abatement	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify)	<input type="checkbox"/>	<input type="checkbox"/>

3. Experience Modification Rate:

The Experience Modification Rate (EMR) is a rating generated by the National Council of Compensation Insurance (NCCI). This rating is used to determine the contractor's premium for worker's compensation insurance. The 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].

<u>YEAR</u>	<u>INTRASTATE RATE</u>	<u>INTERSTATE RATE</u>
2012	.89	
2011	.79	
2010	.88	

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:

No Contractor has received a willful violation issued by OSHA or New York City Department of Buildings (NYCDOB) within the last three years.

No Contractor has had an incident requiring OSHA notification within 8 hours (i.e., fatality, or hospitalization of three or more employees).

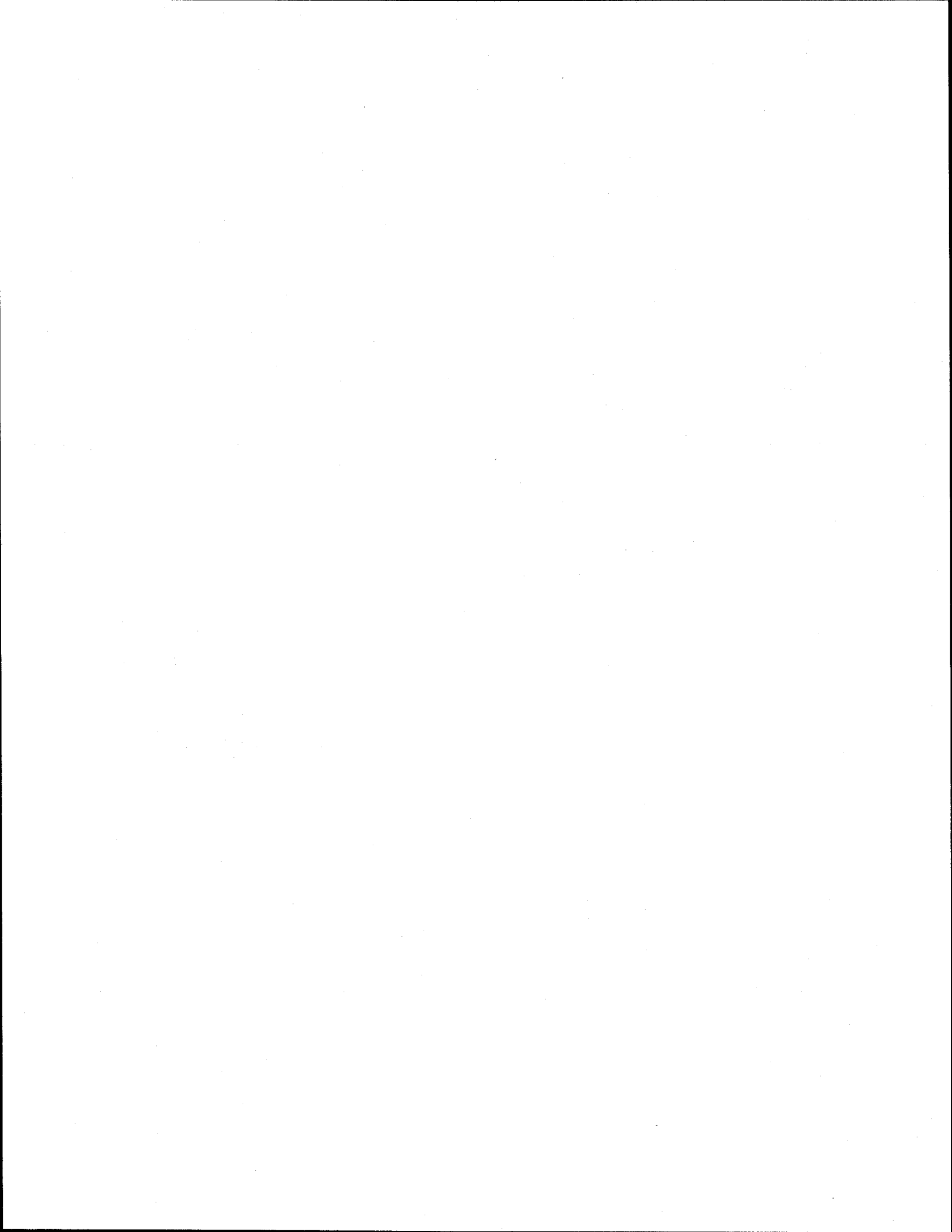
The Occupational Safety and Health Act (OSHA) of 1970 requires employers with ten or more employees, on a yearly basis to complete and maintain on file the form entitled "Log of Work-related Injuries and Illnesses". This form is commonly referred to as the OSHA 300 Log (OSHA 200 Log for 2001 and earlier).

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
2012	90,000	2.2
2011	87,600	2.3
2010	84,132	4.7

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)

No Contractor previously audited by the DDC Office of Site Safety.

DDC Project Number(s): _____

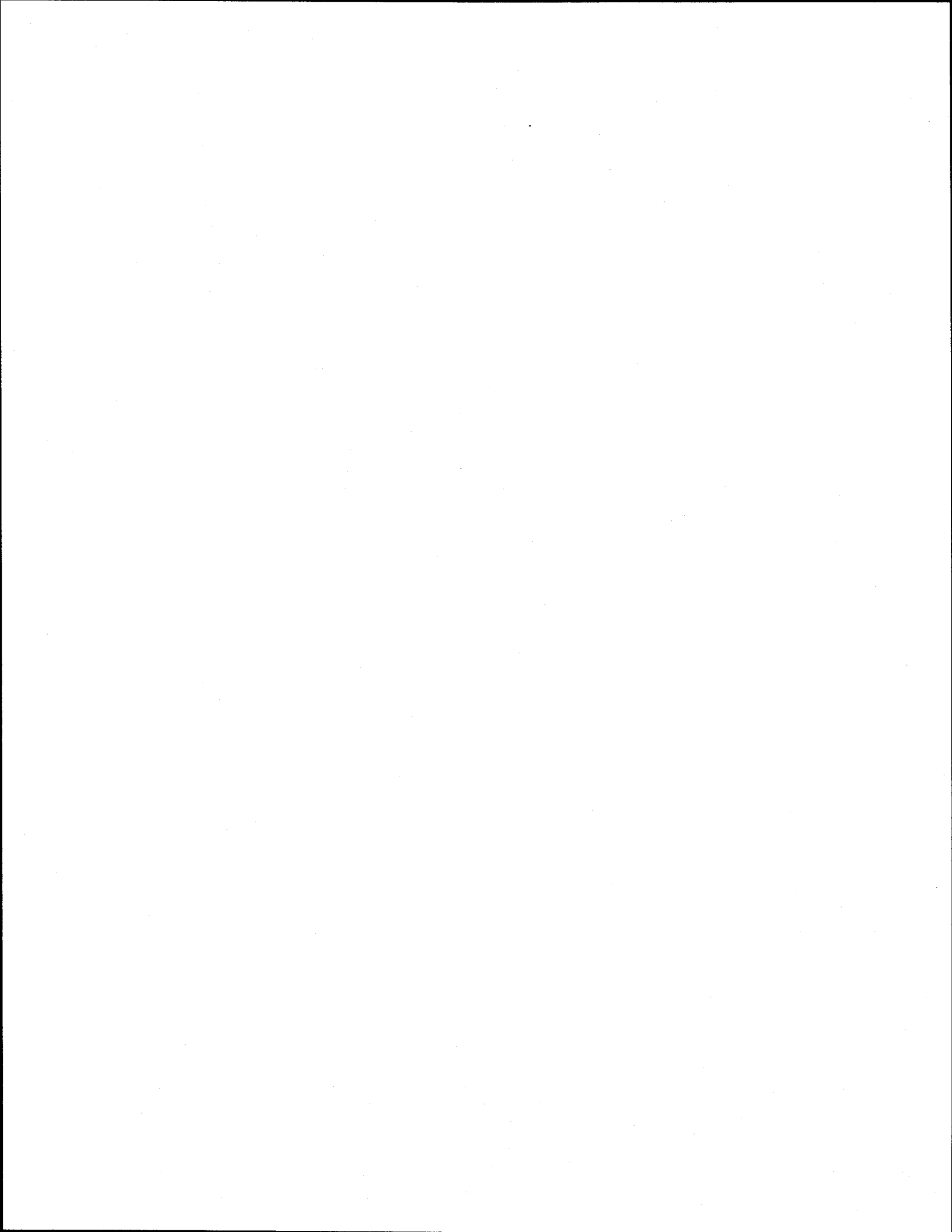
No Accident on previous DDC Project(s).

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].

Date: 6/14/13

By: 
 (Signature of Owner, Partner, Corporate Officer)
 Edward P. Galvin

Title: General Partner



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

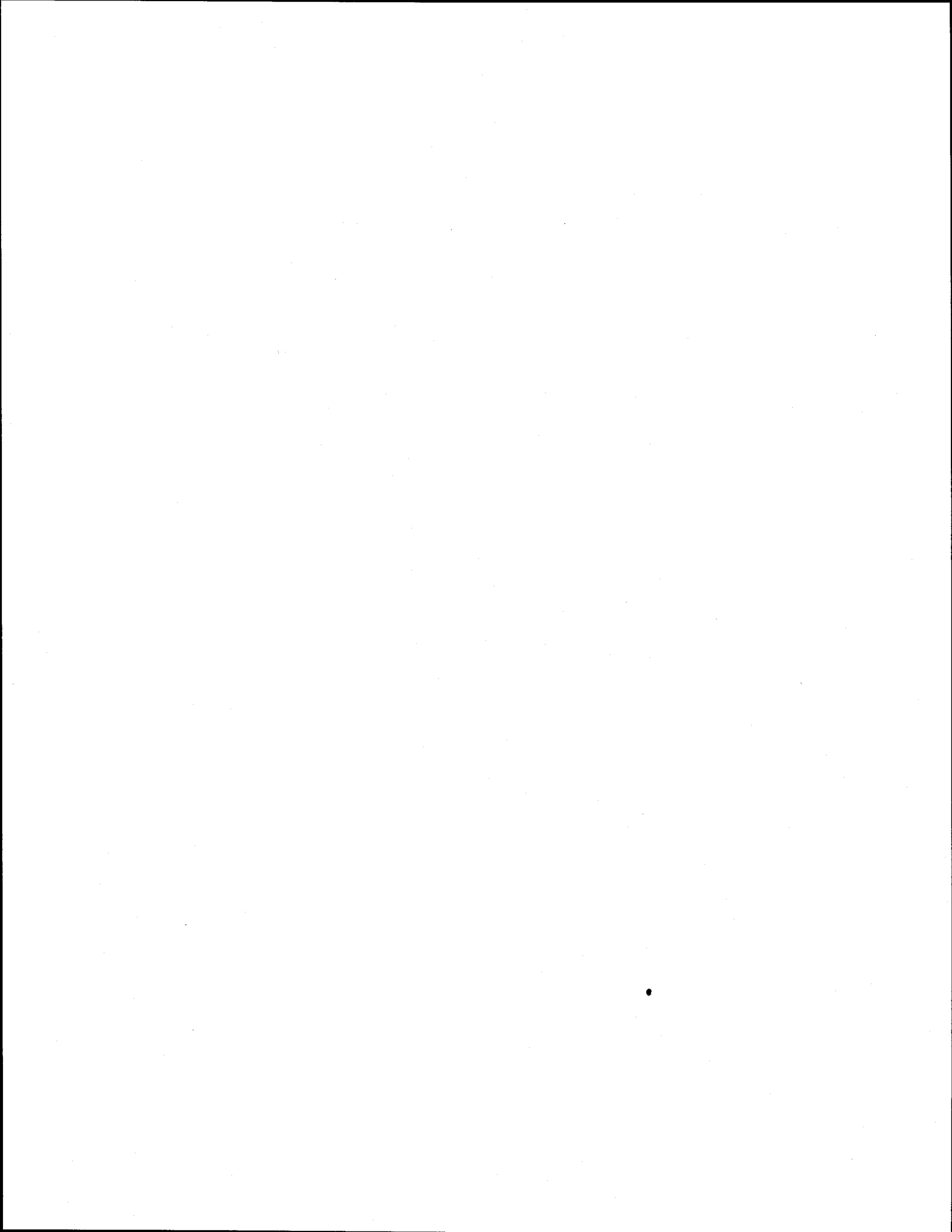
CONSTRUCTION EMPLOYMENT REPORT

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
- 2a. If you are certified as an MBE, WBE, or LBE, what city/state agency are you certified with?
N/A 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

PART I: CONTRACTOR/SUBCONTRACTOR INFORMATION

5. 26-4699648 g.hayes@galvinbrothers.com
Employer Identification Number or Federal Tax I.D./ Email Address
6. Galvin Bros., Inc./Madhue Contracting, Inc., a joint venture
Company Name
7. 149 Steamboat Road, Great Neck, New York 11024
Company Address and Zip Code
8. Edward P. Galvin 516-466-3785
Chief Operating Officer Telephone Number
9. SAME
Designated Equal Opportunity Compliance Officer Telephone Number
(If same as Item #7, write "same")
10. Same
Name of Prime Contractor and Contact Person
(If same as Item #5, write "same")
11. Number of employees in your company: 60



12. Contract information:

- (a) NYCDDC (b) _____
Contracting Agency (City Agency) Contract Amount
- (d) 85013B0102/DDC PIN: 8502013PV0020C (e) _____
Procurement Identification Number (PIN) Contract Registration Number (CT#)
- (f) _____ (g) _____
Projected Commencement Date Projected Completion Date

(h) Description and location of proposed contract:
Construction of Garden-Wide Pedestrian Pathway System
Project ID: PV272-PATH

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

If yes, attach a copy of certificate.

14. Has DLS within the past month reviewed an Employment Report submission for your company and issued a Conditional Certificate of Approval? Yes ___ No x

If yes, attach a copy of certificate.

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

15. Has an Employment Report already been submitted for a different contract (not covered by this Employment Report) for which you have not yet received compliance certificate?
Yes ___ No x If yes,

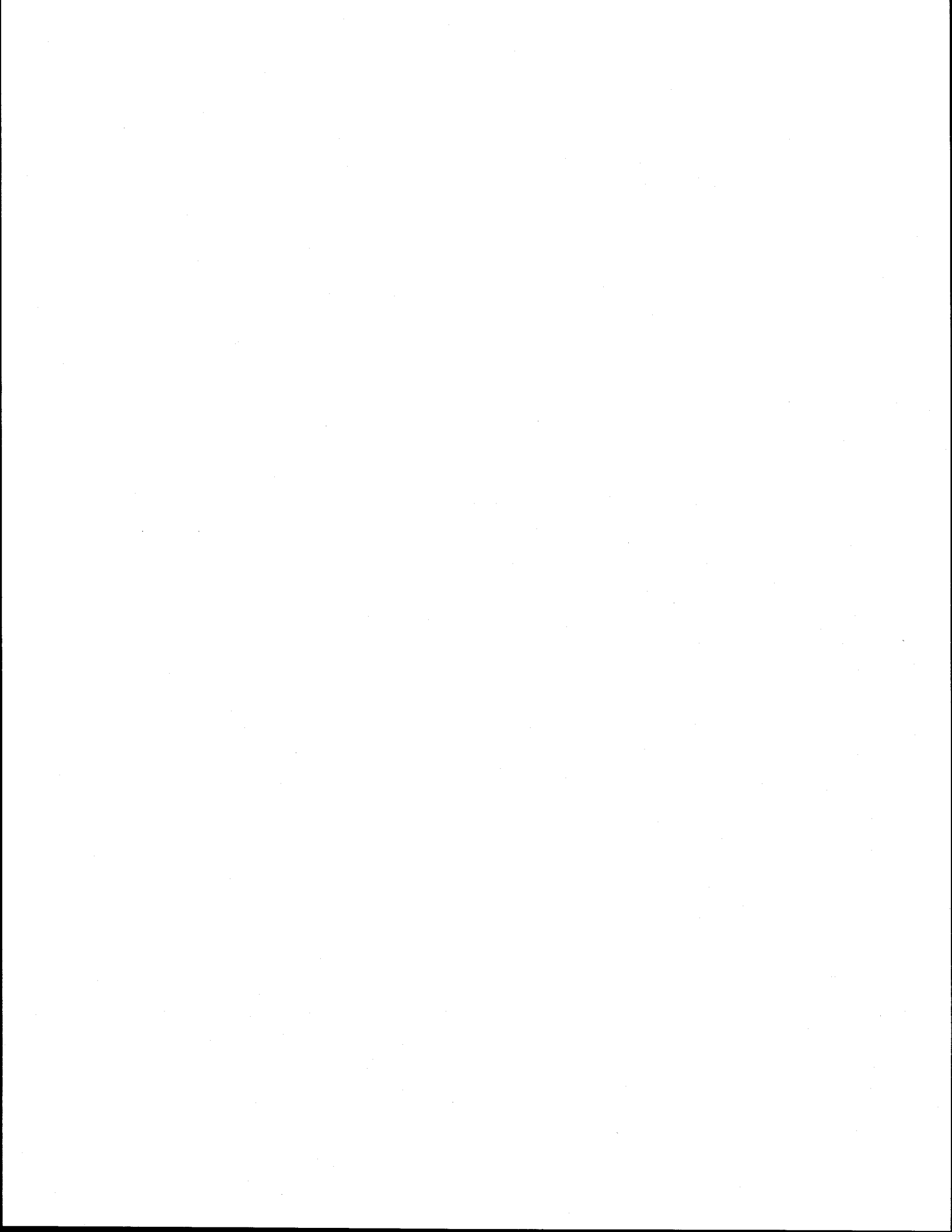
Date submitted: _____
Agency to which submitted: _____
Name of Agency Person: _____
Contract No: _____
Telephone: _____

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

If yes,

- (a) Name and address of OFCCP office.

- (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.

17. 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 x

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

PART II: DOCUMENTS REQUIRED

18. 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.

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

Yes (b) Disability, life, other insurance coverage/description NYS Mandated Insurance

Yes (c) Employee Policy/Handbook

Yes (d) Personnel Policy/Manual

Yes (e) Supervisor's Policy/Manual

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

No (g) Collective bargaining agreement(s).

Yes (h) Employment Application(s)

No (i) Employee evaluation policy/form(s).

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

19. 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 xx No ___

(c) After a job offer Yes ___ No ___

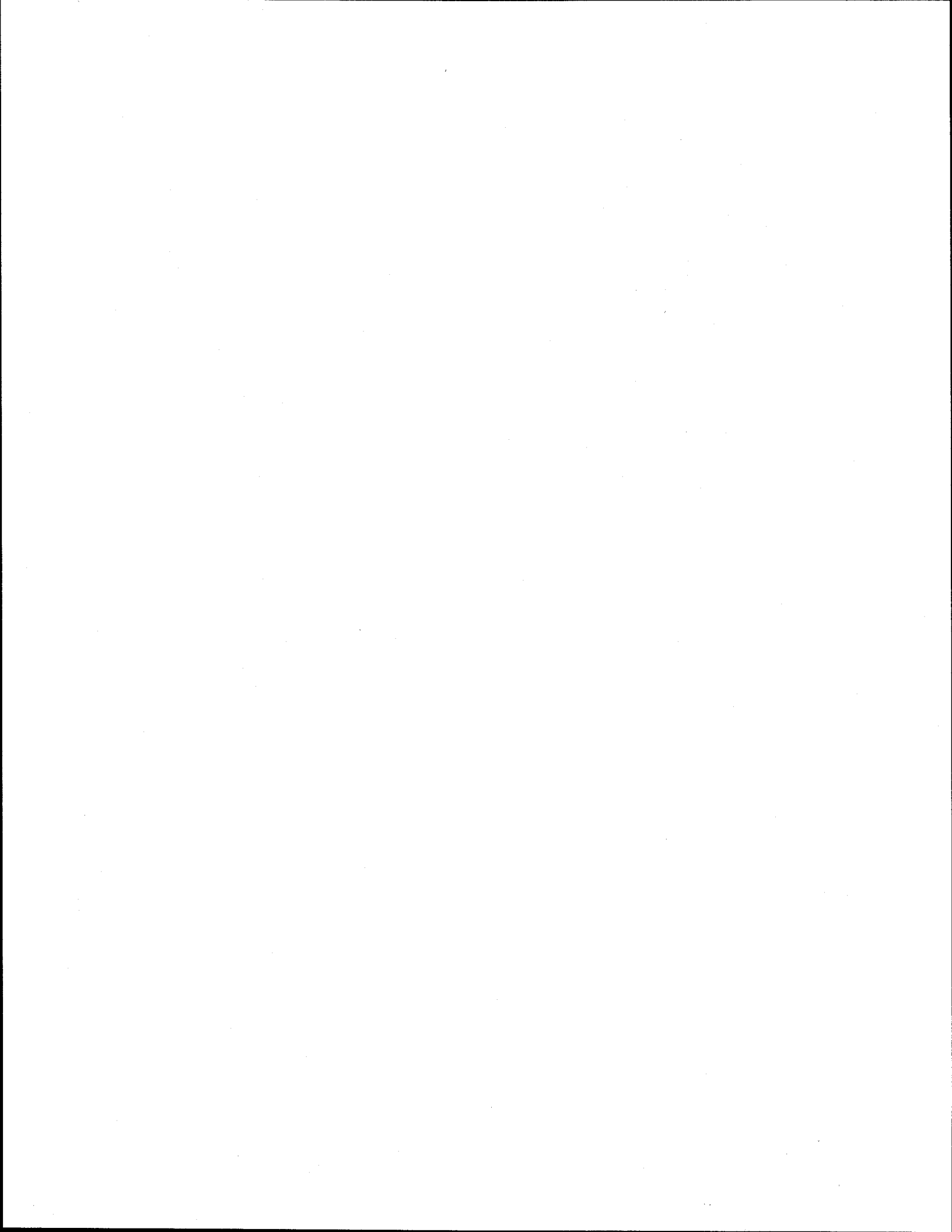
(d) Within the first three days on the job Yes ___ No ___

(e) To some applicants Yes ___ No ___

(f) To all applicants Yes ___ No ___

(g) To some employees Yes ___ No ___

(h) To all employees Yes xx No ___



20. Explain where and how completed I-9 Forms, with their supportive documentation, are maintained and made accessible.
Forms are kept in home office in each employee's folder

21. Does your firm or any of its collective bargaining agreements require job applicants to take a medical examination? Yes___ No^{xx}

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.

22. Do you have a written equal employment opportunity (EEO) policy? Yes^{xx} No___

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

23. Does the company have a current affirmative action plan(s) (AAP) No
___ Minorities and Women
___ Individuals with handicaps
___ Other. Please specify _____

24. Does your firm or collective bargaining agreement(s) have an internal grievance procedure with respect to EEO complaints? Yes___ No^{xx}

If yes, please attach a copy of this policy.

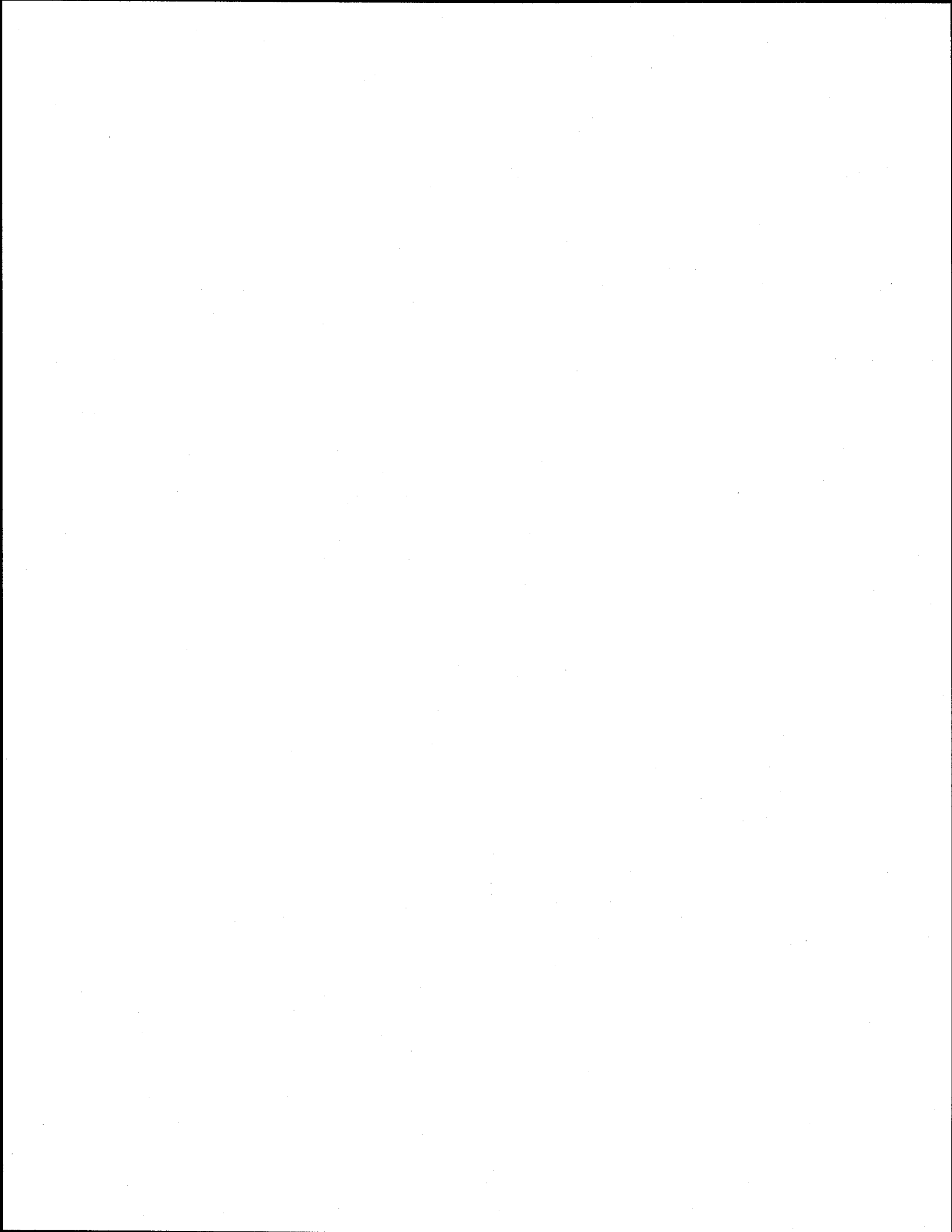
If no, attach a report detailing your firm's unwritten procedure for handling EEO complaints.

25. 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^{xx}

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

26. 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^{xx}

If yes, attach a log. See instructions.



27. Are there any jobs for which there are physical qualifications? Yes ___ No xx

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

28. 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 xx

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) Edward P. Galvin 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.

Galvin Bros., Inc./Madhue Contracting, Inc., a joint venture

Contractor's Name

Edward P. Galvin General Partner

Name of person who prepared this Employment Report Title

Edward P. Galvin General Partner

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

(516) 466-3785

Telephone Number

Signature of authorized official June 14, 2013 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 14th day of June 20 13

Maureen T. Confortin

Edward P. Galvin

6/14/13

Notary Public

Authorized Signature

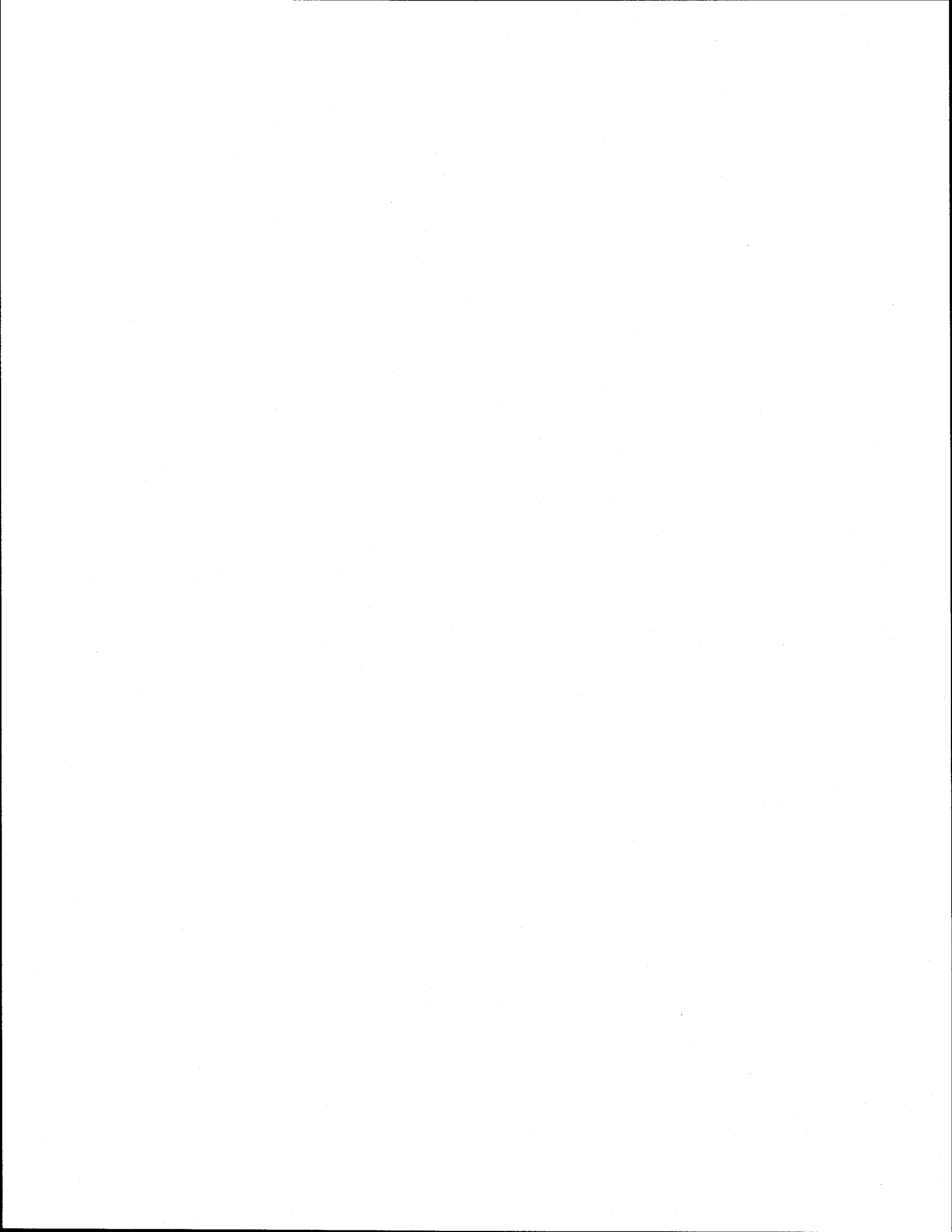
Date

MAUREEN T. CONFORTIN
Notary Public, State of New York
No. 01CO4850066
Qualified in Suffolk County

Commission Expires January 2014

Revised 1/13

FOR OFFICIAL USE ONLY: File No.



THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF STRUCTURES

June 3, 2013

ADDENDUM No. # 1

FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

PV272-PATH

Construction of Garden-Wide Pedestrian Pathway System

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. **Revisions to the Specifications:**
See Attachment A.
2. **Revisions to the Bid Booklet:**
Delete page 3 and replace with 3(R) & 3a(R), included with this Addendum.

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

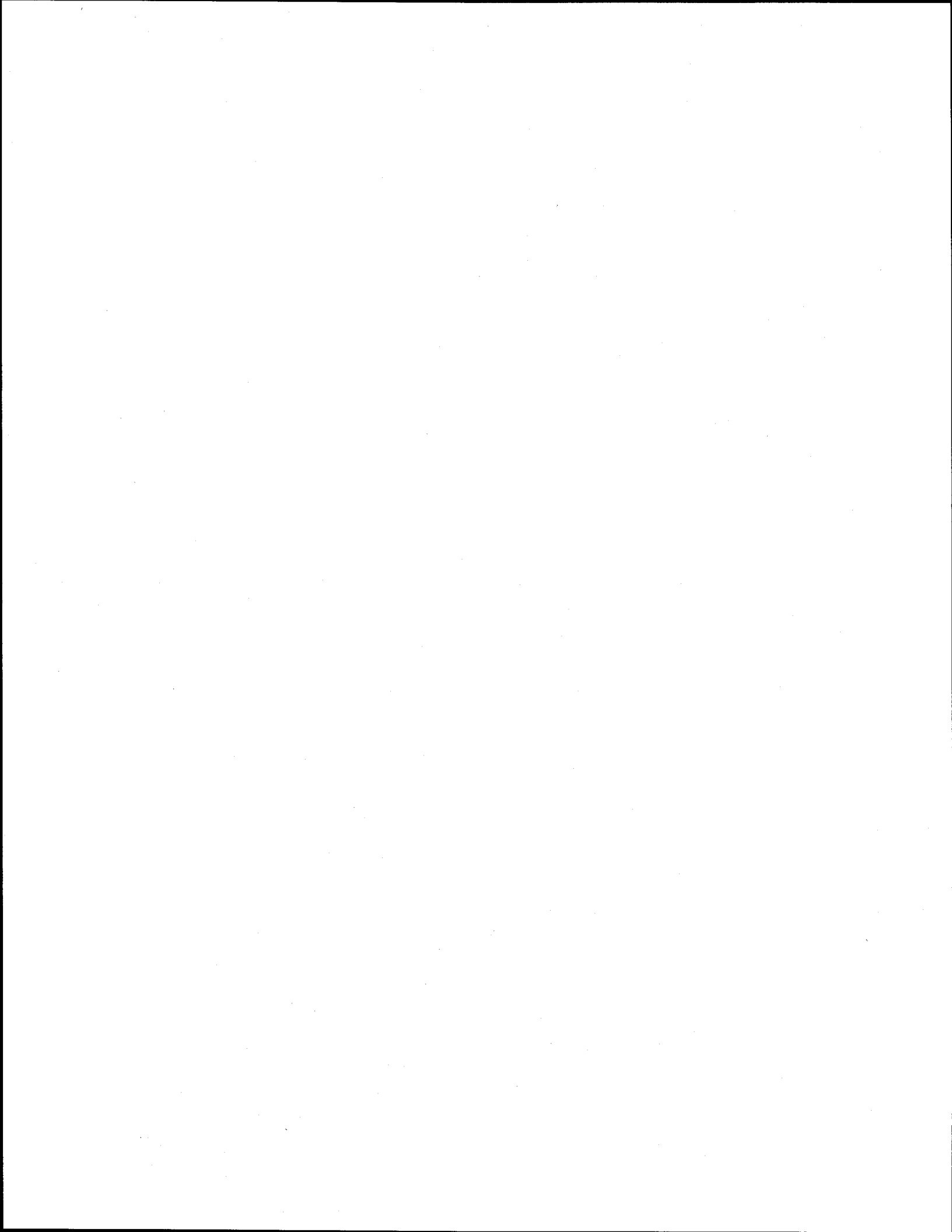
If additional information is required, please contact the Department of Design and Construction, Contract Section at (718) 391-2200, (718) 391-1727, or by fax at (718) 391-2615.



David Resnick, R.A.
Deputy Commissioner

Galvin Bros, Inc. / Mathue JV
Name of Bidder

By: *[Handwritten Signature]*



THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF STRUCTURES

June 14, 2013

ADDENDUM No. # 2

FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

PV272-PATH

Construction of Garden-Wide Pedestrian Pathway System

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. Revised Bid Opening Date:

The Bid Opening for the Contract described below scheduled for June 17th, 2013, at 2:00pm is rescheduled to June 25th, 2013, at 2:00pm.

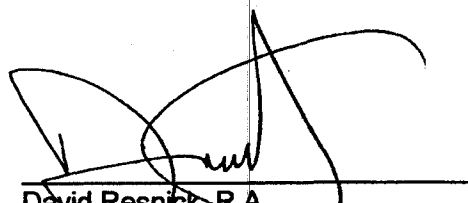
Contract 1 – General Construction Work.

2. Questions from Bidders and Responses to Questions:

See Attachment A.

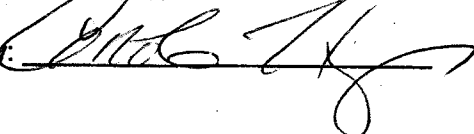
THIS ADDENDUM MUST BE SIGNED BY ALL BIDDERS AND ATTACHED TO THEIR BIDS.

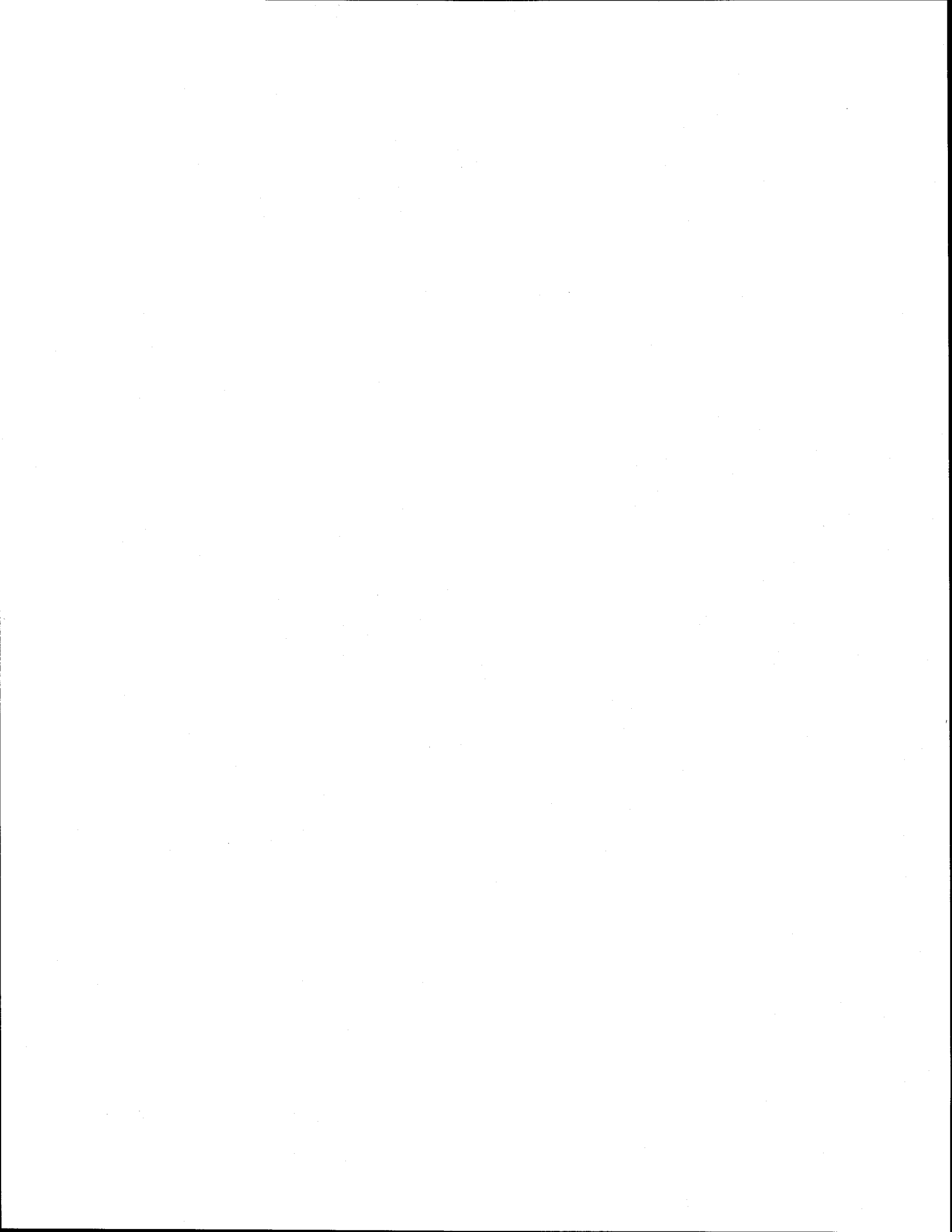
If additional information is required, please contact the Department of Design and Construction, Contract Section at (718) 391-2200, (718) 391-1727, or by fax at (718) 391-2615.



David Resnick, R.A.
Deputy Commissioner

Galvin Bros / Madhwa JV
Name of Bidder

By: 



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: PV272-PATH
CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF STRUCTURES

BID BOOKLET

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**CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF STRUCTURES**

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)
- MWBE Subcontractor 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)

**FAILURE TO SUBMIT THE SEVEN 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 additional information is required, please contact DDC at 718-391-2601.
 - (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	<u> X </u>	YES	<u> </u>	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: PV272-PATH

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

SUBCONTRACTOR UTILIZATION PLAN

Schedule B: Subcontractor Utilization Plan: Schedule B: Subcontractor Utilization Plan for this Contract is set forth on the following pages of this Bid Booklet. Schedule B: Subcontractor 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 Schedule B: Subcontractor Utilization Plan (Part II) with its bid.

Contract Provisions: Contract provisions regarding the participation of the MWBE firms are set forth in Article 77 of the Contract. The bidder is advised to review these contract provisions.

Waiver: The bidder may seek a full or partial pre-award waiver of the Target Subcontracting Percentage in accordance with Article 77 of the Contract (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 Target Subcontracting Percentage is set forth in Schedule B: Subcontractor Utilization Plan (Part III).

Rejection of the Bid: The bidder must complete Schedule B: Subcontractor Utilization Plan (Part II) set forth on the following pages. Subcontractor Utilization Plans which do not include the required affirmations (on Page 2) will be deemed to be non-responsive, unless a full waiver of the Target Subcontracting Percentage is granted (Schedule B: Subcontractor Utilization Plan, Part III). In the event that the City determines that the bidder has submitted a Schedule B: Subcontractor Utilization Plan where the required affirmations are completed but other aspects of the Plan are not complete, or contain a copy or computation error that is at odds with the affirmation, 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 plan 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 goals have been established for the participation of M/WBE's, 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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The City of New York

SCHEDULE B - Subcontractor Utilization Plan -Part I: Agency's Target

This page to be completed by contracting agency

Contract Overview

Pin #	<u>8502013PV0020C</u>	FMS Project ID#:	<u>PV272-PATH</u>
Project Title	<u>Construction of Garden-Wide Pedestrian Pathway System</u>		
Contracting Agency	<u>Department of Design and Construction</u>		
Agency Address	<u>30-30 Thomson Avenue</u>	City	<u>Long Island City</u> State <u>NY</u> Zip Code <u>11101</u>
Contact Person	<u>Norma Negrón</u>	Title	<u>MWBE Liaison & Compliance Analyst</u>
Telephone #	<u>(718) 391-1502</u>	Email	<u>negronn@ddc.nyc.gov</u>

Project Description *(attach additional pages if necessary)*

The project site is the Queens Botanical Garden which includes mature trees and display gardens. The project construction area is approximately 12 Acres. The Project consists of the removal of existing pavements, site furnishings (removal & storage of existing donor benches) and other miscellaneous existing site features. New concrete pavers and asphalt pavements shall be installed, existing donor benches reset, and new bench pads installed for future donations. Two existing wells (East & West) on site shall be fitted with new well equipment and utility sheds shall be furnished and installed to house each well head. The eastern well will provide water supply for a new automatic irrigation system to be installed for the cultivated garden area as part of this project. The western well has been recently installed. In addition to new well equipment and utility shed, new ground hydrants with water supply from the western well shall be furnished and installed at west end of the garden. Electrical work required for well equipment and automatic irrigation system shall be included. A new concrete step ramp shall be installed connecting the Garden to College Point Blvd. and to the pedestrian bridge to Flushing Meadows Corona Park. Site grading is required to improve surface drainage and drainage structures shall be furnished and installed in selected locations to convey surface flow to existing bio-swales and retention basins. Existing trees shall be protected, pruned and fertilized. Landscape areas adjacent to the reconstructed pathways will be reconstructed with sod or topsoil to meet grades.

(1) ✓ Target Subcontracting Percentage	Percentage of total contract dollar value that agency estimates will be awarded to subcontractors in amounts under \$1 million for construction and professional services.	30 %
---	--	-------------

Subcontractor Participation Goals*
Complete and enter total for each Construction or Professional Services, or both (if applicable)

Group	Construction	Professional Services
Black American	Unspecified %	%
Hispanic American	Unspecified %	%
Asian American	Unspecified %	No Goal
Caucasian Female	No Goal	%
Total Participation Goals (2)	31 %	(3) %

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

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Tax ID #: _____

PIN#: _____

SCHEDULE B - Subcontractor Utilization Plan – Part II: Bidder/Proposer Subcontracting Plan

This page and the next (Part II herein) are to be completed by the bidder/proposer. **AFFIRMATIONS; Bidder/proposer must check the applicable boxes below, affirming compliance with M/WBE requirements.**

Bidder/proposer AFFIRMS or DOES NOT AFFIRM [statement below]

It is a material term of the contract to be awarded that, with respect to the total amount of the contract to be awarded, bidder/proposer will award one or more subcontracts for amounts under one million dollars, sufficient to meet or exceed the Target Subcontracting Percentage (as set forth in Part I) unless it obtains a full or partial waiver thereof, and it will award subcontracts sufficient to meet or exceed the Total Participation Goals (as set forth in Part I) unless such goals are modified by the Agency.

- Bidder/proposer AFFIRMS that it intends to meet or exceed the Target Subcontracting Percentage (as set forth in Part 1); or
- AFFIRMS that it has obtained a full/partial pre-award waiver of the Target Subcontracting Percentage (as set forth in Part I) and intends to award the modified Target Subcontracting Percentage, if any; or
- DOES NOT AFFIRM

Section I: Prime Contractor Contact Information

Tax ID # _____ FMS Vendor ID # _____

Business Name _____ Contact Person _____

Address _____

Telephone # _____ Email _____

Section II: General Contract Information

1. Define the industry in which work is to be performed.

- Construction includes all contracts for the construction, rehabilitation, and/or renovation of physical structures. This category does include CM Build as well as other construction related services such as: demolition, asbestos and lead abatement, and painting services, carpentry services, carpet installation and removal, where related to new construction and not maintenance.
- Professional Services are a class of services that typically require the provider to have some specialized field or advanced degree. Services of this type include: legal, management consulting, information technology, accounting, auditing, actuarial, advertising, health services, pure construction management, environmental analysis, scientific testing, architecture and engineering, and traffic studies, and similar services.

a. Type of work on Prime Contract (Check one):

b. Type of work on Subcontract (Check all that apply):

- Construction Professional Services Construction Professional Services Other

2. What is the expected percentage of the total contract dollar value that you expect to award to all subcontracts? _____ %

3. Will you award subcontract(s) in amounts below \$ 1 million for construction and/or professional services contracts within the first 12 months of the notice to proceed on the contract? Yes No

Section III: Subcontractor Utilization Summary

IMPORTANT: If you do not anticipate that you will subcontract at the target level the agency has specified, because you will perform more of the work yourself, you must seek a waiver of the Target Subcontracting Percentage by completing p. 9).

Step 1:	Subcontracts under \$1M (4) (construction/professional services)	Total Bid/Proposal Value	Calculated Target Subcontracting Percentage
Calculate the percentage (of your total bid) that will go towards subcontracts under \$1M for construction and/or professional services	\$ _____	÷ \$ _____	x 100 = _____ %

- Subcontracts under \$1M (construction/professional services):** Enter the value you expect to award to subcontractors in dollars for amounts under \$1 million for construction and/or professional services. This value defines the amount that participation goals apply to, and will be entered into the first line of Step 2.
- Total Bid/Proposal Value:** Provide the dollar amount of the bid/proposal.
- Calculated Target Subcontracting Percentage:** The percentage of the total contract dollar value that will be awarded to one or more subcontractors for amounts under \$1 million for construction and/or professional services. **This percentage must equal or exceed the percentage listed by the agency on page 1, at line (1).**

NOTE: The "Calculated Target Subcontracting Percentage" MUST equal or exceed the Target Subcontracting Percentage listed by the agency on Page 6, Line (1).

Tax ID #: _____

PIN#: _____

SCHEDULE B - cont.

Step 2:

Calculate value of subcontractor participation goals

Subcontracts under \$1M
(construction/professional services)

a. Copy value from Step 1, line (4) – the total value of all expected subcontracts under \$1M for construction and/or professional services



b. * From line a. above, allocate the dollar value of "Subcontracts under \$1M" by Construction and Professional Services,

Construction

Professional Services

* If all subcontracts under \$1M are in one industry, enter '0' for the industry with no subcontracts.

* Amounts listed on these lines should add up to the value from line a.

Subcontracts under \$1M by Industry \$ _____

\$ _____

* For Construction enter percentage from line (2) from Page 6.

* For Professional Services enter percentage from line (3) from Page 6.

c. * **Total Participation Goals Percentages must be copied from Part I, lines (2) and (3).**

Total Participation Goals x _____ %

x _____ %

d. **Value of Total Participation Goals** \$ _____

\$ _____

Step 3:

Enter brief description of type(s) of subcontracts in amounts under \$1M anticipated, by type of work, not by name of subcontractor

Subcontracts in Amounts Under \$1 M Scope of Work – Construction

Enter brief description of type(s) of subcontracts in amounts under \$1M anticipated, by type of work, not by name of subcontractor

Subcontracts in Amounts Under \$1 M Scope of Work – Professional Services

Section IV: Vendor Certification and Required Affirmations

I hereby 1) acknowledge my understanding of the M/WBE requirements as set forth herein and the pertinent provisions of Local Law 129 of 2005, and the rules promulgated thereunder; 2) affirm that the information supplied in support of this subcontractor utilization plan is true and correct; 3) agree, if awarded this Contract, to comply with the M/WBE requirements of this Contract and the pertinent provisions of Local Law 129 of 2005, 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 subcontract(s) sufficient to meet the Target Subcontracting Percentage, unless a waiver is obtained, and the Vendor will award subcontract(s) sufficient to meet the Total Participation Goals unless such goals are modified by the Agency; and 5) agree and affirm, if awarded this contract the Vendor intends to make all reasonable, good faith efforts to meet the Target Subcontracting Percentage, or If the Vendor has obtained a waiver, the Vendor intends to meet the modified Target Subcontracting Percentage, if any, and the Vendor intends to solicit and obtain the participation of M/WBEs so as to meet the Total Participation Goals unless modified by the Agency.

Signature _____	Date _____
Print Name _____	Title _____

Tax ID #: _____

PIN#: _____

SCHEDULE B

PART III - REQUEST FOR WAIVER OF TARGET SUBCONTRACTING PERCENTAGE

Contract Overview

Tax ID # _____ FMS Vendor ID # _____

Business Name _____

Contact Name _____ Telephone # _____ Email _____

Type of Procurement Competitive Sealed Bids Other Bid/Response Due Date _____

PIN # (for this procurement) _____ Type of work on Prime Contract _____ Type of work on Subcontract (Check all that apply):

(Check one):

Construction
 Professional Services

Construction
 Professional Services

Other

SUBCONTRACTING as described in bid/solicitation documents (Copy this % figure from Subcontractor Utilization Plan, Part I, line

_____ % of the total contract value anticipated by the agency to be subcontracted for construction/professional services subcontracts valued below \$1 million (each)

ACTUAL SUBCONTRACTING as anticipated by vendor seeking waiver

_____ % of the total contract value anticipated in good faith by the bidder/proposer to be subcontracted for construction/ professional services subcontracts valued below \$1 million (each)

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

Vendor does not subcontract construction/professional services, and has the capacity and good faith intention to perform all such work itself.

Vendor subcontracts some of this type of work but at lower % than bid/solicitation describes, and has the capacity and good faith intention to do so on this contract.

Other _____

References

List 3 most recent contracts/subcontracts performed for NYC agencies (if any)

CONTRACT NO. _____ AGENCY _____ DATE COMPLETED _____

CONTRACT NO. _____ AGENCY _____ DATE COMPLETED _____

CONTRACT NO. _____ AGENCY _____ DATE COMPLETED _____

List 3 most recent contracts/subcontracts performed for other agencies/entities (complete ONLY if vendor has performed fewer than 3 NYC contracts)

TYPE OF WORK _____ AGENCY/ENTITY _____ DATE COMPLETED _____

Manager at agency/entity that hired vendor (Name/Phone No.) _____

TYPE OF WORK _____ AGENCY/ENTITY _____ DATE COMPLETED _____

Manager at agency/entity that hired vendor (Name/Phone No.) _____

TYPE OF WORK _____ AGENCY/ENTITY _____ DATE COMPLETED _____

Manager at agency/entity that hired vendor (Name/Phone No.) _____

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 CONTACTING OFFICER APPROVAL

Signature: _____

Date: _____

CITY CHIEF PROCUREMENT OFFICER APPROVAL

Signature: _____

Date: _____

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

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

PROJECT ID: PV272-PATH

**Construction of Garden-Wide Pedestrian Pathway System
43-50 Main Street
Queens, 11355**

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:

BID FORM

PROJECT ID: PV272-PATH

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

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

Total Price
For Labor

Total Price for
Material Sold and
Delivered

\$ _____ + \$ _____ Total Price for Item A \$ _____

TOTAL BID PRICE (Add A)
(a/k/a BID PROPOSAL) \$ _____

BIDDER'S SIGNATURE AND AFFIDAVIT

WARNING!! Failure to comply with items below will result in the rejection of your bid.

- * **SUBCONTRACTORS:** You MUST complete and submit the form entitled "Bidder's Identification of Subcontractors" (See 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

- * **MWBE GOALS:** You MUST complete and submit the Affirmations contained in the Subcontractor Utilization Plan (See Page 7), or a pre-approved waiver (See Page 9), at the time you submit your bid. You must submit the Affirmations (or a pre-approved waiver) in BID ENVELOPE #1.

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 Local Law 129, if the bidder's intention to use its own forces to do any of the above-referenced work would result in Bidder's failure to attain the Target Subcontracting Percentage identified in the Subcontractor Utilization Plan, the bid will be non-responsive unless the bidder requests and obtains a Waiver of Target Subcontracting Percentage (Subcontractor Utilization Plan, Part III) in advance of bid submission.

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: PV272-PATH

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

 X YES NO

Limitations on Use of Bid Breakdown:

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

Instructions for Preparing Bid Breakdown:

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

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NEW YORK CITY DEPARTMENT OF
DESIGN + CONSTRUCTION

CONTRACTOR'S BID BREAKDOWN FORM

CONTRACT 1 - General Construction

Project: Construction of Garden-Wide Pedestrian Pathway System

Location: 43-50 Main Street, Flushing NY 11355

Bidder:

DDC ID: PV272-PATH

Sponsor Agency: Dept of Cultural Affairs

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								
GENERAL REQUIREMENTS								
Div 1 010000	Mobilization		LS					
	Temporary Electric		LS					
	Construction Fence: Rented Chain Link Fence- 8'-0" HT. (Based on largest Phase)		LF					
	Construction Fence: Rented Chain Link Fence- 8'-0" HT. (Relocated)		LF					
	Subtotal							
015639	Temporary Tree and Plant Protection		EA					
	Temporary Tree and Plant Protection		SF					
	Tree Root Protection @ Oak Allee (Plywood Boards)		LF					
	Temporary Tree Protection for Grove		TU					
	Compensatory Crown Pruning		TU					
	Decompaction							
	Subtotal							
EXISTING CONDITIONS								
Div 2 024119	SITE DEMOLITION							
	Remove Bench + Dispose Existing Benches		LF					
	Remove Existing Light Bollard		EA					
	Remove Existing Well House Shed (includes electrical + mechanical demo)		LS					
	Sawcut Pavement		LF					
	Subtotal							
HANDLING, TRANSPORT AND DISPOSAL OF CONTAMINATED MATERIALS								
026113	Handling, Transport and Disposal of Contaminated Materials		CY					
	Subtotal							

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NEW YORK CITY DEPARTMENT OF
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CONTRACTOR'S BID BREAKDOWN FORM

CONTRACT 1 - General Construction

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Location: 43-50 Main Street, Flushing NY 11355

Bidder:

DDC ID: PV272-PATH

Sponsor Agency: Dept of Cultural Affairs

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
Div 3	CONCRETE							
033000	CAST IN PLACE CONCRETE							
	Concrete Bench Pads		CY					
	Concrete Curb		CY					
	Concrete Footing (Drains)		CY					
	Concrete Curbwall		CY					
	Integral Colored Concrete Step Ramp		CY					
	Concrete Slab for Sheds		CY					
	Steel Bar Reinforcement		LBS					
	Subtotal							
Div 5	METALS							
055213	PIPE AND TUBE RAILINGS							
	Pipe Rail Railings		LF					
	Hand Railings		LF					
	Subtotal							
Div 9	FINISHES							
099113	Exterior Painting (included with 05 52 13)							
Div 12	FURNISHINGS							
129300	SITE FURNISHINGS							
	Remove, Salvage + Store Existing Benches		EA					
	Reset Existing Benches		LF					
	Remove, Store & Reset Existing Signage		EA					
	Remove, Store & Reset Existing Bike Rack		EA					
	Subtotal							

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NEW YORK CITY DEPARTMENT OF
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Location: 43-50 Main Street, Flushing NY 11355

Bidder:

DDC ID: PV272-PATH

Sponsor Agency: Dept of Cultural Affairs

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
Div 13	SPECIAL CONSTRUCTION							
133419	PREFABRICATED SHED Prefabricated Shed		EA					
	Subtotal							
Div 22	PLUMBING							
220523	Valves, Irrigation Filter and Valve Boxes							
	5-1/4" Cast Iron Valve Box		EA					
	3/4" Hose Bibb		EA					
	3" Dia. Gate Valve		EA					
	2" Dia. Air Release Valve		EA					
	3" Dia. Check Valve		EA					
	Irrigation Filter		EA					
	Subtotal							
220553	PIPE AND VALVE IDENTIFICATION							
	Pipe and Valve Identification		LS					
	Subtotal							
221100	PLUMBING PIPING							
	3" Copper Tubing Type 'L'		LF					
	Subtotal							
Div 26	ELECTRICAL							
260221	MOTOR CONTROLLERS							
	Variable Frequency Drive Motor Starter		EA					
	Subtotal							

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NEW YORK CITY DEPARTMENT OF
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CONTRACT 1 - General Construction

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Location: 43-50 Main Street, Flushing NY 11355

Bidder:

DDC ID: PV272-PATH

Sponsor Agency: Dept of Cultural Affairs

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
260519	WIRING, GENERAL - 600 VOLTS AND UNDER							
	500 KCMIL Wire		LF					
	1/0 AWG Wire		LF					
	#2 AWG Wire		LF					
	#6 AWG Wire		LF					
	#8 AWG Wire		LF					
	#12 AWG Wire		LF					
	24 AWG Twisted Shielded Control Wire		LF					
	Subtotal							
260526	GROUNDING AND BONDING							
	Grounding and Bonding		LS					
	Subtotal							
260531	CONDUIT							
	4" RGS Conduit		LF					
	2" RGS Conduit		LF					
	1-1/2" Conduit		LF					
	3/4" Conduit		LF					
	Subtotal							
260534	OUTLET, JUNCTION, AND PULL BOXES							
	Junction Box		EA					
	Pullbox		EA					
	Subtotal							
262416	PANELBOARDS							
	60A Electrical Panel		EA					
	30A Disconnect Switch		EA					
	Connect to existing 42 CKT panel -440A		LS					
	Subtotal							

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Location: 43-50 Main Street, Flushing NY 11355

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CSI Number	Description	Quantity	Unit	Unit Cost of Material	Total Cost of Material	Unit Cost of Labor	Total Cost of Labor	Total Cost: Materials and Labor
262726	WIRING DEVICES							
	GFI Receptacle		EA					
	Switch		EA					
	Subtotal							
265110	FLUORESCENT FIXTURES							
	Fluorescent Fixtures		EA					
	Connect to existing lines		LS					
	Subtotal							
DIV 31	EARTHWORK							
311000	SITE CLEARING							
	Clear and Grub		SF					
	Excavation (Pavement Removals)		CY					
	Remove Selected Trees, Including Stump		EA					
	Remove Existing Concrete Slab		CY					
	Remove Existing Concrete Curb		CY					
	Remove Existing Timber Curb		CY					
	Subtotal							
312000	EARTH MOVING							
	General Fill		CY					
	6" Structural Soil Base @ Oak Allee Paths		CY					
	Excavation (New Work)		CY					
	Excavation- Hand Excavation (6" depth Oak Allee)		CY					
	Base Aggregate Stone (Under Paving & Bench Pads)		CY					
	New Topsoil		CY					
	Subtotal							

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Bidder:

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Sponsor Agency: Dept of Cultural Affairs

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
312500	EROSION AND SEDIMENTATION CONTROLS							
	Silt Fence		LF					
	Stabilized Construction Access & Haul Road		SY					
	Geogrid Reinforcement (Construction Access)		SF					
	Hay Bales		LF					
	Snow Fence		LF					
	Inlet Protection		EA					
	Subtotal							
DIV 32	EXTERIOR IMPROVEMENTS							
321216	ASPHALT PAVING							
	Asphalt Paving (Wood Edging Included)		SY					
	Asphalt Paving with Exposed Aggregate @ Cultivated Gardens (Wood Edging Included)		SY					
	Milling Asphalt		SF					
	Asphalt Topcourse		SY					
	Subtotal							
321313	CONCRETE PAVING							
	5" Reinforced Concrete Pavement		SF					
	Subtotal							
321373	CONCRETE PAVING JOINT SEALANTS (included with 32 13 13)							
321400	UNIT PAVING							
	Concrete Pavers		SF					
	Concrete Pavers (Remove & Reset)		SF					
	Concrete 'Grass' Block Pavers		SF					
	Paver Edging		LF					
	Subtotal							

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NEW YORK CITY DEPARTMENT OF
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CONTRACTOR'S BID BREAKDOWN FORM

CONTRACT 1 - General Construction

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Location: 43-50 Main Street, Flushing NY 11355

Bidder:

DDC ID: PV272-PATH

Sponsor Agency: Dept of Cultural Affairs

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
328000	IRRIGATION SYSTEM							
	Irrigation controller with rain sensor		EA					
	Flow sensor assembly		EA					
	Winterization master valve assembly		EA					
	4" PVC Sleeves		LF					
	3" HDPE main line piping with fittings		LF					
	2 1/2" HDPE main line piping with fittings		LF					
	2" HDPE main line piping with fittings		LF					
	1 1/2" Poly lateral piping with fittings		LF					
	1 1/4" Poly lateral piping with fittings		LF					
	1" Poly lateral piping with fittings		LF					
	2-wire path and 1" conduit		LF					
	12" pop-up spray heads		EA					
	6" pop-up spray heads		EA					
	6" pop-up gear drive sprinklers		EA					
	Drip Irrigation - microspray		EA					
	1" quick coupling valves		EA					
	1 1/2" automatic valve assemblies		EA					
	1" automatic valve assemblies		EA					
	2" Isolation Valves		EA					
	Grounding Rod Assemblies		EA					
	Post Hydrants		EA					
	Air Release Valve Assembly		EA					
	Subtotal							
329200	TURF AND GRASSES							
	Mulch		SY					
	Sod		SF					
	Grass Seed "Fescue Mix"		SF					
	Fine grading adjacent to path		SF					

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NEW YORK CITY DEPARTMENT OF
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CONTRACTOR'S BID BREAKDOWN FORM

CONTRACT 1 - General Construction

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Location: 43-50 Main Street, Flushing NY 11355

Bidder:

DDC ID: PV272-PATH

Sponsor Agency: Dept of Cultural Affairs

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
	Restore landscape areas disturbed by irrigation installation		LS					
	Subtotal							
329300	PLANTS							
	Groundcover (Cotoneasters)		EA					
	Subtotal							
329600	TRANSPLANTING							
	Transplant Existing Trees (+/- 30) to On-Site Location		EA					
	Subtotal							
DIV 33	UTILITIES							
330121	WELL TESTING							
	Well Testing		LS					
	Subtotal							
331103	COPPER TUBING AND FITTINGS UNDERGROUND							
	Pressure Transducer		EA					
	Dresser Coupling		EA					
	1-1/2" Plug Valve		EA					
	1-1/2" Pipe Reducer		EA					
	1-1/2" Copper Tubing Type 'K'		LF					
	2" Copper Tubing Type 'K'		LF					
	3" Copper Tubing Type 'K'		LF					
	Subtotal							
331220	GROUND HYDRANTS							
	Ground Hydrants - 1"		EA					
	Subtotal							

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CONTRACT 1 - General Construction

Project: Construction of Garden-Wide Pedestrian Pathway System

Location: 43-50 Main Street, Flushing NY 11355

Bidder:

DDC ID: PV272-PATH

Sponsor Agency: Dept of Cultural Affairs

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
331300	FLUSHING OF WATER UTILITY DISTRIBUTION (included with 33 11 03)							
332001	SUBMERSIBLE WELL PUMP Submersible Well Pump (7.5 HP)		EA					
	Subtotal							
334100	STORM UTILITY DRAINAGE PIPING							
	Broken Stone		CY					
	Trench Drain		LF					
	Catch Basin		EA					
	Precast Concrete Dry Well		EA					
	Area Drain		EA					
	Clean out		EA					
	Polyethylene Corrugated Pipe (12"Dia)		LF					
	Ductile Iron Pipe (6"Dia)		LF					
	Ductile Iron Pipe (4"Dia)		LF					
	Subtotal							
	TOTAL CONTRACT 1 - GENERAL CONSTRUCTION WORK							

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PLA PROJECT

**ATTACHMENT 1 - BID INFORMATION
PROJECT ID: PV272-PATH**

DESCRIPTION AND LOCATION OF WORK:

**Construction of Garden-Wide Pedestrian Pathway System
43-50 Main Street
Queens, NY 11355
E-PIN: 85013B0102 / DDC PIN: 8502013PV0020C**

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: **MONDAY, JUNE 17, 2013**

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:	MONDAY, JUNE 17, 2013 @ 2:00 PM
	LATE BIDS WILL NOT BE ACCEPTED

PRE-BID CONFERENCE:

PLACE	Queens Botanic Garden 43-50 Main Street Queens, NY 11355
DATE AND HOUR	TUESDAY, JUNE 4, 2013 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.

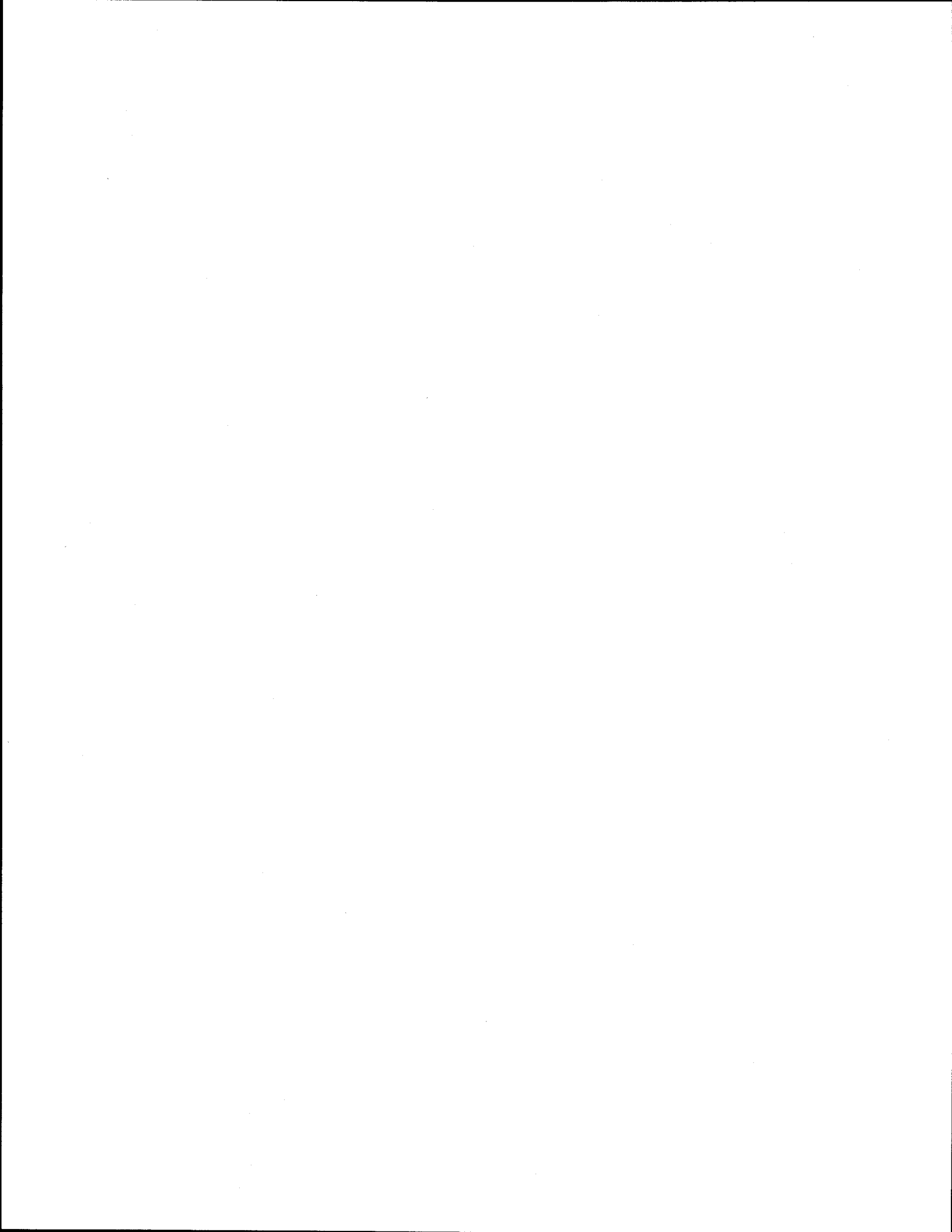
- (1) Bond in an amount not less than 10% of the TOTAL BID PRICE set forth on the Bid Form, OR
- (2) Certified Check in an amount not less than 2% of the TOTAL BID PRICE set forth on the Bid Form

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

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:

_____ Contractor has received a willful violation issued by OSHA or New York City Department of Buildings (NYCDOB) within the last three years.

_____ 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
_____	_____	_____
_____	_____	_____
_____	_____	_____

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)

_____ Contractor previously audited by the DDC Office of Site Safety.

DDC Project Number(s): _____

_____ Accident on previous DDC Project(s).

_____ 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].

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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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

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

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: _____

**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:

<input type="checkbox"/> Minority Owned Business Enterprise	<input type="checkbox"/> Locally based Business Enterprise
<input type="checkbox"/> Women Owned Business Enterprise	<input type="checkbox"/> Emerging Business Enterprise
- 2a. If you are certified as an **MBE, WBE, or LBE**, 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

PART I: CONTRACTOR/SUBCONTRACTOR INFORMATION

- | | | |
|-----|---|------------------|
| 5. | Employer Identification Number or Federal Tax I.D./ | Email Address |
| 6. | Company Name | |
| 7. | Company Address and Zip Code | |
| 8. | Chief Operating Officer | Telephone Number |
| 9. | Designated Equal Opportunity Compliance Officer
(If same as Item #7, write "same") | Telephone Number |
| 10. | Name of Prime Contractor and Contact Person
(If same as Item #5, write "same") | |
| 11. | Number of employees in your company: _____ | |

12. Contract information:

- (a) _____ (b) _____
Contracting Agency (City Agency) Contract Amount
- (d) _____ (e) _____
Procurement Identification Number (PIN) Contract Registration Number (CT#)
- (f) _____ (g) _____
Projected Commencement Date Projected Completion Date

(h) Description and location of proposed contract:

13. 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.

14. 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.

15. 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: _____

16. 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.

17. 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

18. 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?

19. 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___ |

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

21. 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.

22. 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.

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

___ Minorities and Women

___ Individuals with handicaps

___ Other. Please specify _____

24. 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.

25. 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.

26. 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.

27. 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).

28. 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).

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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.

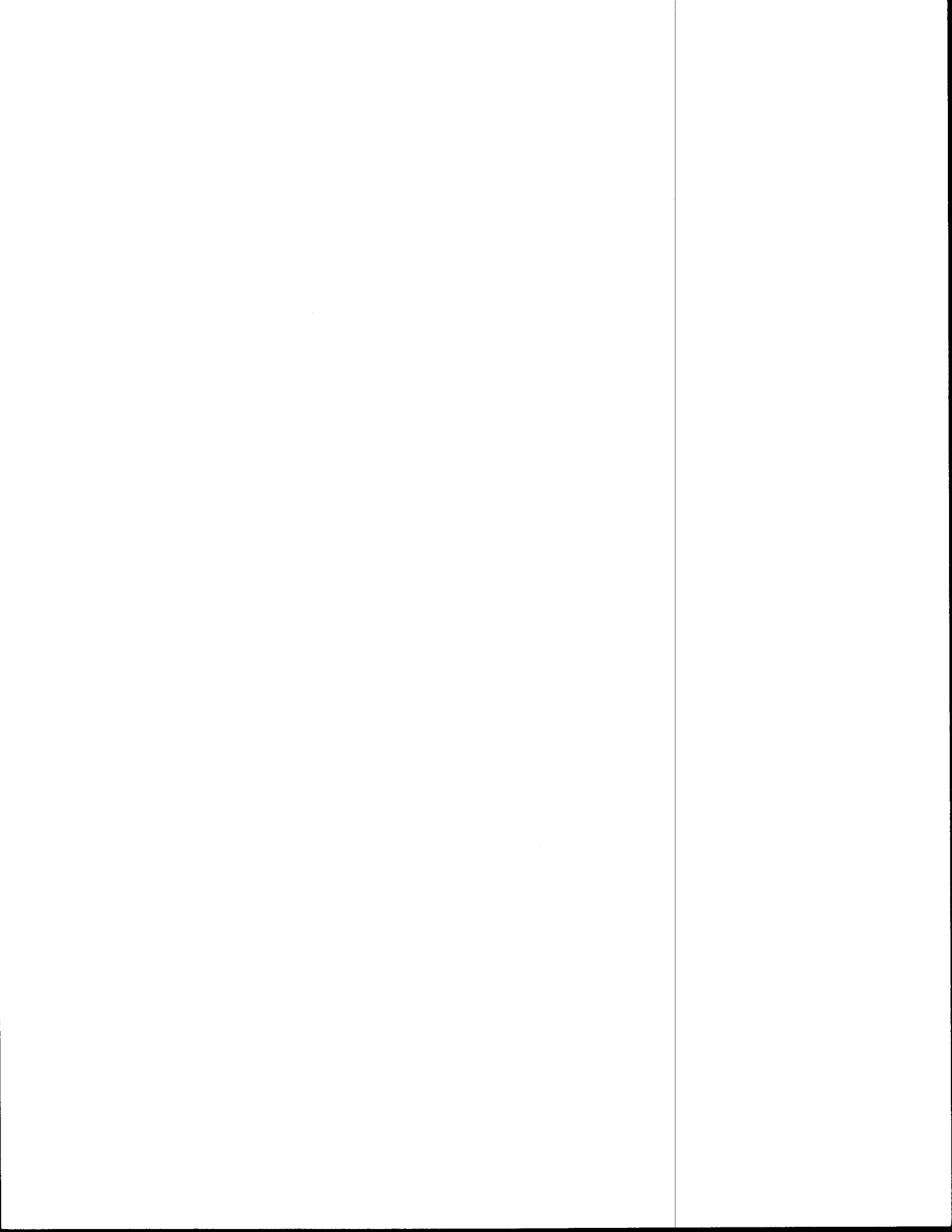
Sworn to before me this _____ day of _____ 20 _____

Notary Public

Authorized Signature

Date

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FMS ID: PV272-PATH



**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

Construction of Garden-Wide Pedestrian Pathway System

**LOCATION: 43-50 Main Street
BOROUGH: Queens, 11355
CITY OF NEW YORK**

Contractor _____

Dated _____, 20____

Entered in the Comptroller's Office

First Assistant Bookkeeper _____

Dated _____, 20____





PROJECT ID: PV272-PATH

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

DAMAGES FOR DELAY

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

**Construction of Garden-Wide
Pedestrian Pathway System**

LOCATION:
BOROUGH:
CITY OF NEW YORK

43-50 Main Street
Queens, 11355

CONTRACT NO. 1

GENERAL CONSTRUCTION WORK

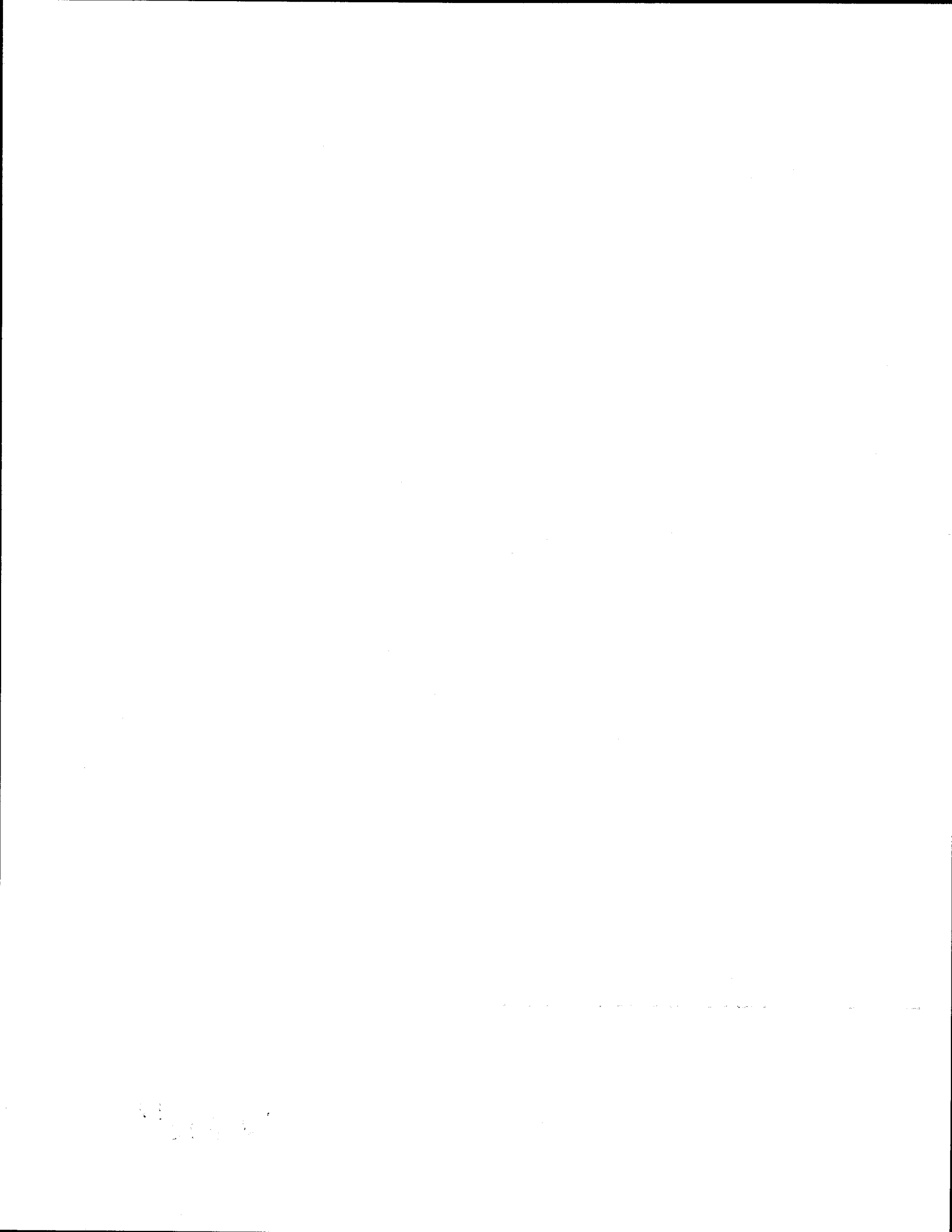
Dept of Cultural Affairs

Abel Bainnson Butz, LLP

Date: April 4, 2013



3-044





**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

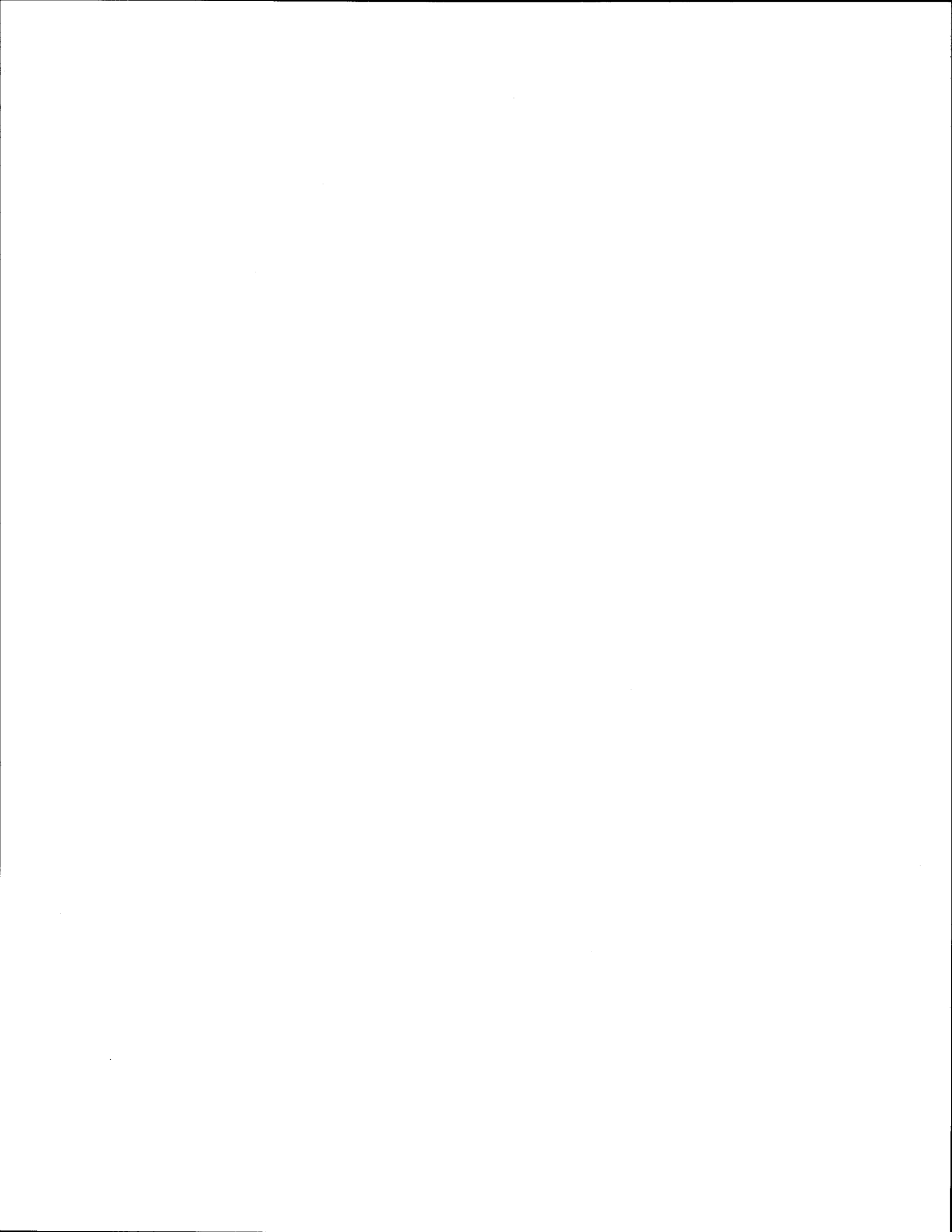
VOLUME 2 OF 3

**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



N 3-044



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**

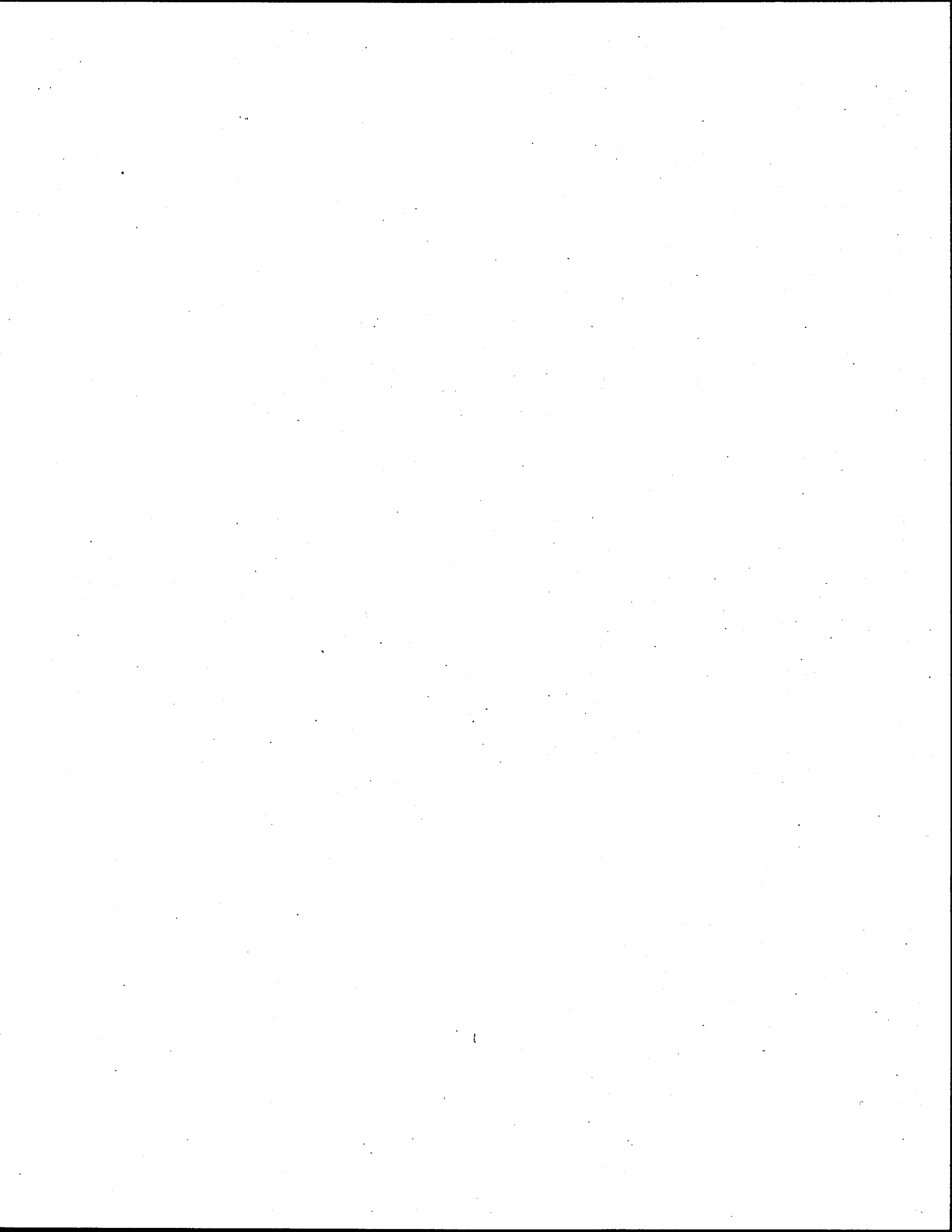


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**PROJECT LABOR AGREEMENT COVERING SPECIFIED
RENOVATION & REHABILITATION OF NEW YORK CITY OWNED
FACILITIES & STRUCTURES**

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;

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- (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

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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

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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

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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;

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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

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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

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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

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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 journeypersons in their trade as determined by the appropriate Local Union. All forepersons shall take orders exclusively from the designated Contractor representatives. Craft forepersons shall be designated as working forepersons at the request of the Contractor, except when an existing local Collective Bargaining Agreement prohibits a foreperson from working when the craft persons he is leading exceed a specified number.

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

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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 clause, 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,

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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.

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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

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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

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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

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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.

NYC AGENCY RENOVATION & REHAB CITY OWNED BUILDINGS/STRUCTURES

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

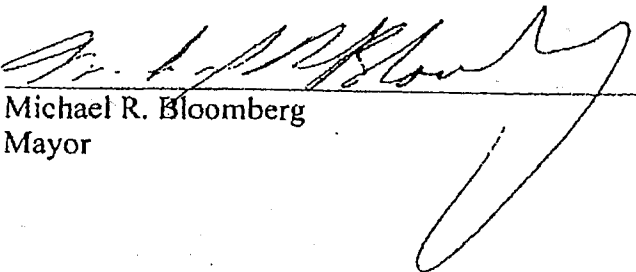
NYC AGENCY RENOVATION & REHAB CITY OWNED BUILDINGS/STRUCTURES

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

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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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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

DAMAGES FOR DELAY PILOT PROGRAM

Please be advised that this contract is part of a pilot program in which the Standard Construction Contract provisions concerning delay damages have been revised to allow contractors to be reimbursed for specified additional costs that are attributable to a delay in the performance of the work resulting from certain acts or omissions of the City agency or its representatives. Certain changes are highlighted here to alert bidders to the pilot program. Please see Articles 11, 12.3, and 13.10 of the Standard Construction Contract for a full understanding and the actual text of the pilot program. 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.

Changes to Articles 11, 12.3, and 13.10 of the Standard Construction Contract permit contractors to make claims for delay damages relating to the following circumstances:

The failure of the City to take reasonable measures to coordinate and progress the Work;

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 constitute a material change to the Work and which have a verifiable impact on project costs.

The unavailability of the site for an extended period of time that significantly affects the scheduled completion of the contract.

The issuance by the City of a stop work order relative to a substantial portion of work for a period exceeding thirty days, that was not brought about through any action or omission of the Contractor.

Differing site conditions that were not known or 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.

Delays caused by the City's bad faith or its willful, malicious, or grossly negligent conduct;

Delays not contemplated by the parties;

Delays so unreasonable that they constitute an intentional abandonment of the Contract by the City; and

Delays resulting from the City's breach of a fundamental obligation of the Contract.

Please see Article 11.4 for provisions regarding compensable delays.

Specific exclusions to claims for damages also apply, such as for third party (non-City) acts and omissions, court orders, strikes or *force majeure* events. For provisions related to non-compensable delays, please see Article 11.5.

For those delays where damages are available, Article 11 also sets forth what costs are recoverable. Please see Article 11.7 for which costs are recoverable and which costs are non-recoverable.

Article 11 also contains provisions concerning notice and documentation of claims. Please see Articles 11.1, 11.2, and 11.6. Contractors must comply with the notice requirements in order to preserve their claims. Consequently, please read these sections carefully. Delay damages are compensable only if they were actually, reasonably and necessarily incurred and are verified by appropriate documentation submitted at the appropriate times.

Claims for delay damages are not covered by the dispute resolution process in Article 27 of the Standard Construction Contract. See Article 11.8. When the amount of delay damages are agreed upon, such damages may be paid through a change order.

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

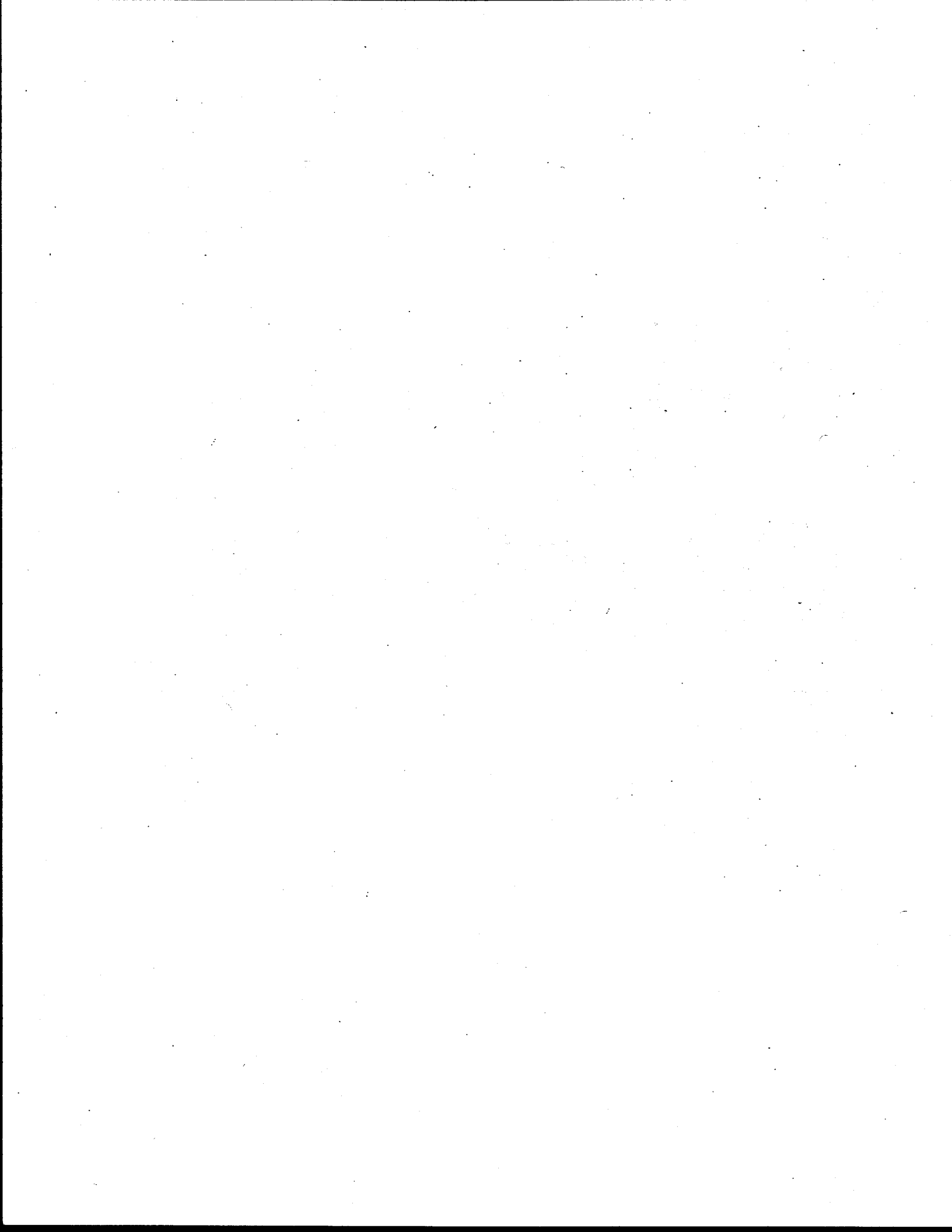
1. In accordance with Local Law Nos. 30-2012 and 33-2012, codified at sections 6-132 and 12-113 of the New York City Administrative Code, respectively,
 - (a) Contractor shall not take an adverse personnel action with respect to an officer or employee in retaliation for such officer or employee making 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 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.

NOTICE TO BIDDERS

Please be advised that the City of New York has revised the form of the performance bond that is required for City construction contracts that do not exceed \$5 million. The form of bond required for contracts that are greater than \$5 million has not changed. The City now has two approved forms. One form is to be used for contracts that do not exceed \$5 million and one form is to be used for contracts above \$5 million. The City's payment bond remains unchanged.

The new bond form for contracts that do not exceed \$5 million has been approved by the U.S. Small Business Administration ("SBA") for participation in their Bond Guarantee Program. The SBA's Bond Guarantee Program enables eligible small businesses to obtain or increase bonding by having the SBA act as a partial guarantor of the contractor to the surety. If you are interested in participating in this program, we suggest that you contact your broker or the SBA.

In order to maximize participation by small businesses in the SBA Guarantee Program, the City also encourages prime contractors who are awarded contracts greater than \$5 million to allow their subcontractors to use the SBA-approved form, particularly on contracts that are subject to Local Law 129 (the M/WBE program), if the prime contractor requires subcontractors to obtain performance bonds.



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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CITY OF NEW YORK
DEPARTMENT OF
DESIGN AND CONSTRUCTION
DIVISION OF STRUCTURES

INFORMATION FOR BIDDERS

DELAY DAMAGES PILOT

September 2008

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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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CITY OF NEW YORK
STANDARD CONSTRUCTION CONTRACT
DELAY DAMAGES PILOT

September 2008

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**CITY OF NEW YORK
STANDARD CONSTRUCTION CONTRACT**

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CITY OF NEW YORK

STANDARD CONSTRUCTION CONTRACT (September 2008)

The Standard Construction Contract dated September 2008 (the "Contract") is amended as set forth below.

- Article 77: Article 77, Part A, Section 5 is deleted in its entirety and replaced with the following:
 5. Where a Subcontractor 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. **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 a contract that is subject to a Project Labor Agreement] where the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades [i.e., 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 of the Wicks trades, regardless of what point in the life of the contract such subcontracts will occur, at the time of bid submission. In the event that the Contractor's selection of a subcontractor is disapproved, the Contractor shall have a reasonable time to propose alternate subcontractors.**

- Article 77: Article 77, Part A, Section 11 is deleted in its entirety and replaced with the following:
 11. **Modification of Subcontractor Utilization Plan.** A Contractor may request a modification of its Subcontractor Utilization Plan (**Subcontractor Participation Goals**) 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 a contract that is subject to a Project Labor Agreement] where the bidder is required to identify at the time of bid submission its intended subcontractors for the Wicks trades [i.e., 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 Subcontractor Utilization Plan as part of its bid submission. The Agency may grant a request for Modification of a Contractor's Subcontractor 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 Subcontractor Participation Goals. In making such determination, Agency shall consider evidence of the following efforts, as applicable, along with any other relevant factors:**

Sub-paragraphs (a) through (h) remain unchanged.

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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 content 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 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.

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 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.

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

2.1.5 **"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.

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

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

2.1.8 **"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.

2.1.9 **"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.

2.1.10 **"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.

2.1.11 **"Contractor"** shall mean the entity which executed this Contract, whether a corporation, firm, partnership, joint venture, individual, or any combination thereof, and it(s), 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.

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

2.1.13 **"Engineer"** or **"Architect"** or **"Project Manager"** shall mean the person so designated in writing by the Commissioner to act as such in relation to this Contract, including a private Architect or Engineer or Project Manager, as the case may be.

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

2.1.15 **"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.

2.1.16 **"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.

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

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

2.1.19 **"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.

2.1.20 "**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.

2.1.21 "**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.

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

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

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

2.1.25 "**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.

2.1.26 "**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.

2.1.27 "**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.

2.1.28 "**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.

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

2.1.30 "**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, at the site. Wherever the word Subcontractor appears, it shall also mean Sub-Subcontractor.

2.1.31 "**Substantial Completion**" shall mean the written determination by the Commissioner that the Work required under this Contract is substantially, but not entirely, complete.

2.1.32 "**Treasurer**" shall mean the Commissioner of the Department of Finance of the City of New York.

2.1.33 **"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 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 Department of Environmental Protection.

5.3.2 The Contractor agrees to comply with Section 24-219 of the Administrative Code of the City ("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 work 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 New York City Department of Environmental Protection. In addition, the Contractor's certified Construction Noise Mitigation Plan is subject inspection by the Department of Environmental Protection in accordance with 15 RCNY §28-101. No Contract work may take place at a worksite 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 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 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.

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 to fulfill the requirements of this Article 5.4.2, where the Commissioner of the New York 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 City agencies and Contractors. Any such determination shall expire after six months unless renewed.

5.4.2(c) Contractors shall not be required to comply with this Article 5.4.2 where the 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 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 is available. Any finding made pursuant to this subdivision shall expire after sixty days, at which time the requirements of this Article 5.4.2 shall be in full force and effect unless the 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 Agency issuing this solicitation.

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 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 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 calendar 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)(1) Where the 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 those paragraphs is unavailable for such vehicle, Contractor shall use whatever technology for reducing the emission of pollutants, if any, is available and appropriate for such vehicle.

5.4.3(d)(2) 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, 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)(3) In determining which technology to use for the purposes of Articles 5.4.3(d)(1) and 5.4.3(d)(2) above, 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)(4) Contractors 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 Agency issuing the solicitation. Any finding or waiver made or issued pursuant to Articles 5.4.3(d)(1) and 5.4.3(d)(2) above shall expire after one hundred eighty days, at which time the requirements of Article 5.4.3(a) shall be in full force and effect unless the 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. Contractors 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) 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 and ten thousand 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 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 Department the following information:

5.4.6(1) The total number of diesel-powered Nonroad Vehicles used to fulfill the requirements of this Public Works Contract;

5.4.6(2) The number of such Nonroad Vehicles that were powered by Ultra Low Sulfur Diesel Fuel;

5.4.6(3) 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(4) 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(5) The locations where such Nonroad Vehicles were used; and

5.4.6(6) 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.

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 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 of New York 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 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 terms shall not apply to horticultural maintenance vehicles used for landscaping purposes that are powered by a Nonroad Engine of sixty-five horsepower 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.

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 horsepower (HP) rating of 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.

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 the persons and 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 notify in writing the commercial general liability insurance carrier, and, where applicable, the worker's compensation and/or other insurance carrier, of any such loss, damage, injury, or accident, and any claim or suit arising therefrom, immediately, but not later than 20 days after such event. The **Contractor's** notice to the commercial general liability insurance carrier must expressly specify that "this notice is being given on behalf of the City of New York as Additional Insured as well as [the Contractor] as Named Insured." The **Contractor's** notice to the insurance carrier shall contain the following information: the name of the **Contractor**, the number of the **Contract**, the date of the occurrence, the location (street address and borough) of the occurrence, and the identity of the persons or things injured, damaged or lost.

7.3.2(a) At the time notice is provided to the insurance carrier(s), the **Contractor** shall provide copies of such notice to the **Comptroller** and the **Commissioner**. Notice to the **Comptroller** shall be sent to the Insurance Unit, NYC Comptroller's Office, 1 Centre Street – Room 1222, New York, New York, 10007. Notice to the **Commissioner** shall be sent to the address set forth in Schedule A of the General Conditions.

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 indemnify, defend and hold the **City**, its employees and agents (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 **Contractor** waives all rights against the **City** for any damages or losses for which either is covered under any insurance required under Article 22 (whether or not such insurance is actually procured) or any other insurance applicable to the operations of the **Contractor** and/or its **Subcontractors** in the performance of this **Contract**.

7.6 The provisions of this Article 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 **Work** on the date specified in a written notice signed by the **Commissioner**. The time for performance of the **Work** under the **Contract** shall be computed from the date specified in such written notice. **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 herein, 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 with this **Contract**, unless otherwise directed by the **Engineer**, shall submit to the **Engineer** a proposed progress schedule 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**; 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** 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 enable 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, 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 Section 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 fully 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.

11.1.3 Within 60 days of submission of the final verified statement of claims pursuant to Article 44, 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.

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 City 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 work for a period exceeding thirty days, that was not brought about through any action or omission of the **Contractor**.

11.4.1.5 Differing site conditions that were not known or 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 The provisions of this Article 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 section shall be allowed.

11.5 Non-Compensable Delays. The **Contractor** agrees to make no monetary request for, and has 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 or similar situation;

11.5.5 Any shortages of supplies of materials 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 war or of the public enemy or terrorist acts;

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 dates of the claimed periods of delay and, in addition, a description of the operations that were delayed, the reasons for the delay and an explanation of how they were delayed.

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 section 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 Labor;

11.7.1.2 Materials;

11.7.1.3 Equipment;

- 11.7.1.4 Extended Field Office Costs;
- 11.7.1.5 Extended Contract Site Overhead;
- 11.7.1.6 Extended Home office overhead; and
- 11.7.1.7 Insurance and Bond Costs.

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 11.7.1.1 through 11.7.1.6, and an additional overhead of 5% of the costs outlined in 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 that a compensable delay has occurred and agree on the amount of compensation, payment may be made pursuant to a written change order, subject to pre-audit by the **Engineering Audit Officer**, and may be post-audited by the **Comptroller** and/or the **Department**.

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** shall determine 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. Except as provided for in Article 11.4.1.1, the **Contractor** agrees to make no claim against the **City** for

any damages relating to or arising out of any timely directions issued by the **Engineer** pursuant to this article (including but not limited to the failure of any **Other Contractor** to comply or promptly comply with such directions), or the failure of any **Other Contractor** to coordinate its work, or the default in performance of any **Other Contractor**.

12.4 The **Contractor** shall indemnify and hold the **City** harmless from any and all claims or judgments for damages and from costs and expenses to which the **City** may be subjected or which it may suffer or incur by reason of the **Contractor's** failure to comply with the **Engineer's** directions promptly; and the **Comptroller** shall have the right to exercise the powers reserved in Article 23 with respect to any claims which may be made for damages due to this **Contractor's** failure to comply with the **Engineer's** direction 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 **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 suit based upon such claim and if any judgment or claims (even if the allegations of the suit 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 and the **PPB Rules**.

13.2 Any extension of time may be granted only by the **Commissioner** 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 officers, 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 **Commissioner** 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 **Commissioner** 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 **Commissioner** or the Board on an application for an extension of time shall be binding and conclusive on the **Contractor**.

13.6 The granting of an application for an extension of time for causes of delay other than those herein referred to shall be entirely within the discretion of the **Commissioner** or the Board.

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 **Commissioner** of the condition which allegedly has caused or is causing the delay, and shall submit a written application to the **Commissioner** 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 bid amount;

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 **Commissioner** 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 **Commissioner** 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 **Commissioner** 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 **Commissioner**, 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 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** except as set forth in Article 11, and agrees that all it may be entitled to on account of any such delay for which compensation is not specifically provided for in Article 11 is an extension of time to complete performance of the **Work** as provided herein.

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 in Articles 14.2.1 and 14.2.2 have been met. The **Commissioner** will then issue a Certificate of **Substantial Completion**.

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 Punch List and Date for Final Acceptance:** Following inspection of the **Work**, the **Engineer** shall furnish the **Contractor** a final punch list, specifying all items of **Work** to be completed. The **Contractor** shall then submit to the **Engineer** dates for the completion of each specified item of **Work**. 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, shall establish dates for the completion of each item of **Work**. The latest completion date specified shall be the date for **Final Acceptance** of the **Work**.

14.3 **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**.

14.4 **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.

14.5 **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.

14.6 **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 complete the **Work** within the time fixed for such 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 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 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 shall apply to the **Contractor** if it 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 this article. In the event the **Commissioner** takes over, uses, occupies, or operates any part of the **Work**:

16.1.1 the **Commissioner** 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, 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 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.

17.4 The **Commissioner** will notify the **Contractor** in writing whether the proposed **Subcontractor** is qualified or not qualified. If the proposed **Subcontractor** is not qualified, the **Contractor** may submit another proposed **Subcontractor** unless the **Contractor** decides to do the **Work**. No **Subcontractor** shall be permitted on the **Site** unless approved.

17.5 Before entering into any subcontract hereunder, the **Contractor** shall inform the **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**.

17.6 Documents given to a **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.

17.7 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.

17.8 The **Contractor** shall be responsible for ensuring that all **Subcontractors** performing **Work** at the **Site** have either their own insurance coverage or are covered by the **Contractor's** insurance as required by Article 22.

17.9 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:

17.9.1 **Payment to Subcontractors:** The agreement between the **Contractor** and its **Subcontractors** 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**.

17.9.2 **Prevailing Rate of Wages:** The agreement between the **Contractor** and its **Subcontractors** shall include the prevailing wage rates and supplemental benefits to be paid in accordance with Labor Law Section 220.

17.9.3 **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 its **Subcontractors** in excess of \$50,000 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.).

17.10 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 adjusted.

17.11 On **Contracts** where 100% 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.

17.12 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, or conveyance shall not be valid until filed in the office of the **Commissioner** and the **Treasurer**, 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 or conveyance, 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 GUARANTY**

ARTICLE 19. SECURITY DEPOSIT

19.1 The bid deposit, if required, shall be retained by the **Comptroller** as security for the **Contractor's** faithful performance of the **Contract** and will be returned to the **Contractor** only after the sum retained under Article 21 equals the amount of the bid deposit, subject to the other provisions of this **Contract**. If performance and payment bonds are required, any bid security posted shall be returned within a reasonable time after posting of such bonds and execution of this **Contract** by the **City**. When no partial payments are provided, the bid deposit will be released when final payment is certified to the **Comptroller** for payment.

19.2 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**:

19.2.1 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

19.2.2 To indemnify the **City** against any and all claims.

ARTICLE 20. PAYMENT GUARANTEE

20.1 On **Contracts** where 100% performance bonds and payment bonds are executed, this article does not apply.

20.2 In the event the terms of this **Contract** do not require the **Contractor** to provide a payment bond, the **City** shall, in accordance with the terms of this article, guarantee payment of all lawful demands 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 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 this Article 20.3.

20.3.2 Nothing in this article 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**.

20.3.3 All demands made against the **City** pursuant to this article shall be made within four (4) months from the date payment is due on the invoice or invoices submitted by the beneficiary to the **Contractor** for labor or **Work** done or for materials or supplies delivered, or, if the demand is for wages, four (4) months from the date the wages were due to be paid to the beneficiary.

20.3.4 All demands made against the City by such beneficiary shall be presented to the Engineer along with all written documentation concerning the demand which the Engineer deems 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.

20.3.5 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.

20.3.6 The City will not initiate the payment process of this article or make payment on a demand where the beneficiary making the demand has filed a lien against the Work or otherwise sues the City prior to receiving a written notice from the City that it will not pay the demand.

20.3.7 No beneficiary shall be entitled to interest from the City, or to any other costs, including, but not limited to, attorney's fees.

20.4 Upon the receipt by the City of a demand pursuant to this article, 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.

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.

20.4.2 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 lien has been filed, the terms and conditions set forth in Article 23 shall apply.

20.5 The provisions of this article 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, 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 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 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 his **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 within the one year limitations period set forth in Section 137(4)(b).

ARTICLE 21. RETAINED PERCENTAGE

21.1 If this **Contract** requires 100% 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 100% performance and payment security and if the price for which this **Contract** was awarded does not exceed \$500,000, then as further security for the faithful performance of this **Contract**, the **Commissioner** shall deduct, and retain until the substantial completion of the **Work**, ten (10%) percent of the value of **Work** certified for payment in each partial payment voucher.

21.3 If this **Contract** does not require 100% performance and payment security and if the price for which this **Contract** was awarded exceeds \$500,000, 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: 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**), the **Contractor** shall effect 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 issued by companies that meet the standards of Article 22.2.1 and shall be primary (and non-contributing) to any insurance or self-insurance maintained by the **City**.

22.1.1 Commercial General Liability Insurance: The **Contractor** shall provide a Commercial General Liability Insurance policy covering the **Contractor** as Named Insured and the **City** as an Additional Insured. This policy shall protect the **City** and the **Contractor** from claims for property damage and/or bodily injury, including death, which may arise from any of the operations under this **Contract**. Coverage under this policy shall be at least as broad as that provided by ISO Form CG 0001 (10/01 ed.), must be "occurrence" based rather than "claims-made", and shall 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, Medical Payments, Independent Contractors, Personal Injury (Contractual Exclusion deleted), Explosion, Collapse and Underground Property, and Incidental Malpractice. If such insurance contains an aggregate limit, it shall apply separately to this **Project**.

22.1.1(a) Such Commercial General Liability Insurance shall name the City, together with its officials and employees, as an Additional Insured under this policy. Coverage for the City as Additional Insured shall specifically include the City's officials and employees, and shall be at least as broad as either Insurance Services Office ("ISO") Form CG 20 10 (07/04 ed.) or Form CG 20 33 (07/04 ed.) and shall provide completed operations coverage at least as broad as CG 20 37 (07/04 ed.).

22.1.1(b) If this **Contract** is equal to or greater than Ten Million Dollars (\$10,000,000.00), each Commercial General Liability Insurance policy provided shall contain each of the following endorsements:

22.1.1(b)(i) The Duties in the Event of Occurrence, Claim or Suit condition of the policy is amended per the following: If and insofar as knowledge of an "occurrence", "claim", or "suit" is relevant to the City of New York as Additional Insured under this policy, such knowledge by an agent, servant, official, or employee of the City of New York will not be considered knowledge on the part of the City of New York of the "occurrence", "claim", or "suit" unless the following position shall have received notice thereof from such agent, servant, official, or employee: Insurance Claims Specialist, Affirmative Litigation Division, New York City Law Department; and

22.1.1(b)(ii) Any notice, demand or other writing by or on behalf of the Named Insured to the Insurance Company shall also be deemed to be a notice, demand, or other writing on behalf of the City as Additional Insured. Any response by the Insurance Company to such notice, demand or other writing shall be addressed to Named Insured and to the City at the following addresses: Insurance Unit, NYC Comptroller's Office, 1 Centre Street - Room 1222, New York, N.Y. 10007; and Insurance Claims Specialist, Affirmative Litigation Division, New York City Law Department, 100 Church Street, New York, NY 10007.

22.1.2 Workers' Compensation Insurance and Disability Benefits Insurance: The **Contractor** shall provide, and ensure that each **Subcontractor** provides, Workers Compensation 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 qualifying for insurance pursuant to Article 22.1.4).

22.1.3 Employers' Liability Insurance: The **Contractor** shall provide, and ensure that each **Subcontractor** provides, Employers Liability Insurance affording compensation due to bodily injury by accident or disease sustained by any employee arising out of and in the course of his/her employment under this **Contract** (except for those qualifying for insurance pursuant to Article 22.1.4).

22.1.4 United States Longshoremen's and Harbor Workers Act and/or Jones Act Insurance: The **Contractor** shall provide, and ensure that each **Subcontractor** provides, 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**.

22.1.5 Builders' Risk Insurance: The **Contractor** shall provide a Builders' Risk Insurance policy covering all risks in completed value form. Such policy shall cover the total value of the **Work** performed in accordance with Schedule A, as well as the value of any equipment, supplies and/or material for the **Project** that may be in storage (on or off the **Site**) or in transit. The policy shall cover the cost of removing debris, including demolition as may be legally necessary by the operation of any law, ordinance or regulation, and for loss or damage to any owned, borrowed, leased or rented capital equipment, tools, including tools of their agents and employees, staging towers and forms,

and property of the City held in their care, custody and/or control. Such policy shall name as insureds the City, the Contractor, and its Subcontractors. The Builders' Risk policy shall contain the following endorsements:

22.1.5(a) The City and the Contractor shall be named as loss payee for the Work in order of precedence, as their interest may appear; and

22.1.5(b) In the event the loss occurs at an occupied facility, the policy shall permit occupancy without the consent of the Insurance Company; and

22.1.5(c) In the event that the insurance policy has been issued by a mutual insurance company, the following language shall be included: "The City of New York is not liable for any premium or assessment under this policy of insurance. The First Named Insured is solely liable therefor."

22.1.6 Comprehensive Business Automobile Liability Insurance: The Contractor shall provide a Comprehensive Business Automobile Liability policy for liability arising out of any owned, non-owned, leased and hired vehicles to be used in connection with this Contract. Coverage should be at least as broad as ISO Form CA0001, ed. 10/01.

22.1.6(a) If autos 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.

22.1.7 Pollution/Environmental Liability Insurance: The Contractor shall provide Pollution/Environmental Liability Insurance covering bodily injury and property damage, including loss of use of damaged property or of property that has not been physically injured. 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, suit, or proceedings against the City arising from the operations under this Contract. Such insurance shall be in the Contractor's name and list the City as an Additional Insured. Coverage for the City as Additional Insured shall specifically include the City's officials and employees, and shall be at least as broad as provided to the Contractor for this Project.

22.1.7(a) If such coverage 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 years from the time the Work under this Contract is completed.

22.1.8 Marine Insurance:

22.1.8(a) Marine Protection and Indemnity Insurance: The Contractor shall provide a Marine Protection and Indemnity policy with coverage at least as broad as policy form SP-23. The policy shall provide coverage for the Contractor and for the City (together with its officials and employees) as Additional Insured for bodily injury and property damage arising from marine operations under this Contract including injury or death of crew members (if not fully provided through other insurance), damage to piers, wharves and other fixed or movable structures and loss of or damage to any other vessel or craft, or to property on such other vessel or craft, not caused by collision.

22.1.8(b) Ship Repairers Legal Liability Insurance: The Contractor shall provide a Ship Repairers Legal Liability Insurance policy covering all repair operations under this Contract at

or in the vicinity of a designated approved port or yard under this **Contract**. The policy shall provide coverage from the point of acceptance of care custody and control of any **City** vessel. The policy shall provide Bailee Coverage for any **City** vessel in the **Contractor's** care, custody and control and coverage for damage to property of others caused by any **City** vessel in the **Contractor's** care custody and control.

22.1.8(c) Collision Liability/Towers Liability Insurance: The **Contractor** shall provide a Collision Liability/Towers Liability Insurance policy with coverage for the **Contractor** and for the **City** (together with its officials and employees) as Additional Insured at least as broad as the American Institute Tug Form (08/01/76) for all tugs used under this **Contract** and Collision Liability per American Institute Hull Clauses (6/2/77).

22.1.8(d) Marine Pollution Liability Insurance: The **Contractor** shall provide a Marine Pollution Liability Insurance policy covering itself as Named Insured and the **City** (together with its officials and employees) as Additional Insured for 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. Coverage under this policy shall be at least as broad as that provided by Water Quality Insurance Syndicate Form (09/98 ed.).

22.1.9 The **Contractor** shall provide such other types of insurance, at such minimum limits, as are specified in Schedule A of the General Conditions.

22.2 General Requirements for Insurance 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 AA, unless prior written approval is obtained from the Mayor's Office of Operations.

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 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 All required insurance policies, except for insurance required pursuant to Sections 22.1.2, 22.1.3, and 22.1.4, shall contain the following endorsement: "This policy may not be cancelled, terminated, modified or changed unless thirty (30) days prior written notice is sent by the Insurance Company to the Named Insured (or First Named Insured, as appropriate), the **Commissioner**, and to the **Comptroller**, attn: Office of Contract Administration, Municipal Building, Room 1005, New York, New York 10007."

22.3 Proof of Insurance:

22.3.1 Within ten (10) **Days** of award, the **Contractor** shall, for each policy required under this **Contract**, except for Workers Compensation Insurance and Disability Benefits Insurance and builders' risk insurance, file a Certificate of Insurance with the **Commissioner** pursuant to Article 22.6. For Workers' Compensation Insurance and Disability Benefits Insurance, the **Contractor** shall file proof of insurance in a form acceptable to the **Commissioner** within ten (10) **Days** of award. Accord forms are not acceptable proof of workers' compensation coverage. The **Contractor** must submit one of the following forms to the Department, or another form acceptable to the Department: C-105.2 -- Certificate of Workers' Compensation Insurance, or U-26.3 -- State Insurance Fund Certificate of Workers' Compensation Insurance. For builders' risk insurance, the **Contractor** shall file a Certificate of Insurance with the **Commissioner** at the direction of the **Commissioner** but in any event no later than ten (10) **Days** prior to commencement of the **Work**.

22.3.1(a) All Certificates of Insurance shall be in a form acceptable to the **City** and shall certify the issuance and effectiveness of the types of insurance specified in Schedule A, each with the specified minimum limits and evidence of the compliance with the Additional Insured or Named Insured provisions of Articles 22.1.1(a), 22.1.5, 22.1.7, and 22.1.8, as applicable. All Certificate(s) of Insurance shall be accompanied by either a duly executed "Certification by Broker" in the form contained in Part II of Schedule A or completed copies of all policies referenced in the Certificate of Insurance. In the absence of completed policies, binders are acceptable.

22.3.2 Certificates of Insurance confirming renewals of insurance shall be submitted to the **Commissioner** prior to the expiration date of coverage of policies required under this **Contract**. Such Certificates of Insurance shall comply with the requirements of Article 22.3.1(a) and, if applicable, Article 22.3.1(b).

22.3.3 The **Contractor** shall be obligated to provide the **City** with a copy of any policy required by this Article 22 upon the demand for such policy by the **Commissioner** or the New York City Law Department.

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 hereunder does not excuse the **Contractor** from securing a policy consistent with all provisions of this Article 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.

22.5 The **City** as Additional Insured or Loss Payee under **Subcontractors'** Insurance. The **Contractor** shall ensure that each **Subcontractor** name the **City** as Additional Insured or loss payee, as appropriate, under all

policies covering **Work** performed by such **Subcontractor** under this **Contract**. The **City's** coverage as **Additional Insured** shall include the **City's** officials and employees and be at least as broad as that provided to the **Contractor**. The foregoing requirements shall not apply to insurance provided pursuant to Articles 22.1.2, 22.1.3, and 22.1.4.

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 If the **Contract** involves disposal of hazardous materials, the **Contractor** shall dispose such materials only at sites where the disposal site operator maintains Pollution Legal Liability Insurance in the amount of at least \$2,000,000 for losses arising from such disposal site.

22.8 **Materiality/Non-Waiver:** The **Contractor's** failure to secure policy(ies) in complete conformity with this Article, or to give the Insurance Company timely notice of any sort required in this **Contract** on behalf of the **City**, or to do anything else required by this Article 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.

22.9 **Other Remedies:** Insurance coverage in the minimum amounts provided for herein shall not relieve the **Contractor** or **Subcontractors** of any liability under this **Contract**, nor shall it preclude the **City** from exercising any rights or taking such other actions as are 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, and return the balance, if any, without interest, to the **Contractor**.

23.3 **Liens:** If at any time before or within thirty (30) **Days** after the **Work** is completed and accepted by the **City**, any persons claiming to have performed any labor or furnished any material toward the performance or completion of this **Contract**, shall file with the **Agency** and with the **Treasurer** any notice as is described in the

New York State Lien Law, or any act of the Legislature of the State of New York, the City shall retain, from the monies due or to become due under this Contract, so much of such monies as shall be sufficient to pay the amount claimed in said notice, together with the reasonable costs of any action or actions brought or that may be brought to enforce such lien. The monies so retained shall be held by the City until the lien thereon created by the said act and the filing of the said notice shall be discharged pursuant to Law.

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 guarantee are provided for.

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 or lessees of the premises.

**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 **Laws** 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 **Department**.

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 a time and material basis 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 on a time and material basis 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.

26.2.1 Necessary materials (including transportation to the **Site**); plus

26.2.2 Necessary direct labor, including payroll taxes 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, 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 PRIMEDIA (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 PRIMEDIA (the "Blue Book"). The reasonable rental value is 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 percent of such rental rates; second shift shall be sixty percent of the first shift rate; and third shift shall be forty percent of the first shift rate. Equipment on standby shall be reimbursed at one-third the prorated monthly rental rate. **Contractor**-owned equipment includes equipment from rental companies affiliated with or controlled by the **Contractor**, as determined by the **Commissioner**. In establishing cost reimbursement for non-operating contractor-owned 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 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 Reasonable rental costs of non-**Contractor**-owned 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

26.2.7 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 shall be based upon the Manual Rate for such insurance for the applicable work classifications/codes, in accordance with the most recent schedule promulgated by the New York Compensation Insurance Rating Board; plus

26.2.8 Additional costs incurred as a result of the **Extra Work** for performance and payment bonds; plus

26.2.9 Ten (10%) 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

26.2.10 Ten (10%) percent of the total of items in Articles 26.2.1 through 26.2.5, plus item 26.2.9, 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

26.2.11 Five (5%) percent of the total of items in Article 26.2.6, 26.2.7, and 26.2.8 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**. The cost of such **Extra Work** and of such omitted or reduced **Work** shall be computed based upon applicable **Contract** unit prices. Where there are no applicable **Contract** unit prices, the cost of such **Extra Work** and of such omitted or reduced **Contract Work** shall be computed in accordance with items 26.2.1 through 26.2.8. If the cost of such **Extra Work** exceeds the costs of such omitted or reduced **Contract Work**, the **Contract** price shall be increased by the difference, plus percentages for overhead and profit as provided in Articles 26.2.9 through 26.2.11. If the cost of the omitted or reduced **Contract Work** exceeds the cost of the **Extra Work**, then the **Contract** price shall be reduced by the difference.

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 that arise under, or by virtue of, this **Contract** shall be finally resolved in accordance with the provisions of this article 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 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 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 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 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, 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 disputed 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 **Contractor** thus brought into the dispute resolution proceeding shall have the same rights and obligations under this article 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 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. 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 **Agency 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 section 7-201 and 7-203 of the New York City 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 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 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;

27.6.1.1 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

27.6.2 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, 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 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 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 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 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 Corporation Counsel, the Director of the Office of Construction, 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 Laws 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.

27.8 Any termination, cancellation, or alleged breach of the **Contract** prior to or during the pendency of any proceedings pursuant to this article 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.

ARTICLE 28. RECORD KEEPING FOR EXTRA OR DISPUTED WORK

28.1 While the **Contractor** or any of its **Subcontractors** is performing **Extra Work** on a Time and Material Basis ordered by the **Commissioner** under Article 25, or is performing **disputed Work**, or complying with a determination or order under protest in accordance with Articles 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 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** 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 fully 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.

30.2 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, 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, 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, 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 or Comptroller** 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 or Comptroller** 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.

30.5 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 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** 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, officer, 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 Resident Engineer, or any other officer, 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 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 hours in duration.

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.

36.1.5 The aforesaid provisions of this article covering every **Contract** for or on behalf of the State or a municipality for the manufacture, sale or distribution of materials, equipment or supplies shall be limited to operations performed within the territorial limits of the State of New York.

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 section 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 all information and reports including an Employment Report before the award of the **Contract** which are required by E.O. 50, the Rules and Regulations promulgated thereunder, and orders of the 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.

Failure to comply with E.O. 50 and the rules and regulations promulgated thereunder, in one or more instances, may result in the **Agency** declaring the **Contractor** to be non-responsible.

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 VIII of the Administrative Code;

36.5.2 every agreement between the **Contractor** and its **Subcontractors** in excess of \$50,000 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.); and

36.5.3 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 Section 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) calendar **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**. Minimum wages shall be the rates fixed by Federal **Law** and regulations.

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.

37.4 **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 wage scale as provided in Labor Law Section 220, as amended, or

37.4.1(b) Less than 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) and Minimum Wages (Article 37.2.6), the party responsible therefore 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 suits brought by the Corporation Counsel in the name of the **City**, in addition to damage for any other breach of this **Contract**, 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 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 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, whether such failures were concurrent or consecutive and whether or not such final determinations concerning separate public work projects are rendered simultaneously, such **Contractor** or **Subcontractor** shall be ineligible to submit a bid on or be awarded any public work 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 work 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 may be directed to make payment of wages or supplements including interest found to be due, and the **Contractor** or **Subcontractor** may be directed to make payment of a further sum as a civil penalty in an amount not exceeding twenty-five (25%) percent of the total amount found to be due.

37.5 The **Contractor** and its **Subcontractors** shall within ten (10) **Days** after mailing of a Notice of Award or written order, post in prominent and conspicuous places in each and every plant, factory, building, and structure where employees of the **Contractor** and its **Subcontractors** engaged in the performance of this **Contract** are employed, notices furnished by the **City**, in relation to prevailing wages and supplements, minimum wages and other stipulations contained in Sections 220 and 220-h of the Labor Law, and the **Contractor** and its **Subcontractors** shall continue to keep such notices posted in such prominent and conspicuous places until **Final Acceptance** of the supplies, materials, equipment, or **Work**, labor, or services required to be furnished or rendered under this **Contract**.

37.6 The **Contractor** shall strictly comply with all of the provisions of Articles 37.6.1 through 37.6.5, and provide for all workers, laborers or mechanics in its employ, the following:

37.6.1 Notices Posted At Site: Post, in a location designated by the **City**, schedules of prevailing wages and supplements for this **Project**, a copy of all re-determinations of such schedules for the

Project, the Workers' Compensation Law Section 51 notice, all other notices required by law to be posted at the **Site**, the **City** notice that this **Project** is a public works **Project** on which each worker is entitled to receive the prevailing wages and supplements for the occupation at which he or she is working, and all other notices which the **City** directs the **Contractor** to post. The **Contractor** shall provide a surface for such notices which is satisfactory to the **City**. The **Contractor** shall maintain and keep current such notices in a legible manner and shall replace any notice or schedule which is damaged, defaced, illegible or removed for any reason. The **Contractor** shall post such notices before commencing any **Work** on the **Site** and shall maintain such notices until all **Work** on the **Site** is complete; and

37.6.2 **Daily Site Sign-in Sheets:** Maintain daily **Site** sign-in sheets, and require that **Subcontractors** maintain daily **Site** sign-in sheets for its employees, which include blank spaces for an employee's name to be both printed and signed, job title, date started and Social Security number, the time the employee began **Work** and the time the employee left **Work**, until **Final Acceptance** of the supplies, materials, equipment, or **Work**, labor, or services to be furnished or rendered under this **Contract** unless exception is granted by the Comptroller upon application by the **Agency**. In the alternative, subject to the approval of the CCPO, the **Contractor** and **Subcontractor** may maintain an electronic or biometric sign-in system, which provides the information required by this Article 37.6.2; and

37.6.3 **Individual Employee Information Notices:** Distribute a notice, to each worker, laborer or mechanic employed under this **Contract**, in a form provided by the **Agency**, that this **Project** is a public work 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 dollars, such notice shall also include a statement that, that each worker, laborer or mechanic 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 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, which signed statement shall be maintained with the payroll records required by this **Contract**; and

37.6.3.1 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:** Provide laminated identification badges which indicate the worker's, laborer's or mechanic's name, trade, employer's name and employment starting date (month/day/year). Further, 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**; 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 in Article 37.6.1 in that language or languages as may be required. The **Contractor** is responsible for all distributions under 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 If this **Contract** is for an amount greater than \$1,000,000, 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 \$750,000, 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** or **Subcontractor(s)** 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**.

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 with the provisions of this article 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** for 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** shall maintain on the **Site** the original payrolls or transcripts thereof which the **Contractor** and its **Subcontractor(s)** are required to maintain pursuant to **Labor Law** Section 220. The **Contractor** and **Subcontractor(s)** shall submit original payrolls or transcripts, subscribed and affirmed by it as true, with each and every payment requisition. 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 original payrolls or transcripts thereof, subscribed and affirmed by it as true, and the statements signed by each worker pursuant to this Chapter VIII. In addition, the **Contractor** and **Subcontractor(s)** shall furnish to the **Engineer** upon written demand any other information to satisfy the **Engineer** that this Chapter VIII and the **Labor Law**, as to the hours of employment and rates of wages, are being observed. The **Contractor** shall maintain the payrolls or transcripts thereof for six (6) years from the date of completion of the **Work** on this **Contract**.

38.2 When directed by the **Engineer**, the **Contractor** or **Subcontractor** shall provide the **Engineer** with an attendance sheet for each **Day** on which **Work** is performed on the **Site**. Such attendance sheet shall be in a form acceptable to the **Agency** and shall provide information for employees of the **Contractor** and **Subcontractor(s)**.

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** void.

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 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, 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 a month, 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 such satisfactory payment application, 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 **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 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 section 43.5 herein, then the **Contractor** shall pay interest on amounts due to such **Subcontractor** or **Materialman** at a 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 NY General Business Law. Accrual of interest shall commence on the day immediately following the expiration of the seventh day following receipt of payment to the **Contractor** by 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 suppliers 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 When the **Work** in the opinion of the **Commissioner**, has been substantially but not entirely completed, he/she shall issue a certificate of **Substantial Completion**.

44.2 The **Contractor** shall submit with the **Substantial Completion** requisition:

44.2.1 A Final Verified Statement of any and all alleged claims against the **City** and any pending dispute resolution procedures in accord with the **PPB Rules** and this **Contract**, 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.

44.2.1(a) With respect to each such claim, the **Commissioner**, the **Comptroller** and, in the event of litigation, the Corporation Counsel of the **City** 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 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, will have waived any such claims.

44.2.2 A **Final Approved Punch List**.

44.2.3 Where required, a request for a substantial or final extension of time.

44.3 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 where the **Contractor** shall fail 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.

44.4 No further partial payments shall be made to the **Contractor** after the **Commissioner** issues a Certificate of **Substantial Completion**, except the **Substantial Completion** payment and **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.

44.5 The **Contractor** acknowledges that nothing contained in this article 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. 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 and all alleged claims against the **City**, and any pending dispute resolution procedures in accord with the **PPB** Rules and this **Contract**, 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 Corporation Counsel of the **City** 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, is entitled 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 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 to 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 officers, 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, or those for amounts deducted by the **Commissioner** from the final requisition or by the **Comptroller** 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 officer, 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 from commencing an action for breach of **Contract** under this provision to the extent permitted by **Law** and by the terms of the **Contract** 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 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 the 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.

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 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 a lawsuit 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 provision 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 complete 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 previous provisions of this Chapter X shall be in addition to any and all other legal or equitable remedies permissible in the premises.

54.3 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**.

54.4 The expense of such completion, 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**.

**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 lawsuit, 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 lawsuit be instituted or maintained on any such claims unless such lawsuit is commenced within six (6) months after the date the **Commissioner** issues a Certificate of **Substantial Completion** pursuant to Article 44; except that:

56.2.1 Any claims arising out of events occurring after the date the **Commissioner** issues a Certificate of **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 becomes 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 lawsuit 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 indemnify the **City** against any and all claims and judgments for damages for any infringement of copyright and patents or use of patented articles, tools, materials, equipment, appliances or processes in the performance or completion of the **Work**, including all costs and expenses which the **City** shall or may incur or be obligated to pay by reason thereof.

ARTICLE 58. NO CLAIM AGAINST OFFICERS, AGENTS OR EMPLOYEES

58.1 No claim whatsoever shall be made by the **Contractor** against any officer, 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. SERVICES OF NOTICES

59.1 The **Contractor** hereby designates the business 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. Actual delivery of any such notice, direction or communication to the aforesaid place, or depositing it in a postpaid wrapper addressed thereto in any post office box (P.O. Box) regularly maintained by the United States Postal Service, shall be conclusively deemed to be sufficient service thereof upon the **Contractor** as the date of such delivery or deposit.

59.2 Such address 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, local taxes and Sales and Compensation Use Taxes of the State of New York and of cities and counties on all materials and supplies 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** or a **Subcontractor**, or to supplies and materials which even though they are consumed, are not incorporated into the completed **Work** (consumable supplies), and the **Contractor** and its **Subcontractors** shall be responsible for and pay any and all applicable taxes, including Sales and Compensation Use Taxes, on such leased tools, machinery, equipment or other property and upon all such unincorporated supplies and materials.

62.2 The **Contractor** agrees to sell and the **City** agrees to purchase all supplies and materials, other than consumable supplies, 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 supplies and materials shall be in full payment and consideration for the sale of such supplies and materials herein.

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, etc., 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** and labor.

62.3 The purchase by the **Contractor** of the supplies and materials sold hereunder shall be a purchase or procurement for resale and therefore not subject to the New York State or **City** Sales or Compensation Use Taxes or any such taxes of cities or counties. The sale of such supplies and materials by the **Contractor** to the **City** is exempt from the aforesaid sales or compensating use taxes. With respect to such supplies and materials, 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 supplies and materials, free of liens and/or encumbrances, and the **Contractor** shall mark or otherwise identify all such materials as the property of the **City**.

62.4 Title to all materials 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 supplies and materials to the **Site** and prior to its becoming a part of the permanent structure and/or construction. Notwithstanding such transfer of title, the **Contractor** shall have the full and continuing responsibility to install such materials and supplies in accordance with the provisions of this **Contract**, protect them, maintain them in a proper condition and forthwith repair, replace and make good any damage thereto, theft or disappearance thereof, and furnish additional materials 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 such supplies and materials are rejected as being defective or otherwise unsatisfactory, title to all such supplies and materials shall be deemed to have been transferred back to the **Contractor**.

62.5 The purchase by **Subcontractors** of supplies and materials to be sold hereunder shall also be a purchase or procurement for resale to the **Contractor** (either directly or through other **Subcontractors**) and therefore not subject to the aforesaid Sales or Compensation Use Taxes, provided that the subcontract agreements provide for the resale of such supplies and materials prior to and separate and apart from the incorporation of such supplies and materials into the permanent structure and/or construction and that such subcontract agreements are in a form similar to this **Contract** with respect to the separation of the sale of materials from the **Work** and labor, services, consumable supplies and any other matters to be provided, and provided further that the subcontract agreements provide separate prices for materials and all other services and matters. Such separation shall actually be followed in practice, including the separation of payments for supplies and materials from the payments for other **Work** and labor and other things to be provided.

62.6 The **Contractor** and its **Subcontractors** and Materialmen shall obtain any and all necessary **Contractor Exempt Purchase Certificates** or **Resale Certificates** from the appropriate governmental **Agency** or

Agencies, and furnish a **Contractor Exempt Purchase Certificate** or **Resale Certificate** to all persons, firms or corporations from which they purchase supplies and materials for the performance of the **Work** covered by this **Contract**.

62.7 In the event any of the provisions of this article shall be deemed to be in conflict with any other provisions of this **Contract** or create any ambiguity, then the provisions of this article 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 **Agreement**, 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 herein 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 herein 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 herein 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 herein 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, 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 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 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, less salvage value, 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:

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, whichever is less, 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 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 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.

64.2.2 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 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 Material Contracts or Items: On all **Contracts** or items in a **Contract** where time and material records are specified as the basis for payment of the **Work**, 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 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 Cost shall not include overhead.

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

64.4 All payments pursuant to this article 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, 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 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** of New York, State of New York, 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 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 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 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 United States 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 State of New York, upon request of the **City**, the **Contractor** shall either consent to a transfer of the action to a State Court of competent jurisdiction located in the **City** and State 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 State Court of competent jurisdiction in the **City**.

65.3 If any provision(s) of this article 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 Export Administration Act of 1979, as amended, or the regulations of the United States Department of Commerce 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, 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.

67.2 Unless specifically waived by the **Commissioner** with the approval of the Division of Economic and Financial Opportunity of the 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 enterprise ("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 prime **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 LBE's 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 **Contract**. Remedy for such breach of **Contract** may include the imposition of any or all of the following sanctions:

67.6.1 Reducing a **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 Where non-compliance is by an LBE, de-certifying and declaring the LBE 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 and rules, 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 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 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. HEALTH INSURANCE COVERAGE

70.1 If the price for which this Contract was awarded exceeds \$100,000, or if the price for which this Contract was awarded when combined with other construction or services contracts awarded the Contractor by the City in the year prior to award of this Contract exceeds \$100,000, the Contractor, following registration of the Contract, shall be required to submit responses to requests for information regarding the nature of any health insurance provided by the Contractor to its employees and their spouses and domestic partners, upon request of the Agency or other designated City agency.

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 2.

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: *Four million five* Dollars, (\$ *4,513,131.00*), 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.
hundred thirteen thousand one hundred thirty one dollars.

ARTICLE 76. ELECTRONIC FUNDS TRANSFER

76.1 In accordance with Section 6-107.1 of the New York City Administrative Code, the Contractor agrees to accept payments under this Agreement from the City by electronic funds transfer. An electronic funds transfer 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 Agreement, 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 Finance with information necessary for Contractor to receive electronic funds transfer payments through the 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 agreement. 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 agency head may waive the application of the requirements herein to payments on contracts entered into pursuant to §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 contracting agency may waive the requirements hereunder for payments in the following circumstances: (i) for individuals or classes of individuals for whom compliance imposes a hardship; (ii) for classifications or types of checks; or (iii) in other circumstances as may be necessary in the interest of the City.

**ARTICLE 77 – 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 Section 6-129 to the Administrative Code of the City of New York. The local law creates a program for participation by minority-owned and women-owned business enterprises (MBEs and WBEs) in City procurement. As stated in the 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 made pursuant to Local Law 129, and the rules of the Department of Small Business Services ("DSBS") promulgated thereunder.

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 of the Contract (entitled the "Subcontractor Utilization Plan"), and are detailed below. The Contractor must comply with all applicable M/WBE requirements for this Contract. Schedule B of the Contract ("Subcontractor Utilization Plan") is included in the Bid Booklet.

Article I, Part A, below, sets forth provisions related to the participation goals for construction 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
AND PROFESSIONAL SERVICES CONTRACTS**

1. The Target Subcontracting Percentage applicable to this Contract is set forth on Schedule B, Part I to this Contract (see Page 1, line (1)). The "Target Subcontracting Percentage" is the percentage of the total Contract which Agency anticipates that the prime contractor for this Contract would in the normal course of business award to one or more subcontractors for amounts under \$1 million for construction and professional services.

A prospective contractor may seek a full or partial pre-award waiver of the Target Subcontracting Percentage in accordance with Local Law 129 and Part A, Section 10 below. To apply for the a full or partial waiver of the Target Subcontracting Percentage, a prospective contractor must complete Part III (Page 4) of Schedule B, and must submit such request no later than seven (7) days prior to the date and time the bids or proposals are due, in writing to the Agency by e-mail at poped@ddc.nyc.gov or via facsimile at (718) 391-1885. Bidders/proposers who have submitted requests will receive a response by no later than two (2) calendar days prior to the date bids or proposals are due, provided, however, that if that date would fall on a weekend or holiday, a response will be provided by close-of-business on the business day before such weekend or holiday date.

2. The Subcontractor Participation Goals established for this Contract are set forth on Schedule B, Part I to this Contract (see Page 1, line (2) and/or line (3)). The Subcontractor Participation Goals represent a percentage of the total dollar value of all construction and/or professional services subcontracts under this Agreement for amounts under \$1 million.

3. If Subcontractor Participation Goals have been established for this Contract, Contractor agrees or shall agree as a material term of the Agreement that, with respect to the total amount of the Agreement to be awarded to one or more subcontractors pursuant to subcontracts for amounts under \$1 million, Contractor shall be subject to the Subcontractor Participation Goals, unless the goals are modified by Agency in accordance with Local Law 129 and Part A, Section 11 below.

4. If Subcontractor 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, Part II Subcontractor Utilization Plan (see Page 2-3) indicating: (a) the percentage of work it intends to subcontract; (b) the percentage of work it intends to

award to subcontractors for amounts under \$1 million; (c) in cases where the prospective contractor intends to award subcontracts for amounts under \$1 million, a description of the type and dollar value of work designated for participation by MBEs and/or WBEs; and (d) the general time frames in which such work by MBEs and/or WBEs is scheduled to occur. In the event that this Subcontractor Utilization Plan indicates that the bidder or proposer, as applicable, does not intend to award the **Target Subcontracting Percentage**, 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 **Target Subcontracting Percentage** in accordance with Local Law 129 and Part A, Section 10 below.

THE BIDDER/PROPOSER MUST COMPLETE THE SUBCONTRACTOR UTILIZATION PLAN INCLUDED HEREIN (SCHEDULE B, PART II). SUBCONTRACTOR UTILIZATION PLANS WHICH DO NOT INCLUDE THE REQUIRED AFFIRMATIONS WILL BE DEEMED TO BE NON-RESPONSIVE, UNLESS A FULL WAIVER OF THE TARGET SUBCONTRACTING PERCENTAGE IS GRANTED (SCHEDULE B PART III). IN THE EVENT THAT THE CITY DETERMINES THAT VENDOR HAS SUBMITTED A SUBCONTRACTOR UTILIZATION PLAN WHERE THE REQUIRED AFFIRMATIONS ARE COMPLETED BUT OTHER ASPECTS OF THE PLAN ARE NOT COMPLETE, OR CONTAIN A COPY OR COMPUTATION ERROR THAT IS AT ODDS WITH THE AFFIRMATION, THE VENDOR 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 PLAN 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 EMAILED OR FAXED (IF THE VENDOR 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.

5. Where a Subcontractor 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. **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 Subcontractor Participation Goals established for this Contract by proposing one or more subcontractors that are M/WBEs for any portion of the Wicks trade work if the amount to be awarded to such M/WBE subcontractor is under \$1 million. 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. M/WBE firms must be certified by DSBS in order for the Contractor to credit such firms' participation toward the attainment of the M/WBE participation goals. Such certification must occur prior to the firms' commencement of work as subcontractors. 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.

7. Where a Subcontractor 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 paid to subcontractors (including subcontractors that are not MBEs or WBEs); the names, addresses and contact numbers of each MBE or WBE hired as a subcontractor pursuant to such plan as well as 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 paid to subcontractors (including subcontractors that are not MBEs or WBEs); 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 hired pursuant to such plan, 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 Subcontractor Utilization Plan, Agency shall take appropriate action, in accordance with Local Law 129 and Article II below, unless the Contractor has obtained a modification of its Subcontractor Utilization Plan in accordance with Local Law 129 and Part A, Section 11 below.

9. Where a Subcontractor Utilization Plan has been submitted, and the Contractor requests a change order the value of which exceeds 10 percent of the Agreement, Agency shall establish participation goals for the work to be performed pursuant to the change order.

10. Pre-award waiver of **Target Subcontracting Percentage**. Agency may grant a full or partial waiver of the **Target Subcontracting Percentage** to a bidder or proposer, as applicable, who demonstrates—before submission of the bid or proposal—that it has legitimate business reasons for proposing the level of subcontracting in its Subcontractor Utilization Plan. In making its determination, Agency shall consider factors that shall include, but not be limited to, whether the bidder or proposer, 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 for under one million dollars represented by the **Target Subcontracting Percentage**. In making such determination, Agency may consider whether the Subcontractor Utilization Plan is consistent with past subcontracting practices of the bidder or proposer, as applicable, and whether the bidder or proposer, as applicable, has made good faith efforts to identify portions of the Contract that it intends to subcontract.

11. Modification of Subcontractor Utilization Plan. A Contractor may request a modification of its Subcontractor Utilization Plan (**Subcontractor Participation Goals**) 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 Subcontractor Utilization Plan as part of its bid submission.** The Agency may grant a request for Modification of a Contractor's Subcontractor 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 **Subcontractor Participation Goals**. In making such determination, Agency shall consider evidence of the following efforts, as applicable, along with any other relevant factors:

- (a) 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;
- (b) The Contractor provided notice of specific opportunities to participate in the Contract, in a timely manner, to minority and women's business organizations;
- (c) The Contractor sent written notices, by certified mail or facsimile, in a timely manner, to advise MBEs and WBEs that their interest in the Contract was solicited;
- (d) 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 Subcontractor Utilization Plan, and for which the Contractor claims an inability to retain MBEs or WBEs;
- (e) 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;
- (f) The Contractor made efforts to negotiate with MBEs and/or WBEs as relevant to perform specific subcontracts;
- (g) Timely written requests for assistance made by the Contractor to Agency's M/WBE liaison officer and to DSBS;
- (h) 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.

12. If this Contract is for an indefinite quantity of construction or professional services or is a requirements type contract and the Contractor has submitted a Subcontractor Utilization Plan and has committed to subcontract work to MBEs and/or WBEs in order to meet the **Subcontractor Participation Goals**, the Contractor will not be deemed in violation of the M/WBE 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 **Subcontractor Participation Goals** have been established for this Contract, Agency shall evaluate and assess the Contractor's performance in meeting those goals, and such evaluation and assessment shall become part of the Contractor's overall contract performance evaluation.

PART B: MISCELLANEOUS

1. The Contractor shall take notice that, if this solicitation requires the establishment of a Subcontractor 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 Subcontractor Utilization Plan.
2. Pursuant to DSBS rules, construction contracts that include a requirement for a Subcontractor Utilization Plan shall not be subject to the law governing Locally Based Enterprises set forth in Administrative Code Section 6-108.1.
3. DSBS is available to assist contractors and potential contractors in determining the availability of MBEs and WBEs to participate as subcontractors, and in identifying opportunities that are appropriate for participation by MBEs and WBEs in contracts.
4. Prospective contractors are encouraged to enter into joint ventures with MBEs and WBEs.
5. By submitting a bid or proposal the Contractor hereby acknowledges its understanding of the M/WBE requirements set forth herein and the pertinent provisions of Local Law 129 of 2005, and any rules promulgated thereunder, and if awarded this Contract, the Contractor hereby agrees to comply with the M/WBE requirements of this Contract and pertinent provisions of Local Law 129 of 2005, 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 M/WBE's to meet the required **Subcontractor 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 Subcontractor Utilization Plan, Agency shall send a written notice to the Contractor describing the alleged noncompliance and offering 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 this Section 6-129, including, but not limited any Subcontractor 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) assess liquidated damages or reduction of fees, provided that liquidated damages may be based on amounts representing costs of delays in carrying out the purposes of the program established by Section 6-129, 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) exercise 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) take any other appropriate remedy.

4. If a Subcontractor Utilization Plan has been submitted, and pursuant to this Article II, Section 3, the Contractor has been found to have failed to award subcontracts to MBEs and/or WBEs sufficient to meet the Subcontractor Participation Goals contained in its Subcontractor Utilization Plan or the Subcontractor 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 subcontracts required to be awarded to MBE and/or WBE subcontractors to meet the Subcontractor Participation Goals and the dollar amount the Contractor actually awarded and paid to MBE and/or WBE subcontractors. In view of the difficulty of accurately ascertaining the loss which the City will suffer by reason of Contractor's failure to meet the Subcontractor 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.

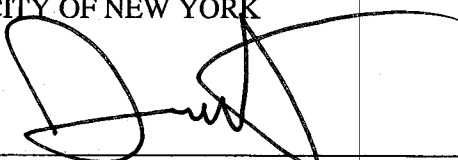
5. Whenever Agency has reason to believe that an MBE or WBE is not qualified for certification, or is participating in a contract in a manner that does not serve a commercially useful function (as defined in Section 6-129), or has violated any provision of Section 6-129, Agency shall notify the commissioner 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 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 Subcontractor Utilization Plan shall be a factor in the evaluation of its performance. Whenever a contracting agency determines that a contractor's compliance with a Subcontractor Utilization Plan has been unsatisfactory, the 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: Galvin Bros., Inc./Madhve Contracting Inc.

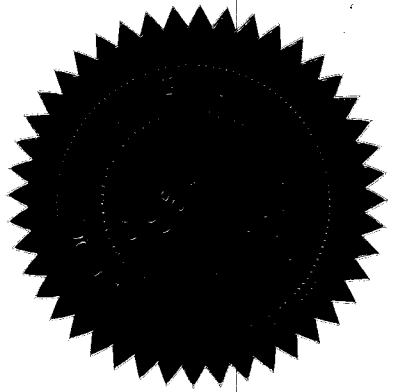
By: 
(Member of Firm or Officer of Corporation)

Title: PRESIDENT

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


Secretary

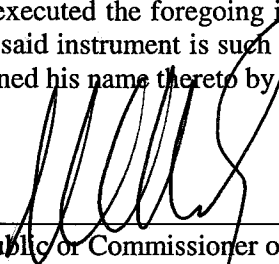
(Seal)



ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION

State of NEW YORK County of NASSAU ss:

On this 17 day of DEC, before me personally came EDWARD P. GALVIN
to me known who, being by me duly sworn did depose and say that he resides at 149
STRAMBOAT RD GREAT NECK 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

VICTORIA AYO-VAUGHAN
Notary Public, State of New York
Registration #01AY5014042
Qualified in Queens County
Commission Expires July 15, 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:

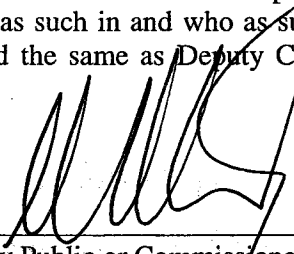
On this _____ day of _____, before me personally appeared _____
to me known, and known to me to be the person described in and who executed the foregoing instrument; and
acknowledged that he executed the same.

Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT BY COMMISSIONER

State of New York County of Queens ss:

On this 13th day of December, 2013, before me personally came David Resnicic 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 #01AY6014042
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

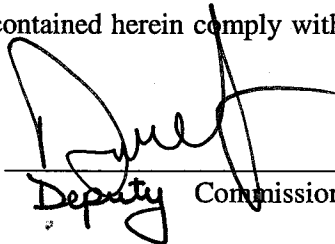
Four million five hundred thirteen
thousand one hundred thirty one dollars.

Dollars (\$ 4,513,131.00)

is chargeable to the fund of the Department of Design and Construction entitled Code

Department of Design and Construction

I hereby certify that the specifications contained herein comply with the terms and conditions of the BUDGET.



Deputy Commissioner

COMPTROLLER'S CERTIFICATE

The City of New York _____

Pursuant to the provisions of Section 6-101 of the Administrative Code of the City of New York, I hereby certify that there remains unapplied and unexpended a balance of the above mentioned fund applicable to this Contract sufficient to pay the estimated expense of executing the same viz:

\$ _____

Comptroller

**MAYOR'S CERTIFICATE OR
CERTIFICATE OF THE DIRECTOR
OF THE BUDGET**

Performance Bond #1 (Pages 80 to 83): 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, _____

hereinafter referred to as the "Principal", and _____

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

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

WHEREAS, the Principal is about to enter, or has entered, into a Contract in writing with the City for

a copy of which Contract is annexed to and hereby made a part of this bond as though herein set forth in full;

Performance Bond #1 (Pages 80 to 83): Use if the total contract price is \$5 Million Or Less. Performance Bond #1 has been approved by the U.S. Small Business Administration ("SBA") for participation in its Bond Guarantee Program.

PERFORMANCE BOND #1 (Page 1)

Bond #015042720

PERFORMANCE BOND #1

KNOW ALL PERSONS BY THESE PRESENTS, That we, _____

Galvin Bros., Inc./Madhue Contracting, Inc. a Joint Venture

149 Steamboat Rd.

Great Neck, NY 11024

hereinafter referred to as the "Principal", and _____

Liberty Mutual Insurance Company

1200 MacArthur Blvd.

Mahwah, NJ 07430

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

Four Million Five Hundred Thirteen Thousand One Hundred Thirty One and 00/100

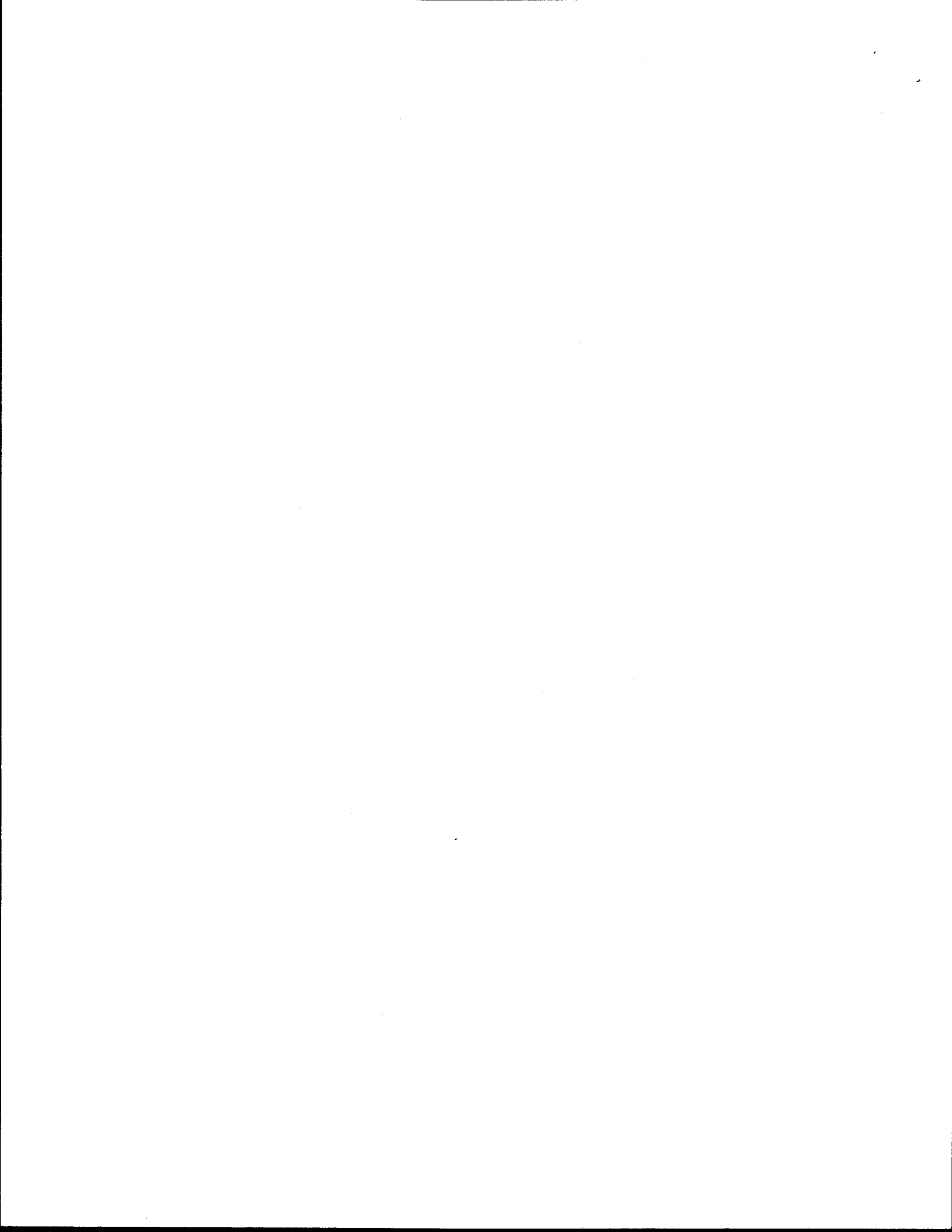
(\$ 4,513,131.00) Dollars, lawful money of the United States, for the payment of which said sum of money well and truly to be made, we, and each of us, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal is about to enter, or has entered, into a Contract in writing with the City for

FMS ID: PV272PATH - E-PIN: 85013B0102001 - DDC PIN: 8502013PV0020C

Construction of Garden-Wide Pedestrian Pathway System - Borough of Queens

a copy of which Contract is annexed to and hereby made a part of this bond as though herein set forth in full;



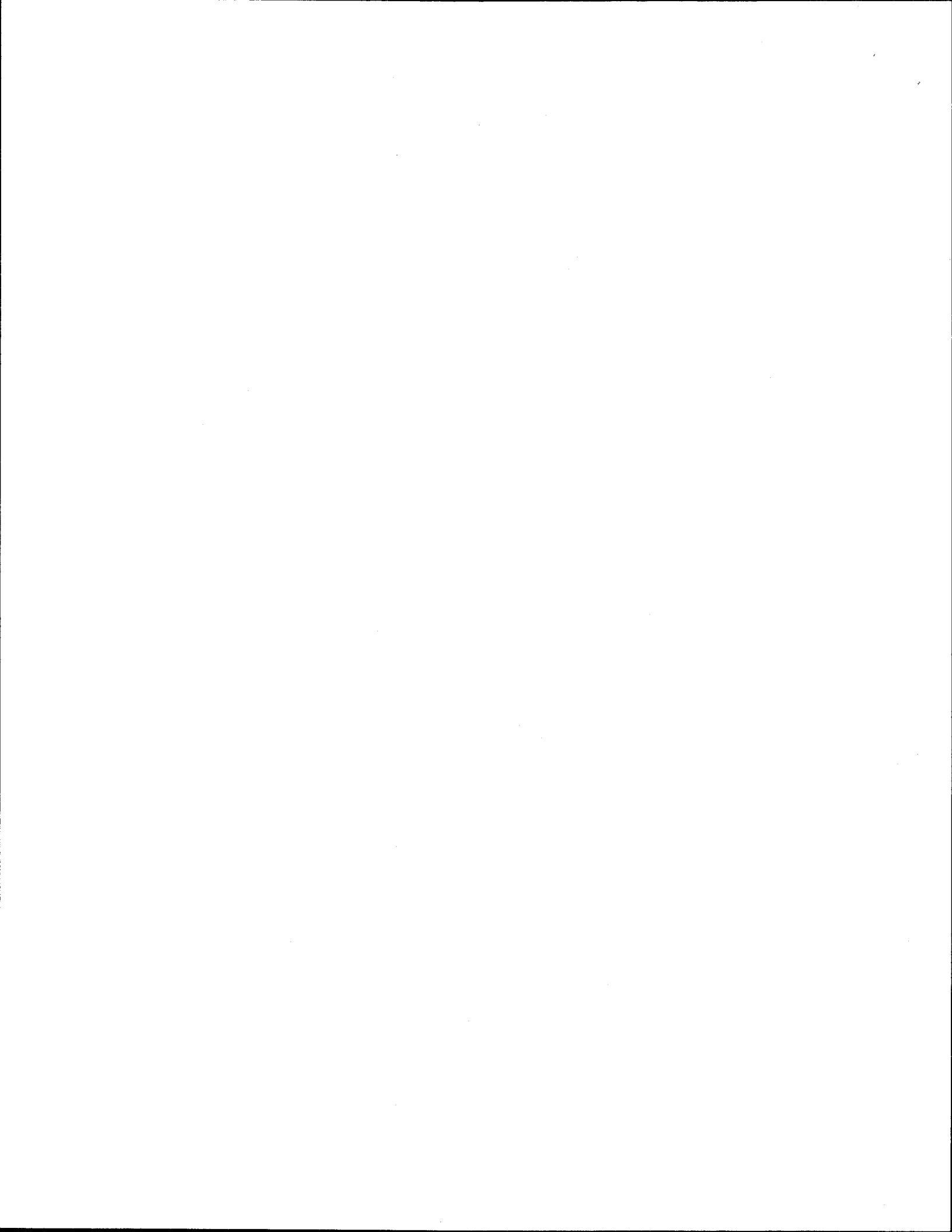
Performance Bond #1 (Pages 80 to 83): Use if the total contract price is \$5 Million Or Less. Performance Bond #1 has been approved by the U.S. Small Business Administration ("SBA") for participation in its Bond Guarantee Program.

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 80 to 83): 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 6th day of December, 2013.

(Seal) Galvin Bros., Inc./Madhue Contracting, Inc. a Joint Venture (L.S.)

Principal
By: Edward P. Galvin
EDWARD P. GALVIN, GENERAL PARTNER

(Seal) Liberty Mutual Insurance Company

Surety
By: Robert W. O'Kane
Robert W. O'Kane, Attorney-In-Fact

(Seal) _____
Surety

By: _____

(Seal) _____
Surety

By: _____

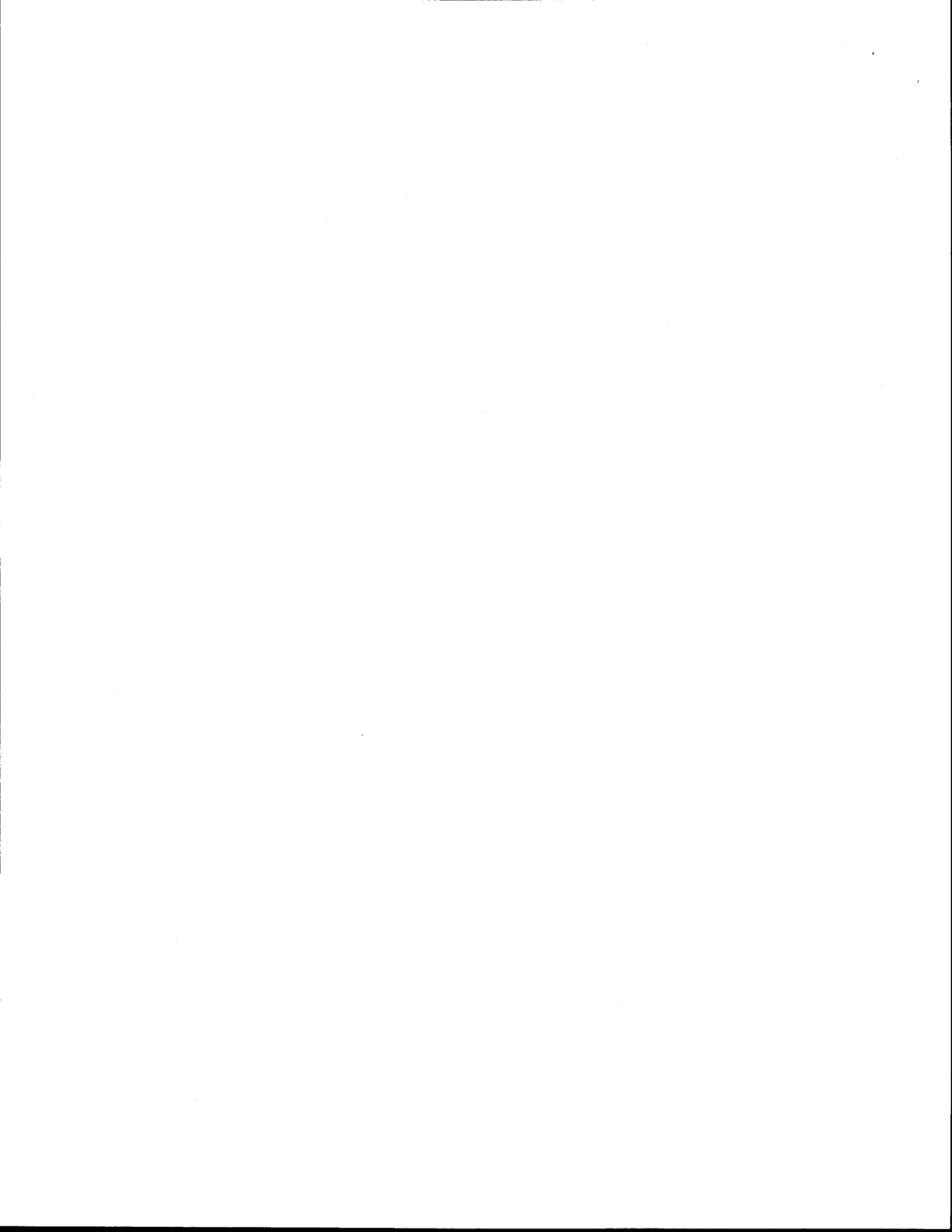
Bond Premium Rate _____

Bond Premium Cost _____

If the Contractor (Principal) is a partnership, the bond should be signed by each of the individuals who are partners.

If the Contractor (Principal) is a corporation, the bond should be signed in its correct corporate name by a duly authorized officer, agent, or attorney-in-fact.

There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Contract.



Performance Bond #1 (Pages 80 to 83): 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 NASSAU ss:

On this 6th day of December 2013 before me personally appeared EDWARD P. GALVIN to me known, and known to me to be one of the members of the firm of GALVIN BROS INC, MADHUE Contracting Inc 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.

Maureen T. Confortin
Notary Public or Commissioner of Deeds

MAUREEN T. CONFORTIN
Notary Public, State of New York
No. 01C04850066
Qualified in Suffolk County
Commission Expires January 2014

ACKNOWLEDGMENT OF PRINCIPAL, IF AN INDIVIDUAL

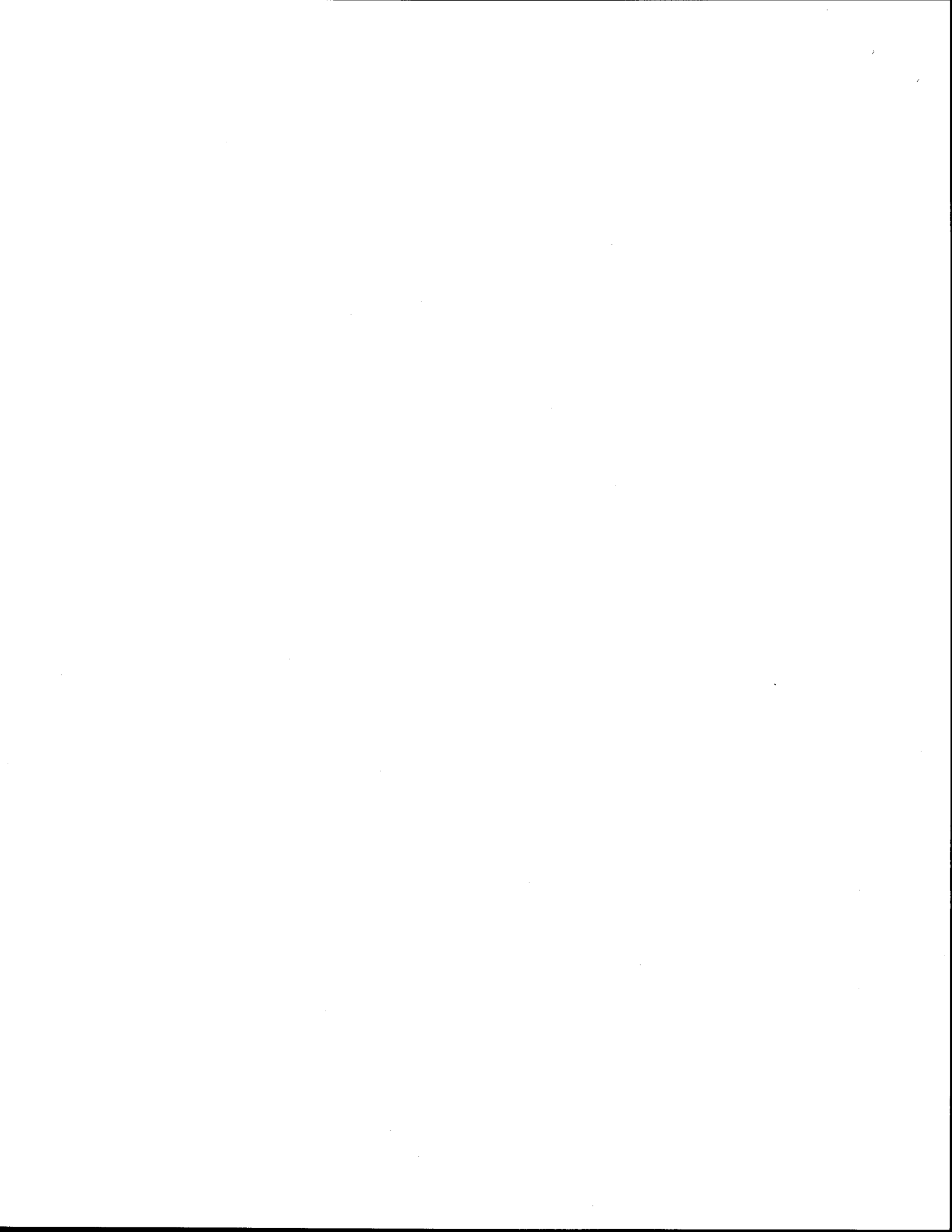
State of _____ County of _____ ss:

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



ACKNOWLEDGEMENT OF PRINCIPAL, OF A CORPORATION

STATE OF _____

ss:

COUNTY OF _____

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 the foregoing instrument is such seal; that it was an affixed by order of the board of directors of said corporation; and that he signed his name thereto by like order.

Notary Public

ACKNOWLEDGEMENT OF SURETY

STATE OF New York

ss:

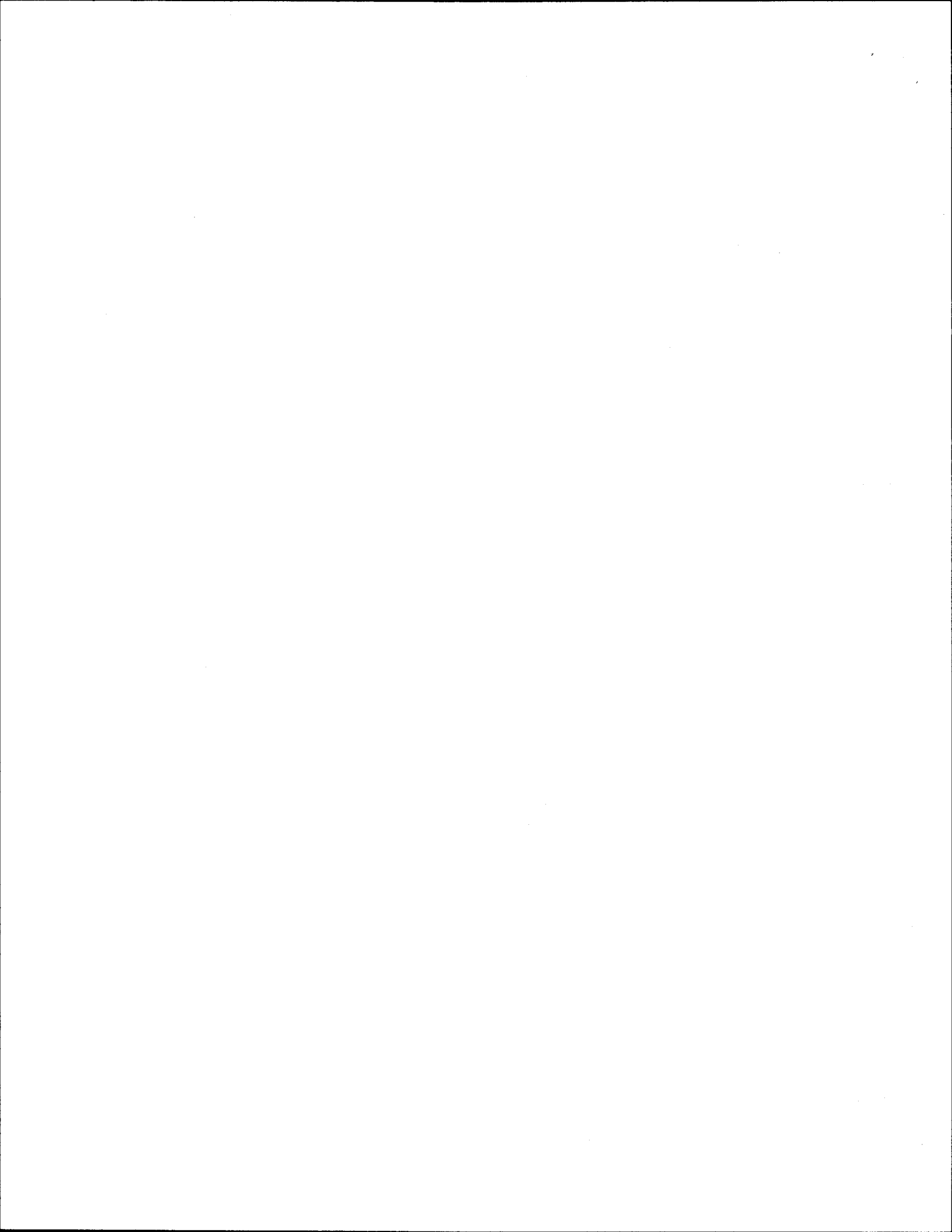
COUNTY OF Nassau

On this 6th day of December, 2013, before me personally came Robert W. O'Kane to me known, who, being by me duly sworn, did depose and say that he is an Attorney-In-Fact of Liberty Mutual Insurance Company the corporation described in and which executed the within instrument; that he knows the corporate seal of said corporation; that the seal affixed to the within instrument is such corporate seal, and that he signed and said instrument and affixed the said seal as Attorney-In-Fact by authority of the Board of Directors of said corporation and by authority of this office under the Standing Resolutions thereof.

LYNN ANN INFANTI
Notary Public, State of New York
No. 011N6004351
Qualified in Suffolk County 2014
Commission Expires March 23,

My commission expires _____

Notary Public



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. 6276016

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, Joseph Sforzo; Robert Kempner; Robert W. O'Kane; Susan P. Hammel

all of the city of Plainview 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 9th day of September, 2013.



American Fire and Casualty Company
The Ohio Casualty Insurance Company
Liberty Mutual Insurance Company
West American Insurance Company

By: Gregory W. Davenport
Gregory W. Davenport, Assistant Secretary

STATE OF WASHINGTON ss
COUNTY OF KING

On this 9th day of September, 2013, before me personally appeared Gregory W. Davenport, who acknowledged himself to be the Assistant Secretary of American Fire and Casualty Company, Liberty Mutual Insurance Company, The Ohio Casualty 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 Seattle, Washington, on the day and year first above written.



By: KD Riley
KD Riley, 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.

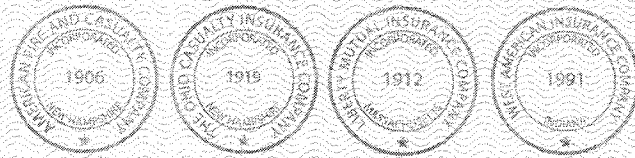
ARTICLE XIII – Execution of Contracts – SECTION 5. Surety Bonds and Undertakings. Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as 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 Gregory W. Davenport, 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, David M. Carey, 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 6th day of December, 2013.



By: David M. Carey
David M. Carey, 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.





LIBERTY MUTUAL INSURANCE COMPANY
 FINANCIAL STATEMENT — DECEMBER 31, 2012

Assets		Liabilities	
Cash and Bank Deposits	\$ 903,711,694	Unearned Premiums	\$4,205,141,671
*Bonds — U.S Government	1,166,929,471	Reserve for Claims and Claims Expense	17,056,420,207
*Other Bonds	11,415,194,219	Funds Held Under Reinsurance Treaties	1,315,062,091
*Stocks	8,104,853,899	Reserve for Dividends to Policyholders	2,455,411
Real Estate	255,967,320	Additional Statutory Reserve	49,768,998
Agents' Balances or Uncollected Premiums	3,482,069,753	Reserve for Commissions, Taxes and	
Accrued Interest and Rents	144,016,763	Other Liabilities	<u>3,066,051,537</u>
Other Admitted Assets	<u>14,732,623,458</u>	Total	\$25,694,899,915
Total Admitted Assets	<u>\$40,205,366,577</u>	Special Surplus Funds	\$604,621,497
		Capital Stock	10,000,000
		Paid in Surplus	7,899,471,886
		Unassigned Surplus	5,996,373,279
		Surplus to Policyholders	<u>14,510,466,662</u>
		Total Liabilities and Surplus	<u>\$40,205,366,577</u>



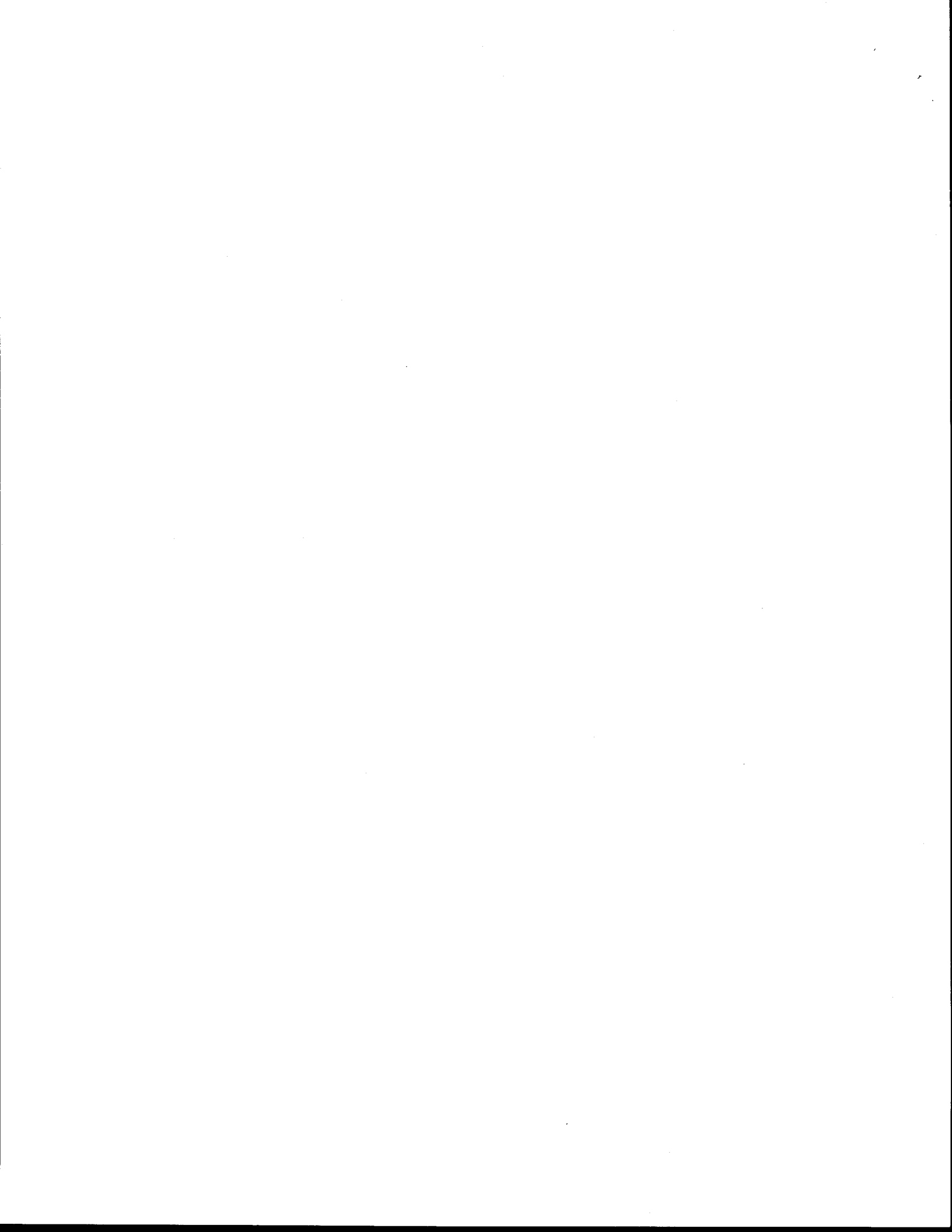
* Bonds are stated at amortized or investment value; Stocks at Association Market Values.
 The foregoing financial information is taken from Liberty Mutual Insurance Company's financial statement filed with the state of Massachusetts Department of Insurance.

I, TIM MIKOLAJEWSKI, Assistant Secretary of Liberty Mutual 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, 2012, 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 25th day of March, 2013.

TAMIKOLAJEWSKI

Assistant Secretary



Payment Bond (Pages 88 to 91): Use for any contract for which a Payment Bond is required.

PAYMENT BOND PAYMENT BOND (Page 1)
Bond #015042720

KNOW ALL PERSONS BY THESE PRESENTS, That we, _____

Galvin Bros., Inc./Madhue Contracting, Inc. a Joint Venture

149 Steamboat Rd.

Great Neck, NY 11024

hereinafter referred to as the "Principal", and _____

Liberty Mutual Insurance Company

1200 MacArthur Blvd.

Mahwah, NJ 07430

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

Four Million Five Hundred Thirteen Thousand One Hundred Thirty One and 00/100

(\$4,513,131.00) 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

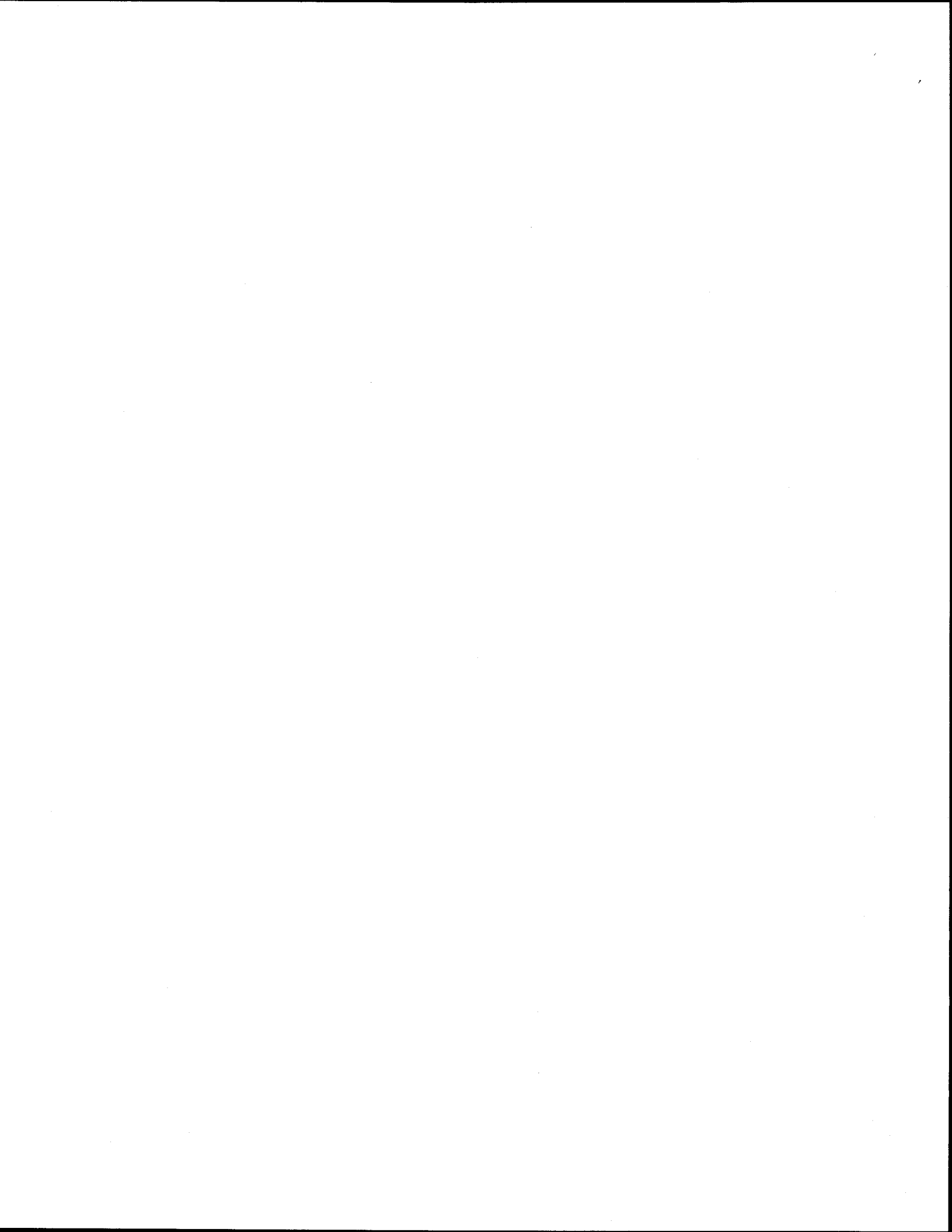
FMS ID: PV272PATH - E-PIN: 85013B0102001 - DDC PIN: 8502013PV0020C

Construction of Garden-Wide Pedestrian Pathway System - Borough of Queens

a copy of which Contract is annexed to and heroby 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 88 to 91): 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 88 to 91): 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 6th day of December, 2013

(Seal) Galvin Bros., Inc./Madhue Contracting, Inc. a Joint Venture (L.S.)

Principal
By: Edward F. Gawin
EDWARD F. GAWIN, General Partner

(Seal) Liberty Mutual Insurance Company

Surety
By: Robert W. O'Kane
Robert W. O'Kane, Attorney-In-Fact

(Seal) _____
Surety

By: _____

(Seal) _____
Surety

By: _____

(Seal) _____
Surety

By: _____

If the Contractor (Principal) is a partnership, the bond should be signed by each of the individuals who are partners.

If the Contractor (Principal) is a corporation, the bond should be signed in its correct corporate name by a duly authorized officer, agent, or attorney-in-fact.

There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Contract.



Payment Bond (Pages 88 to 91): 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 NASSAU ss:

On this 10th day of December, 2013 before me personally appeared EDWARD P. GALVIN to me known, and known to me to be one of the members of the firm of GALVIN BROS, INC / MADHUE CONTRACTING, INC, a joint venture 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.

Maureen T. Confortin
Notary Public or Commissioner of Deeds
MAUREEN T. CONFORTIN
Notary Public, State of New York
No. 01CO4850066
Qualified in Suffolk County
Commission Expires January 2016 2014

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



ACKNOWLEDGEMENT OF PRINCIPAL, OF 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 the foregoing instrument is such seal; that it was an affixed by order of the board of directors of said corporation; and that he signed his name thereto by like order.

Notary Public

ACKNOWLEDGEMENT OF SURETY

STATE OF New York

COUNTY OF Nassau

ss:

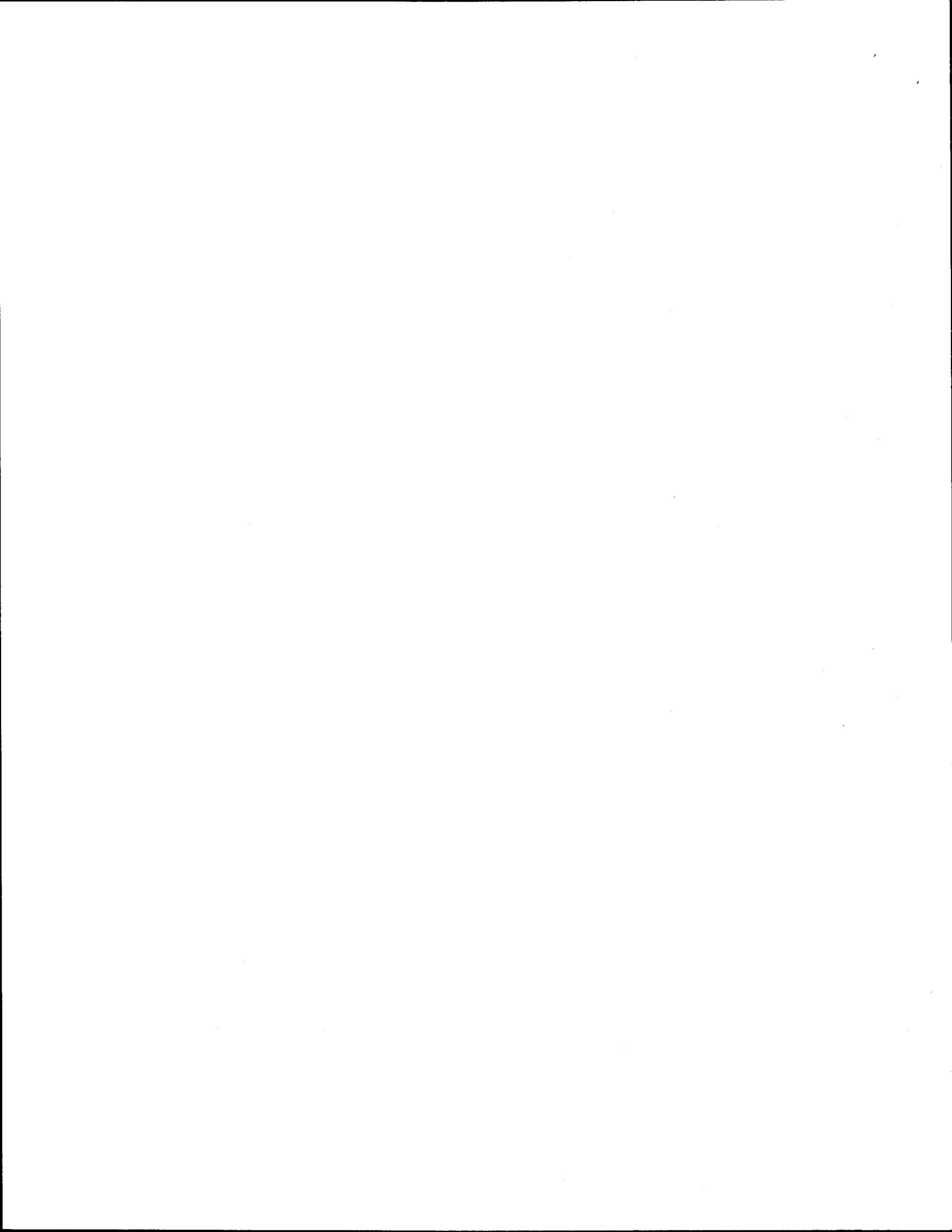
On this 6th day of December, 2013, before me personally came Robert W. O'Kane to me known, who, being by me duly sworn, did depose and say that he is an Attorney-In-Fact of Liberty Mutual Insurance Company the corporation described in and which executed the within instrument; that he knows the corporate seal of said corporation; that the seal affixed to the within instrument is such corporate seal, and that he signed and said instrument and affixed the said seal as Attorney-In-Fact by authority of the Board of Directors of said corporation and by authority of this office under the Standing Resolutions thereof.

LYNN ANN INFANTI
Notary Public, State of New York
No. 011N6004351
Qualified in Suffolk County 2014
Commission Expires March 23,

My commission expires _____



Notary Public



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. 6276015

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, Joseph Sforzo; Robert Kempner; Robert W. O'Kane; Susan P. Hammel

all of the city of Plainview 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 9th day of September, 2013



American Fire and Casualty Company
The Ohio Casualty Insurance Company
Liberty Mutual Insurance Company
West American Insurance Company

By: Gregory W. Davenport
Gregory W. Davenport, Assistant Secretary

STATE OF WASHINGTON ss
COUNTY OF KING

On this 9th day of September, 2013, before me personally appeared Gregory W. Davenport, who acknowledged himself to be the Assistant Secretary of American Fire and Casualty Company, Liberty Mutual Insurance Company, The Ohio Casualty 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 Seattle, Washington, on the day and year first above written.



By: KD Riley
KD Riley, 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 Gregory W. Davenport, 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, David M. Carey, 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 6th day of December, 20 13



By: David M. Carey
David M. Carey, 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.





LIBERTY MUTUAL INSURANCE COMPANY
FINANCIAL STATEMENT — DECEMBER 31, 2012

Assets		Liabilities	
Cash and Bank Deposits	\$ 903,711,694	Unearned Premiums	\$4,205,141,671
*Bonds — U.S Government	1,166,929,471	Reserve for Claims and Claims Expense	17,056,420,207
*Other Bonds	11,415,194,219	Funds Held Under Reinsurance Treaties	1,315,062,091
*Stocks	8,104,853,899	Reserve for Dividends to Policyholders	2,455,411
Real Estate	255,967,320	Additional Statutory Reserve	49,768,998
Agents' Balances or Uncollected Premiums	3,482,069,753	Reserve for Commissions, Taxes and	
Accrued Interest and Rents	144,016,763	Other Liabilities	<u>3,066,051,537</u>
Other Admitted Assets	<u>14,732,623,458</u>	Total	\$25,694,899,915
Total Admitted Assets	<u>\$40,205,366,577</u>	Special Surplus Funds	\$604,621,497
		Capital Stock	10,000,000
		Paid in Surplus	7,899,471,886
		Unassigned Surplus	5,996,373,279
		Surplus to Policyholders	<u>14,510,466,662</u>
		Total Liabilities and Surplus	<u>\$40,205,366,577</u>



* Bonds are stated at amortized or investment value; Stocks at Association Market Values.
The foregoing financial information is taken from Liberty Mutual Insurance Company's financial statement filed with the state of Massachusetts Department of Insurance.

I, TIM MIKOLAJEWSKI, Assistant Secretary of Liberty Mutual 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, 2012, 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 25th day of March, 2013.

T. Mikolajewski

Assistant Secretary



Performance Bond #1 (Pages 80 to 83): 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 80 to 83): 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 _____ day of _____, _____.

(Seal) _____ (L.S.)
Principal

By: _____

(Seal) _____
Surety

By: _____

(Seal) _____
Surety

By: _____

(Seal) _____
Surety

By: _____

Bond Premium Rate _____

Bond Premium Cost _____

If the Contractor (Principal) is a partnership, the bond should be signed by each of the individuals who are partners.

If the Contractor (Principal) is a corporation, the bond should be signed in its correct corporate name by a duly authorized officer, agent, or attorney-in-fact.

There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Contract.

Performance Bond #1 (Pages 80 to 83): 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 _____ 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 #2 (Pages 84 to 87): Use if the total contract price is more than \$5 Million.

PERFORMANCE BOND #2 (Page 1)

PERFORMANCE BOND #2

KNOW ALL PERSONS BY THESE PRESENTS, That we, _____

hereinafter referred to as the "Principal", and _____

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

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

WHEREAS, the Principal is about to enter, or has entered, into a Contract in writing with the City for

a copy of which Contract is annexed to and hereby made a part of this bond as though herein set forth in full;

Performance Bond #2 (Pages 84 to 87): Use if the total contract price is more than \$5 Million.

PERFORMANCE BOND #2 (Page2)

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 either (1) pay the full amount of the above penal sum in complete discharge and exoneration of this bond and of all the liabilities of the Surety relating to this bond, or (2) fully perform and complete the Work to be performed under the Contract, pursuant to the terms, conditions, and covenants thereof. The Surety (Sureties) further agrees, at its option, either to tender the penal sum or to commence and diligently perform the Work specified in the Contract, including physical site work, within twenty-five (25) business days after written notice thereof from the City and to complete all Work within the time set forth in the Contract or such other time as agreed to between the City and Surety in accordance with the Contract. The Surety and the City reserve all rights and defenses each may have against the other; provided, however, that the Surety expressly agrees that its reservation of rights shall not provide a basis for non-performance of its obligation to commence and to complete all Work as provided herein.

The Surety (Sureties), for value received, for itself and its successors and assigns, hereby stipulates and agrees that the obligation of said Surety (Sureties) and its bond shall be in no way impaired or affected by any extension of time, modification, omission, addition, or change in or to the said Contract or the Work to be performed thereunder, or by any payment thereunder before the time required therein, or by any waiver of any provisions thereof, or by any assignment, subletting or other transfer thereof or of any Work to be performed or any moneys due or to become due thereunder; and said Surety (Sureties) does hereby waive notice of any and all of such extensions, modifications, omissions, additions, changes, payments, waivers, assignments, subcontracts and transfers, and hereby expressly stipulates and agrees that any and all things done and omitted to be done by and in relation to assignees, subcontractors, and other transferees shall have the same effect as to said Surety (Sureties) as though done or omitted to be done by or in relation to said Principal.

Performance Bond #2 (Pages 84 to 87): Use if the total contract price is more than \$5 Million.

PERFORMANCE BOND #2 (Page 3)

IN WITNESS WHEREOF, the Principal and the Surety (Sureties) have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereunto affixed and these presents to be signed by their proper officers, this _____ day of _____, _____.

(Seal) _____ (L.S.)
Principal

By: _____

(Seal) _____
Surety

By: _____

(Seal) _____
Surety

By: _____

(Seal) _____
Surety

By: _____

(Seal) _____
Surety

By: _____

(Seal) _____
Surety

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 #2 (Pages 84 to 87): Use if the total contract price is more than \$5 Million.

PERFORMANCE BOND #2 (Page 4)

ACKNOWLEDGMENT OF PRINCIPAL, IF A CORPORATION

State of _____ County of _____ ss:

On this _____ day of _____, 20_____ before me personally came _____ to me known, who, being by me duly sworn did depose and say that he/she resides at _____; that he/she is the _____ of _____ the corporation described in and which executed the foregoing instrument; and that he signed his name to the foregoing instrument by order of the directors of said corporation as the duly authorized and binding act thereof.

Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT OF PRINCIPAL, IF A PARTNERSHIP

State of _____ County of _____ ss:

On this _____ day of _____, 20_____ before me personally came _____ to me known, who, being by me duly sworn did depose and say that he/she resides at _____; that he/she is _____ partner of _____, a limited/general partnership existing under the laws of the State of _____, the partnership described in and which executed the foregoing instrument; and that he/she signed his/her name to the foregoing instrument as the duly authorized and binding act of said partnership.

Notary Public or Commissioner of Deeds

ACKNOWLEDGMENT OF PRINCIPAL, IF AN INDIVIDUAL

State of _____ County of _____ ss:

On this _____ day of _____, 20_____ before me personally came _____ to me known, who, being by me duly sworn did depose and say that he/she resides at _____, and that he/she is the individual whose name is subscribed to the within instrument and acknowledged to me that by his/her signature on the instrument, said individual executed the instrument.

Notary Public or Commissioner of Deeds

Each executed bond should be accompanied by: (a) appropriate acknowledgments of the respective parties; (b) appropriate duly certified copy of Power of Attorney or other certificate of authority where bond is executed by agent, officer or other representative of Principal or Surety; (c) a duly certified extract from By-Laws or resolutions of Surety under which Power of Attorney or other certificate of authority of its agent, officer or representative was issued, and (d) certified copy of latest published financial statement of assets and liabilities of Surety.

* * * * *

Affix Acknowledgments and Justification of Sureties.

Payment Bond (Pages 88 to 91): 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, _____

hereinafter referred to as the "Principal", and _____

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

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

WHEREAS, the Principal is about to enter, or has entered, into a Contract in writing with the City for

a copy of which Contract is annexed to and hereby made a part of this bond as though herein set forth in full;

NOW, THEREFORE, the conditions of this obligation are such that if the Principal, his or its representatives or assigns 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 88 to 91): 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 88 to 91): Use for any contract for which a Payment Bond is required.

PAYMENT BOND (Page 3)

IN WITNESS HEREOF, the Principal and the Surety (Sureties) have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereunto affixed and these presents to be signed by their proper officers, this _____ day of _____, _____.

(Seal) _____ (L.S.)
Principal

By: _____

(Seal) _____
Surety

By: _____

(Seal) _____
Surety

By: _____

(Seal) _____
Surety

By: _____

(Seal) _____
Surety

By: _____

If the Contractor (Principal) is a partnership, the bond should be signed by each of the individuals who are partners.

If the Contractor (Principal) is a corporation, the bond should be signed in its correct corporate name by a duly authorized officer, agent, or attorney-in-fact.

There should be executed an appropriate number of counterparts of the bond corresponding to the number of counterparts of the Contract.

Payment Bond (Pages 88 to 91): 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 _____ 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

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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. 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.

Pursuant to Labor Law §220 (3) 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.

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: Wasyl 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

Prevailing Rate Schedule Information: The information below is intended to assist you in meeting your prevailing wage rate obligation.

Covered Workers: Any and all individuals who are engaged, employed or otherwise occupied as Workers, Laborers or Mechanics on the public work site.

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 1, 2013 THROUGH JUNE 30, 2013

List of Amended Classifications

1. BOILERMAKER
2. CEMENT MASON
3. DERRICKPERSON AND RIGGER
4. DRIVER: TRUCK (TEAMSTER)
5. ENGINEER - FIELD (BUILDING CONSTRUCTION)
6. ENGINEER - OPERATING
7. HEAT AND FROST INSULATOR
8. HOUSE WRECKER
9. IRON WORKER - ORNAMENTAL
10. IRON WORKER - STRUCTURAL
11. MASON TENDER
12. MASON TENDER (INTERIOR DEMOLITION WORKER)
13. MOSAIC MECHANIC
14. PAPERHANGER
15. PLASTERER
16. PLASTERER - TENDER
17. PLUMBER
18. PLUMBER (MECHANICAL EQUIPMENT AND SERVICE)
19. PLUMBER (RESIDENTIAL RATES FOR 1, 2 AND 3 FAMILY HOME CONSTRUCTION)
20. ROOFER

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

21. SHEET METAL WORKER

22. SIGN ERECTOR

23. STEAMFITTER

24. STEAMFITTER - REFRIGERATION AND AIR CONDITIONER

25. TILE FINISHER

26. TILE LAYER - SETTER

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§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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$35.10

Supplemental Benefit Rate per Hour: \$14.85

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)

BLASTER

Blaster

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$43.20

Supplemental Benefit Rate per Hour: \$37.29

Blaster (Hydraulic)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$43.95

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

Supplemental Benefit Rate per Hour: \$37.29

Blaster - Trac Drill Hydraulic

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$38.96

Supplemental Benefit Rate per Hour: \$37.29

Blaster - Wagon: Air Trac: Quarry Bar: Drillrunners

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$38.24

Supplemental Benefit Rate per Hour: \$37.29

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$37.29

Supplemental Benefit Rate per Hour: \$37.29

Blaster - Powder Carriers

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$33.73

Supplemental Benefit Rate per Hour: \$37.29

Blaster - Hydraulic Trac Drill Chuck Tender

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$32.57

Supplemental Benefit Rate per Hour: \$37.29

Blaster - Chuck Tender & Nipper

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$31.88

Supplemental Benefit Rate per Hour: \$37.29

Blaster - Magazine Keepers: (Watch Person)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$19.26

Supplemental Benefit Rate per Hour: \$37.29

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

Overtime Description

For Blaster - Magazine Keepers: (Watch Person) only - time and one half the regular rate for work after an 8 hour day, Saturday, Sunday and holidays listed below.

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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$47.98**

Supplemental Benefit Rate per Hour: **\$37.88**

Supplemental Note: The above rate applies to repair or maintenance and new construction; For time and one half overtime - \$56.36; For double overtime - \$74.86.

Effective Period: 1/1/2013 - 3/31/2013

Wage Rate per Hour: **\$49.47**

Supplemental Benefit Rate per Hour: **\$39.48**

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Supplemental Note: The above rate applies to repair or maintenance and new construction; For time and one half overtime - \$58.78; For double overtime - \$78.07.

Effective Period: 4/1/2013 - 6/30/2013

Wage Rate per Hour: \$49.47

Supplemental Benefit Rate per Hour: \$39.78

Supplemental Note: The above rate applies to repair or maintenance and new construction; For time and one half overtime - \$59.08; For double overtime - \$78.37.

Overtime Description

For Repair and Maintenance work:

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

For New Construction work:

Double time the regular rate after an 8 hour day.

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Columbus Day

Election Day

Veteran's Day

Thanksgiving Day

Christmas Day

Quadruple time the regular rate for work on the following holiday(s).

Labor Day

Paid Holidays

Good Friday

Day after Thanksgiving

Day before Christmas

Day before New Year's Day

Shift Rates

When shifts are required, the first shift shall work eight (8) hours at the regular straight-time hourly rate. The second shift shall work seven and one-half (7 ½) hours and receive eight hours at the regular straight time hourly rate plus twenty-five cents (\$0.25) per hour. The third shift shall work seven (7) hours and receive eight hours at the regular straight time hourly rate plus fifty cents (\$0.50) per hour. A thirty (30) minute lunch period shall not be considered as time worked. Work in excess of the above shall be paid overtime at the appropriate new construction work or repair work overtime wage and supplemental benefit hourly rate.

(Local #5)

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BRICKLAYER

Bricklayer

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$46.44**

Supplemental Benefit Rate per Hour: **\$27.53**

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$46.15**

Supplemental Benefit Rate per Hour: **\$38.50**

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.

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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
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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$46.74

Supplemental Benefit Rate per Hour: \$42.37

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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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 10:00 P.M. shall work eight and one half hours allowing for one half hour for lunch, but will be paid for 9 hours including benefits at the straight time rate for 8 hours.

(Carpenters District Council)

CEMENT & CONCRETE WORKER

Cement & Concrete Worker

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$38.98

Supplemental Benefit Rate per Hour: \$25.67

Supplemental Note: \$28.42 on Saturdays; \$31.17 on Sundays & Holidays

Overtime Description

Time and one half the regular rate after 7 hour day (time and one half the regular rate after an 8 hour day when working with Dockbuilders on pile cap forms and for work below street level to the top of the foundation wall, not to exceed 2 feet or 3 feet above the sidewalk-brick shelf, when working on the foundation and structure.)

Overtime

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Christmas Day

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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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$42.50**

Supplemental Benefit Rate per Hour: **\$39.06**

Supplemental Note: Overtime supplemental benefit rate per hour: **\$57.56**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$37.63**

Supplemental Benefit Rate per Hour: **\$39.06**

Supplemental Note: Overtime supplemental benefit rate per hour: **\$57.56**

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

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.

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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.

(Local #780)

CORE DRILLER

Core Driller

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$35.44**

Supplemental Benefit Rate per Hour: **\$19.75**

Core Driller Helper

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$28.60**

Supplemental Benefit Rate per Hour: **\$19.75**

Core Driller Helper(Third year in the industry)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$25.74**

Supplemental Benefit Rate per Hour: **\$19.75**

Core Driller Helper (Second year in the industry)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$22.88**

Supplemental Benefit Rate per Hour: **\$19.75**

Core Driller Helper (First year in the industry)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$20.02**

Supplemental Benefit Rate per Hour: **\$19.75**

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.

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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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$40.50**

Supplemental Benefit Rate per Hour: **\$42.07**

Supplemental Note: The above supplemental rate applies for work performed in Manhattan, Bronx, Brooklyn and Queens. \$43.49 - For work performed in Staten Island.

Effective Period: 1/1/2013 - 6/30/2013

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$30.00**

Supplemental Benefit Rate per Hour: **\$31.32**

Overtime Description

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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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$58.95

Supplemental Benefit Rate per Hour: \$42.37

Diver Tender (Marine)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$42.10

Supplemental Benefit Rate per Hour: \$42.37

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).

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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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$46.74

Supplemental Benefit Rate per Hour: \$42.37

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

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None

Shift Rates

Off shift work, commencing between 5:00 P.M. and 10:00 P.M., shall work eight and one half hours allowing for one half hour for lunch but will be paid the straight time hourly wage for 9 hours and the straight time supplemental benefits for 8 hours.

(Carpenters District Council)

DRIVER: TRUCK (TEAMSTER)

Driver - Automobile Chauffeur (Dump Truck)

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$35.84**

Supplemental Benefit Rate per Hour: **\$36.93**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$37.01**

Supplemental Benefit Rate per Hour: **\$38.65**

Driver - Heavy Equipment Trailer Driver

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$37.34**

Supplemental Benefit Rate per Hour: **\$36.93**

Note: For time and one half overtime Wage Rate - \$53.76; for double time overtime Wage Rate - \$71.68

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$38.51**

Supplemental Benefit Rate per Hour: **\$38.65**

Note: For time and one half overtime Wage Rate - \$55.51; for double time overtime Wage Rate - \$74.01

Driver - Euclid & Turnapull Operator

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$36.41**

Supplemental Benefit Rate per Hour: **\$36.93**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$37.57**

Supplemental Benefit Rate per Hour: **\$38.65**

Driver - Six Wheeler(3 Axle) Tractors & Trailers

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Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$36.84

Supplemental Benefit Rate per Hour: \$36.93

Note: For time and one half overtime Wage Rate - \$54.62; for double time overtime Wage Rate - \$72.82

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$38.01

Supplemental Benefit Rate per Hour: \$38.65

Note: For time and one half overtime Wage Rate - \$56.36; for double time overtime Wage Rate - \$75.14

Driver - Boom Truck

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$37.09

Supplemental Benefit Rate per Hour: \$36.93

Note: For time and one half overtime Wage Rate - \$54.62; for double time overtime Wage Rate - \$72.82

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$38.26

Supplemental Benefit Rate per Hour: \$38.65

Note: For time and one half overtime Wage Rate - \$56.36; for double time overtime Wage Rate - \$75.14

Overtime Description

For Paid Holidays: Holiday pay for all holidays shall be prorated based two hours per day for each day worked in the holiday week, not to exceed 8 hours of holiday pay. For Thanksgiving week, the prorated share shall be 5 1/3 hours of holiday pay for each day worked in Thanksgiving week.

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

President's Day

Columbus Day

Veteran's Day

Day after Thanksgiving

Triple time the regular rate for work on the following holiday(s).

New Year's Day

Memorial Day

Independence Day

Labor Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

New Year's Day

President's Day

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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: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$37.47
Supplemental Benefit Rate per Hour: \$38.65

Overtime Description

For Paid Holidays: Employees working two (2) days in the calendar week in which the holiday falls are to be paid for these holidays, provided they shape each remaining workday during that calendar week.

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

President's Day
Columbus Day
Veteran's Day

Triple time the regular rate for work on the following holiday(s).

New Year's Day
Memorial Day
Independence Day
Labor Day
Thanksgiving Day
Christmas Day

Paid Holidays

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Day after Thanksgiving
Christmas Day

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(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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$51.00

Supplemental Benefit Rate per Hour: \$42.45

Electrician "A" (Regular Day Overtime)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$76.50

Supplemental Benefit Rate per Hour: \$45.13

Electrician "A" (Day Shift)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$51.00

Supplemental Benefit Rate per Hour: \$42.45

Electrician "A" (Day Shift Overtime After 8 hours)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$76.50

Supplemental Benefit Rate per Hour: \$45.13

Electrician "A" (Swing Shift)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$59.84

Supplemental Benefit Rate per Hour: \$48.20

Electrician "A" (Swing Shift Overtime After 7.5 hours)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$89.76

Supplemental Benefit Rate per Hour: \$51.36

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Electrician "A" (Graveyard Shift)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$67.03
Supplemental Benefit Rate per Hour: \$53.07

Electrician "A" (Graveyard Shift Overtime After 7 hours)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$100.55
Supplemental Benefit Rate per Hour: \$56.60

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.

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,

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maintain and repair all kinds of lighting fixtures and local lighting controls and washing and cleaning of foregoing fixtures.

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$25.30

Supplemental Benefit Rate per Hour: \$17.52

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$37.95

Supplemental Benefit Rate per Hour: \$18.85

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

(Local #3)

ELECTRICIAN - ALARM TECHNICIAN

(Scope of Work - Inspect, test, repair, and replace defective, malfunctioning, or broken devices, components and controls of Fire, Burglar and Security Systems)

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Alarm Technician

Effective Period: 7/1/2012 - 3/9/2013

Wage Rate per Hour: **\$29.90**

Supplemental Benefit Rate per Hour: **\$13.70**

Supplemental Note: **\$12.20** only after 8 hours worked in a day

Effective Period: 3/10/2013 - 6/30/2013

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

Plus one Personal Day per year

Sick Days:

One day per Year

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(Local #3)

ELECTRICIAN-STREET LIGHTING WORKER

Electrician - Electro Pole Electrician

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$51.00

Supplemental Benefit Rate per Hour: \$44.18

Electrician - Electro Pole Foundation Installer

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$38.66

Supplemental Benefit Rate per Hour: \$34.12

Electrician - Electro Pole Maintainer

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$33.10

Supplemental Benefit Rate per Hour: \$30.84

Overtime Description

Electrician - Electro Pole Electrician: Time and one half the regular rate after a 7 hour day and after 5 consecutive days worked per week.

Electrician - Electro Pole Foundation Installer: Time and one half the regular rate after 8 hours within a 24 hour period and Saturday and Sunday.

Electrician - Electro Pole Maintainer: Time and one half the regular rate after a 7 hour day and after 5 consecutive days worked per week. Saturdays and Sundays may be used as a make-up day at straight time when a day is lost during the week to inclement weather.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

Martin Luther King Jr. Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

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(Local #3)

ELEVATOR CONSTRUCTOR

Elevator Constructor

Effective Period: 7/1/2012 - 3/16/2013

Wage Rate per Hour: \$55.20

Supplemental Benefit Rate per Hour: \$32.78

Effective Period: 3/17/2013 - 6/30/2013

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

Employer contributes 8% of regular basic hourly rate as vacation pay for employees with more than 15 years of service, and 6% for employees with 5 to 15 years of service, and 4% for employees with less than 5 years of service.

(Local #1)

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ELEVATOR REPAIR & MAINTENANCE

Elevator Service/Modernization Mechanic

Effective Period: 7/1/2012 - 3/16/2013

Wage Rate per Hour: \$43.79

Supplemental Benefit Rate per Hour: \$31.37

Effective Period: 3/17/2013 - 6/30/2013

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

Engineer - Heavy Construction Operating Engineer I

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

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$58.75**

Supplemental Benefit Rate per Hour: **\$31.07**

Supplemental Note: \$55.74 on overtime

Shift Wage Rate: **\$94.00**

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$57.00**

Supplemental Benefit Rate per Hour: **\$31.07**

Supplemental Note: \$55.74 on overtime

Shift Wage Rate: **\$91.20**

Engineer - Heavy Construction Maintenance Engineer I

Installing, Repairing, Maintaining, Dismantling and Manning of all equipment including Steel Cutting, Bending and Heat Sealing Machines, Mechanical Heaters, Grout Pumps, Bentonite Pumps & Plants, Screening Machines, Fusion Coupling Machines, Tunnel Boring Machines Moles and Machines of a similar nature, Power Packs, Mechanical Hydraulic Jacks; all drill rigs including but not limited to Churn, Rotary Caisson, Raised Bore & Drills of a similar nature; Personnel, Inspection & Safety Boats or any boats used to perform functions of same, Mine Hoists, Whirlies, all Climbing Cranes, all Tower Cranes, including but not limited to Truck Mounted and Crawler Type and machines of similar nature; Maintaining Hydraulic Drills and machines of a similar nature; Well Point System-Installation and dismantling; Burning, Welding, all Pumps regardless of size and/or motor power, except River Cofferdam Pumps and Wells Point Pumps; Motorized Buggies (three or more); equipment used in the cleaning and televising of sewers, but not limited to jet-rodder/vacuum truck, vacall/vactor, closed circuit television inspection equipment; high powered water pumps, jet pumps; screed machines and concrete finishing machines of a similar nature; vermeers.

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$56.74**

Supplemental Benefit Rate per Hour: **\$31.07**

Supplemental Note: \$55.74 on overtime

Shift Wage Rate: **\$90.78**

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

Engineer - Heavy Construction Maintenance Engineer II

On Base Mounted Tower Cranes

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$74.44

Supplemental Benefit Rate per Hour: \$31.07

Supplemental Note: \$55.74 on overtime

Shift Wage Rate: \$119.10

Engineer - Heavy Construction Maintenance Engineer III

On Generators, Light Towers

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$37.56

Supplemental Benefit Rate per Hour: \$31.07

Supplemental Note: \$55.74 on overtime

Shift Wage Rate: \$60.10

Engineer - Heavy Construction Maintenance Engineer IV

On Pumps and Mixers including mud sucking

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$38.53

Supplemental Benefit Rate per Hour: \$31.07

Supplemental Note: \$55.74 on overtime

Shift Wage Rate: \$61.65

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$54.09

Supplemental Benefit Rate per Hour: \$31.07

Supplemental Note: \$55.74 on overtime

Shift Wage Rate: \$86.54

Engineer - Heavy Construction Oilers I

Gradalls, Cold Planer Grader, Concrete Pumps, Driving Truck Cranes, Driving and Operating Fuel and Grease Trucks.

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$51.19

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

Supplemental Benefit Rate per Hour: **\$31.07**
Supplemental Note: \$55.74 on overtime
Shift Wage Rate: **\$81.90**

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: 7/1/2012 - 6/30/2013
Wage Rate per Hour: **\$35.50**
Supplemental Benefit Rate per Hour: **\$31.07**
Supplemental Note: \$55.74 on overtime
Shift Wage Rate: **\$56.80**

Engineer - Steel Erection Maintenance Engineers

Derrick, Travelers, Tower, Crawler Tower and Climbing Cranes

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: **\$54.33**
Supplemental Benefit Rate per Hour: **\$29.66**
Supplemental Note: \$53.17 on overtime
Shift Wage Rate: **\$86.93**

Engineer - Steel Erection Oiler I

On a Truck Crane

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: **\$50.91**
Supplemental Benefit Rate per Hour: **\$29.66**
Supplemental Note: \$53.17 on overtime
Shift Wage Rate: **\$81.46**

Engineer - Steel Erection Oiler II

On a Crawler Crane

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: **\$39.04**
Supplemental Benefit Rate per Hour: **\$29.66**
Supplemental Note: \$53.17 on overtime
Shift Wage Rate: **\$62.46**

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.

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.
- 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

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$51.62

Supplemental Benefit Rate per Hour: \$29.66

Supplemental Note: \$53.17 on overtime

Engineer - Building Work Maintenance Engineers II

On Pumps, Generators, Mixers and Heaters

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$40.34

Supplemental Benefit Rate per Hour: \$29.66

Supplemental Note: \$53.17 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

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

Cranes: Driving and Operating Fuel and Grease Trucks, Cherrypickers (hydraulic cranes) over 70,000 GVW, and machines of a similar nature.

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$49.12**

Supplemental Benefit Rate per Hour: **\$29.66**

Supplemental Note: \$53.17 on overtime

Engineer - Building Work Oilers II

Oilers on Crawler Cranes, Backhoes, Trenching Machines, Gunite Machines, Compressors (three or more in Battery).

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$36.75**

Supplemental Benefit Rate per Hour: **\$29.66**

Supplemental Note: \$53.17 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)

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

ENGINEER - CITY SURVEYOR AND CONSULTANT

Party Chief

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$34.61
Supplemental Benefit Rate per Hour: \$17.30

Instrument Person

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$28.59
Supplemental Benefit Rate per Hour: \$17.30

Rodperson

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$24.79
Supplemental Benefit Rate per Hour: \$17.30

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.)

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

Field Engineer - BC Party Chief

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$53.64

Supplemental Benefit Rate per Hour: \$26.95

Supplemental Note: Overtime Benefit Rate - \$37.48 per hour (time & one half) \$48.00 per hour (double time).

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$55.74

Supplemental Benefit Rate per Hour: \$29.73

Supplemental Note: Overtime Benefit Rate - \$41.40 per hour (time & one half) \$53.06 per hour (double time).

Field Engineer - BC Instrument Person

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$41.94

Supplemental Benefit Rate per Hour: \$26.95

Supplemental Note: Overtime Benefit Rate - \$37.48 per hour (time & one half) \$48.00 per hour (double time).

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$43.30

Supplemental Benefit Rate per Hour: \$29.73

Supplemental Note: Overtime Benefit Rate - \$41.40 per hour (time & one half) \$53.06 per hour (double time).

Field Engineer - BC Rodperson

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$27.52

Supplemental Benefit Rate per Hour: \$26.95

Supplemental Note: Overtime Benefit Rate - \$37.48 per hour (time & one half) \$48.00 per hour (double time).

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$27.97

Supplemental Benefit Rate per Hour: \$29.73

Supplemental Note: Overtime Benefit Rate - \$41.40 per hour (time & one half) \$53.06 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

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

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$60.28

Supplemental Benefit Rate per Hour: \$29.73

Supplemental Note: Overtime benefit rate - \$41.40 per hour (time & one half), \$53.06 per hour (double time).

Field Engineer - HC Instrument Person

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$44.28

Supplemental Benefit Rate per Hour: \$29.73

Supplemental Note: Overtime benefit rate - \$41.40 per hour (time & one half), \$53.06 per hour (double time).

Field Engineer - HC Rodperson

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$37.11

Supplemental Benefit Rate per Hour: \$29.73

Supplemental Note: Overtime benefit rate - \$41.40 per hour (time & one half), \$53.06 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

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

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$54.50**

Supplemental Benefit Rate per Hour: **\$26.95**

Supplemental Note: Overtime benefit rate - \$37.48 per hour (time & one half), \$48.00 per hour (double time).

Field Engineer - Steel Erection Instrument Person

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$42.63**

Supplemental Benefit Rate per Hour: **\$26.95**

Supplemental Note: Overtime benefit rate - \$37.48 per hour (time & one half), \$48.00 per hour (double time).

Field Engineer - Steel Erection Rodperson

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$28.84**

Supplemental Benefit Rate per Hour: **\$26.95**

Supplemental Note: Overtime benefit rate - \$37.48 per hour (time & one half), \$48.00 per hour (double time).

Overtime Description

Time and one half the regular rate for Saturday for the first eight hours worked.

Double time the regular rate for Saturday for work performed in excess of eight hours.

Overtime

Time and one half the regular rate after an 8 hour day.

Double time the regular rate for Sunday.

Double time the regular rate for work on the following holiday(s).

Paid Holidays

New Year's Day

Lincoln's Birthday

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

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

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$64.38

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Shift Wage Rate: \$103.01

Operating Engineer - Road & Heavy Construction II

Backhoes, Power Shovels, Hydraulic Clam Shells, Steel Erection, Moles and machines of a similar nature.

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$66.70

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: 51.85 overtime hours

Shift Wage Rate: \$106.72

Operating Engineer - Road & Heavy Construction III

Mine Hoists, Cranes, etc. (Used as Mine Hoists)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$68.86

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Shift Wage Rate: \$110.18

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$67.21

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Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$107.54

Operating Engineer - Road & Heavy Construction V

Pile Drivers & Rigs (employing Dock Builder foreperson): Derrick Boats, Tunnel Shovels.

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$65.86
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$105.38

Operating Engineer - Road & Heavy Construction VI

Mixers (Concrete with loading attachment), Concrete Pavers, Cableways, Land Derricks, Power Houses (Low Air Pressure Units).

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$62.51
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$100.02

Operating Engineer - Road & Heavy Construction VII

Barrier Movers , Barrier Transport and Machines of a Similar Nature.

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$50.27
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$80.43

Operating Engineer - Road & Heavy Construction VIII

Utility Compressors

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$36.37
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$46.38

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$38.78
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours

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§220 PREVAILING WAGE SCHEDULE

Shift Wage Rate: \$49.16

Operating Engineer - Road & Heavy Construction IX

Horizontal Boring Rig

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$56.24

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Shift Wage Rate: \$89.98

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$59.39

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Shift Wage Rate: \$95.02

Operating Engineer - Road & Heavy Construction X

Elevators (manually operated as personnel hoist).

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$54.50

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Shift Wage Rate: \$87.20

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$42.11

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Shift Wage Rate: \$67.38

Operating Engineer - Road & Heavy Construction XII

All Drills and Machines of a similar nature.

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$63.18

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Shift Wage Rate: \$101.09

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Operating Engineer - Road & Heavy Construction XIII

Concrete Pumps, Concrete Plant, Well Drilling Machines, Stone Crushers, Double Drum Hoist, Power Houses (other than above).

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$61.14

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Shift Wage Rate: \$97.82

Operating Engineer - Road & Heavy Construction XIV

Concrete Mixer

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$58.34

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Shift Wage Rate: \$93.49

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$39.03

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Shift Wage Rate: \$62.45

Operating Engineer - Road & Heavy Construction XVI

Concrete Breaking Machines, Single Drum Hoists, Locomotives (over ten tons) and Dinkies over ten tons, Hydraulic Crane-Second Engineer.

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$55.73

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Shift Wage Rate: \$89.17

Operating Engineer - Road & Heavy Construction XVII

On-Site concrete plant engineer, On-site Asphalt Plant Engineer, and Vibratory console.

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Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$56.19
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$89.90

Operating Engineer - Road & Heavy Construction XVIII

Tower Crane

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$81.09
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$129.74

Operating Engineer - Paving I

Asphalt Spreaders, Autogrades (C.M.I.), Roto/Mil

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$59.25
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$94.80

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$62.51
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$100.02

Operating Engineer - Paving II

Asphalt Roller

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$57.65
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$92.24

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$60.85
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$97.36

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§220 PREVAILING WAGE SCHEDULE

Operating Engineer - Paving III

Asphalt Plants

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$48.46

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Shift Wage Rate: \$77.54

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$51.32

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Shift Wage Rate: \$82.11

Operating Engineer - Concrete I

Cranes

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$63.49

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Operating Engineer - Concrete II

Compressors

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$36.91

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Operating Engineer - Concrete III

Micro-traps (Negative Air Machines), Vac-All Remediation System.

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$50.31

Supplemental Benefit Rate per Hour: \$28.65

Supplemental Note: \$51.85 overtime hours

Operating Engineer - Steel Erection I

Three Drum Derricks

Effective Period: 7/1/2012 - 12/31/2012

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Wage Rate per Hour: \$67.62
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$108.19

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$70.50
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$112.80

Operating Engineer - Steel Erection II

Cranes, 2 Drum Derricks, Hydraulic Cranes and Fork Lifts.

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$64.91
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$103.86

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$67.71
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$108.34

Operating Engineer - Steel Erection III

Compressors, Welding Machines.

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$37.87
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$60.59

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$39.86
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: \$63.78

Operating Engineer - Steel Erection IV

Compressors - Not Combined with Welding Machine.

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$36.00

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§220 PREVAILING WAGE SCHEDULE

Supplemental Benefit Rate per Hour: **\$28.65**
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: **\$57.60**

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: **\$37.93**
Supplemental Benefit Rate per Hour: **\$28.65**
Supplemental Note: \$51.85 overtime hours
Shift Wage Rate: **\$60.69**

Operating Engineer - Building Work I

Forklifts, House Cars, Rack and Pinion, Plaster (Platform machine), Plaster Bucket, Concrete Pump and all other equipment used for hoisting material.

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: **\$53.09**
Supplemental Benefit Rate per Hour: **\$28.65**
Supplemental Note: \$51.85 overtime hours

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: **\$55.46**
Supplemental Benefit Rate per Hour: **\$28.65**
Supplemental Note: \$51.85 overtime hours

Operating Engineer - Building Work II

Compressors, Welding Machines (Cutting Concrete-Tank Work), Paint Spraying, Sandblasting, Pumps (with the exclusion of Concrete Pumps), House Car (settlement basis only), All Engines irrespective of Power (Power-Pac) used to drive Auxiliary Equipment, Air, Hydraulic, etc.

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: **\$39.35**
Supplemental Benefit Rate per Hour: **\$28.65**
Supplemental Note: \$51.85 overtime hours

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: **\$41.32**
Supplemental Benefit Rate per Hour: **\$28.65**
Supplemental Note: \$51.85 overtime hours

Operating Engineer - Building Work III

Double Drum

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: **\$60.66**
Supplemental Benefit Rate per Hour: **\$28.65**
Supplemental Note: \$51.85 overtime hours

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\$220 PREVAILING WAGE SCHEDULE

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$63.25
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours

Operating Engineer - Building Work IV

Stone Derrick, Cranes, Hydraulic Cranes Boom Trucks.

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$64.35
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$67.05
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours

Operating Engineer - Building Work V

Dismantling and Erection of Cranes, Relief Engineer.

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$59.17
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$61.72
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours

Operating Engineer - Building Work VI

4 Pole Hoist, Single Drum Hoists.

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$58.53
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$61.06
Supplemental Benefit Rate per Hour: \$28.65
Supplemental Note: \$51.85 overtime hours

Overtime Description

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§220 PREVAILING WAGE SCHEDULE

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
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

Shifts may be worked at the single time rate at other than the regular working hours (8:00 A.M. to 4:30 P.M.) on the following work ONLY: Heavy construction jobs on work below the street level, over railroad tracks and on building jobs.

(Operating Engineer Local #14)

FLOOR COVERER

(Interior vinyl composition tile, sheath vinyl linoleum and wood parquet tile including site preparation and synthetic turf not including site preparation)

Floor Coverer

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$46.15
Supplemental Benefit Rate per Hour: \$38.50

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

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

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

- New Year's Day
- 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: 7/1/2012 - 10/31/2012

Wage Rate per Hour: **\$40.00**

Supplemental Benefit Rate per Hour: **\$32.89**

Supplemental Note: Supplemental Benefit Overtime Rate: **\$40.54**

Effective Period: 11/1/2012 - 6/30/2013

Wage Rate per Hour: **\$40.50**

Supplemental Benefit Rate per Hour: **\$33.24**

Supplemental Note: Supplemental Benefit Overtime Rate: **\$41.24**

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.

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

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)

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: 7/1/2012 - 4/30/2013

Wage Rate per Hour: \$23.40

Supplemental Benefit Rate per Hour: \$18.04

Effective Period: 5/1/2013 - 6/30/2013

Wage Rate per Hour: \$23.50

Supplemental Benefit Rate per Hour: \$18.54

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

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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$54.28**

Supplemental Benefit Rate per Hour: **\$31.36**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$55.98**

Supplemental Benefit Rate per Hour: **\$32.36**

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

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

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.

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$33.00**

Supplemental Benefit Rate per Hour: **\$24.15**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$33.51**

Supplemental Benefit Rate per Hour: **\$24.64**

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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$23.05**

Supplemental Benefit Rate per Hour: **\$17.85**

Effective Period: 1/1/2013 - 6/30/2013

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

Wage Rate per Hour: \$23.25

Supplemental Benefit Rate per Hour: \$18.35

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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$41.50

Supplemental Benefit Rate per Hour: \$39.52

Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$42.00

Supplemental Benefit Rate per Hour: \$42.89

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

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

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day
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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$45.05

Supplemental Benefit Rate per Hour: \$57.85

Supplemental Note: Supplemental benefits are to be paid at the applicable overtime rate when overtime is in effect.

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$46.00

Supplemental Benefit Rate per Hour: \$61.23

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.

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

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

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$38.70**

Supplemental Benefit Rate per Hour: **\$31.75**

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

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

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: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$24.25
Supplemental Benefit Rate per Hour: \$12.30

Landscaper (3 - 6 years experience)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$23.25
Supplemental Benefit Rate per Hour: \$12.30

Landscaper (up to 3 years experience)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$20.75
Supplemental Benefit Rate per Hour: \$12.30

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

Groundperson

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$20.75

Supplemental Benefit Rate per Hour: \$12.30

Tree Remover / Pruner

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$29.25

Supplemental Benefit Rate per Hour: \$12.30

Landscaper Sprayer (Pesticide Applicator)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$19.25

Supplemental Benefit Rate per Hour: \$12.30

Watering - Plant Maintainer

Effective Period: 7/1/2012 - 6/30/2013

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

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$49.19**

Supplemental Benefit Rate per Hour: **\$32.24**

Marble Finisher

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$39.05**

Supplemental Benefit Rate per Hour: **\$31.43**

Marble Polisher

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$34.73**

Supplemental Benefit Rate per Hour: **\$24.60**

Overtime Description

Supplemental Benefit contributions are to be made at the applicable overtime rates. Time and one half the regular rate after a 7 hour day or time and one half the regular rate after an 8 hour day - chosen by Employer at the start of the project and then would last for the full duration of the project.

Overtime

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Good Friday

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

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

(Local #7)

MASON TENDER

Mason Tender

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$34.24**

Supplemental Benefit Rate per Hour: **\$24.40**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$34.50**

Supplemental Benefit Rate per Hour: **\$25.14**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

The Employer may work two (2) shifts with the first shift at the straight time wage rate and the second shift receiving eight (8) hours paid for seven (7) hours work at the straight time wage rate.

(Local #79)

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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$33.87**

Supplemental Benefit Rate per Hour: **\$19.22**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$34.07**

Supplemental Benefit Rate per Hour: **\$19.77**

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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$23.07**

Supplemental Benefit Rate per Hour: **\$13.53**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$23.27**

Supplemental Benefit Rate per Hour: **\$14.08**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

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

(Local #79)

METALLIC LATHER

Metallic Lather

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$41.23

Supplemental Benefit Rate per Hour: \$38.35

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.

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 (1/2) 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)

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

MILLWRIGHT

Millwright

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$46.19

Supplemental Benefit Rate per Hour: \$45.67

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.

(Local #740)

MOSAIC MECHANIC

Mosaic Mechanic - Mosaic & Terrazzo Mechanic

Effective Period: 7/1/2012 - 12/31/2012

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

Wage Rate per Hour: **\$43.93**

Supplemental Benefit Rate per Hour: **\$33.08**

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of **\$44.05** per hour.

Effective Period: **1/1/2013 - 6/30/2013**

Wage Rate per Hour: **\$44.39**

Supplemental Benefit Rate per Hour: **\$35.12**

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of **\$46.09** per hour.

Mosaic Mechanic - Mosaic & Terrazzo Finisher

Effective Period: **7/1/2012 - 12/31/2012**

Wage Rate per Hour: **\$42.36**

Supplemental Benefit Rate per Hour: **\$33.08**

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of **\$44.05** per hour.

Effective Period: **1/1/2013 - 6/30/2013**

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.

Mosaic Mechanic - Machine Operator Grinder

Effective Period: **7/1/2012 - 12/31/2012**

Wage Rate per Hour: **\$42.36**

Supplemental Benefit Rate per Hour: **\$33.08**

Supplemental Note: Supplemental benefits for overtime to be paid at the rate of **\$44.05** per hour.

Effective Period: **1/1/2013 - 6/30/2013**

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.

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

Washington's Birthday

Good Friday

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

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

Paid Holidays

None

(Local #7)

PAINTER

Painter - Brush & Roller

Effective Period: 7/1/2012 - 10/31/2012

Wage Rate per Hour: **\$35.50**

Supplemental Benefit Rate per Hour: **\$25.12**

Supplemental Note: **\$29.75 on overtime**

Effective Period: 11/1/2012 - 4/30/2013

Wage Rate per Hour: **\$36.00**

Supplemental Benefit Rate per Hour: **\$25.12**

Supplemental Note: **\$29.75 on overtime**

Effective Period: 5/1/2013 - 6/30/2013

Wage Rate per Hour: **\$37.50**

Supplemental Benefit Rate per Hour: **\$25.12**

Supplemental Note: **\$29.75 on overtime**

Spray & Scaffold / Decorative / Sandblast

Effective Period: 7/1/2012 - 10/31/2012

Wage Rate per Hour: **\$38.50**

Supplemental Benefit Rate per Hour: **\$25.12**

Supplemental Note: **\$29.75 on overtime**

Effective Period: 11/1/2012 - 4/30/2013

Wage Rate per Hour: **\$39.00**

Supplemental Benefit Rate per Hour: **\$25.12**

Supplemental Note: **\$29.75 on overtime**

Effective Period: 5/1/2013 - 6/30/2013

Wage Rate per Hour: **\$40.50**

Supplemental Benefit Rate per Hour: **\$25.12**

Supplemental Note: **\$29.75 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.

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\$220 PREVAILING WAGE SCHEDULE

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Thanksgiving Day
Christmas Day

Paid Holidays

None

(District Council of Painters #9)

PAINTER - SIGN

Designer

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$36.15**

Supplemental Benefit Rate per Hour: **\$9.66**

Journey person

Effective Period: 7/1/2012 - 6/30/2013

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

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

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.

(Local #8A-28A)

PAINTER - STRIPER

Striper (paint)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$33.00**

Supplemental Benefit Rate per Hour: **\$11.52**

Supplemental Note: Overtime Supplemental Benefit rate - \$7.42; New Hire Rate (0-3 months) - \$0.00

Lineperson (thermoplastic)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$37.00**

Supplemental Benefit Rate per Hour: **\$11.52**

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.

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
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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)

PAINTER - STRUCTURAL STEEL

Painters on Structural Steel

Effective Period: 7/1/2012 - 9/30/2012

Wage Rate per Hour: \$46.25

Supplemental Benefit Rate per Hour: \$31.58

Effective Period: 10/1/2012 - 6/30/2013

Wage Rate per Hour: \$47.00

Supplemental Benefit Rate per Hour: \$32.08

Painter - Power Tool

Effective Period: 7/1/2012 - 9/30/2012

Wage Rate per Hour: \$52.25

Supplemental Benefit Rate per Hour: \$31.58

Effective Period: 10/1/2012 - 6/30/2013

Wage Rate per Hour: \$53.00

Supplemental Benefit Rate per Hour: \$32.08

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

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

Paid Holidays

None

Shift Rates

Regular hourly rates plus a ten per cent (10%) differential

(Local #806)

PAPERHANGER

Paperhanger

Effective Period: 7/1/2012 - 4/30/2013

Wage Rate per Hour: **\$37.44**

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: 5/1/2013 - 6/30/2013

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.

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.

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

(District Council of Painters #9)

PAVER AND ROADBUILDER

Paver & Roadbuilder - Formsetter

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$42.86

Supplemental Benefit Rate per Hour: \$32.15

Paver & Roadbuilder - Laborer

Paving and road construction work, regardless of material used, including but not limited to preparation of job sites, removal of old surfaces, asphalt and/or concrete, by whatever method, including but not limited to milling; laying of concrete; laying of asphalt for temporary, patchwork, and utility paving (but not production paving); site preparation and incidental work before the installation of rubberized materials and similar surfaces; installation and repair of temporary construction fencing; slurry seal coating, maintenance of safety surfaces; play equipment installation, and other related work.

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$38.99

Supplemental Benefit Rate per Hour: \$32.15

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$45.00

Supplemental Benefit Rate per Hour: \$32.15

Production Paver & Roadbuilder - Raker

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$44.49

Supplemental Benefit Rate per Hour: \$32.15

Production Paver & Roadbuilder - Shoveler

General laborer (except removal of surfaces - see Paver and Roadbuilder-Laborer) including but not limited to tamber, AC paint and liquid tar work.

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$41.20

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Supplemental Benefit Rate per Hour: \$32.15

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 15%, except if an employee works on production paving on New Year's Day or Christmas Day, they receive the single time rate plus one day's pay for the holiday worked.

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

Independence Day

Labor Day

Columbus Day

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 fifteen percent (15%) over the single time rate, except that production paving work shall be paid at 25% over the single time rate. 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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$40.78

Supplemental Benefit Rate per Hour: \$26.80

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$40.78

Supplemental Benefit Rate per Hour: \$27.55

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Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

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

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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$34.24

Supplemental Benefit Rate per Hour: \$24.40

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$34.50

Supplemental Benefit Rate per Hour: \$25.14

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Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.
Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).
New Year's Day
Washington's Birthday
Memorial Day
Independence Day
Labor Day
Presidential Election Day
Thanksgiving Day
Christmas Day

Paid Holidays

None

Shift Rates

When work commences outside regular work hours, workers receive an hour additional (differential) wage and supplement payment. Eight hours pay for seven hours work or nine hours pay for eight hours work.

(Mason Tenders District Council)

PLUMBER

Plumber

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$51.76
Supplemental Benefit Rate per Hour: \$37.19
Supplemental Note: Overtime supplemental benefit rate per hour: \$74.10

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$52.36
Supplemental Benefit Rate per Hour: \$37.34
Supplemental Note: Overtime supplemental benefit rate per hour: \$74.40

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 million or less, and for public works jobs where the plumbing contract 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

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
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trades at the site are working an eighth hour at straight time, then the plumber shall also work an eighth hour at straight time.

Overtime

Double time the regular time rate for Saturday.

Double time the regular rate for Sunday.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Shift Rates

Shift work, when directly specified in public agency or authority documents where plumbing contract is \$8 million or less, will be permitted. 30% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shifts Monday to Friday. 50% shift premium shall be paid for wages and fringe benefits for 4:00 pm and midnight shift work performed on weekends. For shift work on holidays, double time wages and fringe benefits shall be paid.

(Plumbers Local #1)

PLUMBER (MECHANICAL EQUIPMENT AND SERVICE)

(Mechanical Equipment and Service work shall include any repair and/or replacement of the present plumbing system.)

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$32.96**

Supplemental Benefit Rate per Hour: **\$15.93**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$33.21**

Supplemental Benefit Rate per Hour: **\$16.43**

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.

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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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$36.69

Supplemental Benefit Rate per Hour: \$25.46

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$37.11

Supplemental Benefit Rate per Hour: \$25.56

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

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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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$52.31**

Supplemental Benefit Rate per Hour: **\$31.56**

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Time and one half the regular rate for Sunday.

Overtime Holidays

Time and one half the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Veteran's Day

Thanksgiving Day

Day after Thanksgiving

Christmas Day

Paid Holidays

None

Shift Rates

All work outside the regular workday (8:00 A.M. to 3:30 P.M.) is to be paid at time and one half the regular hourly rate

(Plumbers Local #1)

POINTER - WATERPROOFER, CAULKER MECHANIC (EXTERIOR BUILDING RENOVATION)

Pointer - Waterproofer, Caulker Mechanic

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$44.63

Supplemental Benefit Rate per Hour: \$23.10

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)

ROOFER

Roofer

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$38.00

Supplemental Benefit Rate per Hour: \$27.07

Effective Period: 1/1/2013 - 6/30/2013

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§220 PREVAILING WAGE SCHEDULE

Wage Rate per Hour: **\$39.00**

Supplemental Benefit Rate per Hour: **\$27.37**

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

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)

SANDBLASTER - STEAMBLASTER (Exterior Building Renovation)

Sandblaster / Steamblaster

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$44.63**

Supplemental Benefit Rate per Hour: **\$23.10**

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).

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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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$45.65

Supplemental Benefit Rate per Hour: \$40.50

Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$45.65

Supplemental Benefit Rate per Hour: \$42.00

Supplemental Note: Supplemental benefit contributions are to be made at the applicable overtime rates.

Sheet Metal Worker - Duct Cleaner

Effective Period: 7/1/2012 - 6/30/2013

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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$36.52

Supplemental Benefit Rate per Hour: \$40.50

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Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$36.52

Supplemental Benefit Rate per Hour: \$42.00

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 journeyman engaged in fan maintenance shall work in excess of forty (40) hours in any work week.

(Local #28)

SHEET METAL WORKER - SPECIALTY (Decking & Siding)

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.

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§220 PREVAILING WAGE SCHEDULE

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$40.09**

Supplemental Benefit Rate per Hour: **\$22.06**

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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$41.55**

Supplemental Benefit Rate per Hour: **\$39.32**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$42.80**

Supplemental Benefit Rate per Hour: **\$42.17**

Overtime

Time and one half the regular rate after a 7 hour day.

Time and one half the regular rate for Saturday.

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

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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$50.75**

Supplemental Benefit Rate per Hour: **\$49.68**

Supplemental Note: Overtime supplemental benefit rate: **\$98.62**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$51.25**

Supplemental Benefit Rate per Hour: **\$50.54**

Supplemental Note: Overtime supplemental benefit rate: **\$100.34**

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
Independence Day
Labor Day

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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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$50.75

Supplemental Benefit Rate per Hour: \$49.68

Supplemental Note: Overtime supplemental benefit rate: \$98.62

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$51.25

Supplemental Benefit Rate per Hour: \$50.54

Supplemental Note: Overtime supplemental benefit rate: \$100.34

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

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§220 PREVAILING WAGE SCHEDULE

None

Shift Rates

May be performed outside of the regular workday except Saturday, Sunday and Holidays. A shift shall consist of eight working hours. All work performed in excess of eight hours shall be paid at double time. No shift shall commence after 7:00 P.M. on Friday or 7:00 P.M. the day before holidays. All work performed after 12:01 A.M. Saturday or 12:01 A.M. the day before a Holiday will be paid at double time. When shift work is performed the wage rate for regular time worked is a thirty percent premium together with fringe benefits.

On Transit Authority projects, where work is performed in the vicinity of tracks all shift work on weekends and holidays may be performed at the regular shift rates.

Local #638

STEAMFITTER - REFRIGERATION AND AIR CONDITIONER (Maintenance and Installation Service Person)

Refrigeration and Air Conditioner Mechanic

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$36.30

Supplemental Benefit Rate per Hour: \$11.76

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$37.05

Supplemental Benefit Rate per Hour: \$12.26

Refrigeration and Air Conditioner Service Person V (4th year)

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$29.82

Supplemental Benefit Rate per Hour: \$10.71

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$30.44

Supplemental Benefit Rate per Hour: \$11.13

Refrigeration and Air Conditioner Service Person IV (3rd year)

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$24.71

Supplemental Benefit Rate per Hour: \$9.80

Effective Period: 1/1/2013 - 6/30/2013

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

Wage Rate per Hour: **\$25.22**
Supplemental Benefit Rate per Hour: **\$10.16**

Refrigeration and Air Conditioner Service Person III (2nd year)

Filter changing and maintenance thereof, oil and greasing, tower and coil cleaning, scraping and painting, general housekeeping, taking of water samples.

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: **\$21.21**
Supplemental Benefit Rate per Hour: **\$9.12**

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: **\$21.65**
Supplemental Benefit Rate per Hour: **\$9.44**

Refrigeration and Air Conditioner Service Person II (2nd six months)

Filter changing and maintenance thereof, oil and greasing, tower and coil cleaning, scraping and painting, general housekeeping, taking of water samples.

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: **\$17.60**
Supplemental Benefit Rate per Hour: **\$8.50**

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: **\$17.96**
Supplemental Benefit Rate per Hour: **\$8.78**

Refrigeration and Air Conditioner Service Person I (1st six months)

Filter changing and maintenance thereof, oil and greasing, tower and coil cleaning, scraping and painting, general housekeeping, taking of water samples.

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: **\$10.95**
Supplemental Benefit Rate per Hour: **\$7.90**

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: **\$11.18**
Supplemental Benefit Rate per Hour: **\$8.10**

Overtime

Time and one half the regular rate after an 8 hour day.
Time and one half the regular rate for Saturday.
Double time the regular rate for Sunday.

Overtime Holidays

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

Double time the regular rate for work on the following holiday(s).

New Year's Day
Independence Day
Labor Day
Veteran's Day
Thanksgiving Day
Christmas Day

Double time and one half the regular rate for work on the following holiday(s).

Martin Luther King Jr. Day
President's Day
Memorial Day
Columbus Day

Paid Holidays

New Year's Day
Martin Luther King Jr. Day
President's Day
Memorial Day
Independence Day
Labor Day
Columbus Day
Veteran's Day
Thanksgiving Day
Christmas Day

(Local #638B)

STONE MASON - SETTER

Stone Mason - Setters

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$47.72

Supplemental Benefit Rate per Hour: \$35.28

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

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

Thanksgiving Day
Christmas Day

Paid Holidays

1/2 day on Christmas Eve if work is performed in the A.M.

Shift Rates

For all work outside the regular workday (8:00 A.M. to 3:30 P.M. Monday through Friday), the pay shall be straight time plus a ten percent (10%) differential.

(Bricklayers District Council)

TAPER

Drywall Taper

Effective Period: 7/1/2012 - 12/25/2012

Wage Rate per Hour: \$43.32

Supplemental Benefit Rate per Hour: \$21.66

Effective Period: 12/26/2012 - 6/30/2013

Wage Rate per Hour: \$43.82

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.

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

Shift Rates

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: 7/1/2012 - 6/30/2013

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

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

Employees have the option of observing either Martin Luther King's Birthday or the day after Thanksgiving instead of Lincoln's Birthday

Shift Rates

For any workday that starts before 8A.M. or ends after 6P.M. there is a 10% differential for the applicable worker's hourly rate.

Vacation

- After 6 months.....one week.
- After 12 months but less than 7 years.....two weeks.
- After 7 or more but less than 15 years.....three weeks.
- After 15 years or more but less than 25 years.....four weeks.

(C.W.A.)

TILE FINISHER

Tile Finisher

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: **\$38.17**
Supplemental Benefit Rate per Hour: **\$26.76**

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: **\$38.49**
Supplemental Benefit Rate per Hour: **\$27.42**

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

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

Shift Rates

Off shift work day (work performed outside the regular 8:00 A.M. to 3:30 P.M. workday): shift differential of one and one quarter (1¼) times the regular straight time rate of pay for the seven hours of actual off-shift work.

(Local #7)

TILE LAYER - SETTER

Tile Layer - Setter

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$47.75**

Supplemental Benefit Rate per Hour: **\$30.83**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$48.55**

Supplemental Benefit Rate per Hour: **\$31.46**

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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$42.63

Supplemental Benefit Rate per Hour: \$41.99

Overtime

Time and one half the regular rate after an 8 hour day.

Time and one half the regular rate for Saturday.

Double time the regular rate for Sunday.

Saturday may be used as a make-up day at straight time when a day is lost during that week to inclement weather.

Overtime Holidays

Double time the regular rate for work on the following holiday(s).

New Year's Day

President's Day

Memorial Day

Independence Day

Labor Day

Columbus Day

Presidential Election Day

Thanksgiving Day

Christmas Day

Paid Holidays

None

Shift Rates

Off shift work, commencing between 5:00 P.M. and 10:00 P.M., shall work eight and one half hours but will be paid for 9 hours, including benefits at the straight time rate for 8 hours.

(Local #1536)

TUNNEL WORKER

Blasters, Mucking Machine Operators (Compressed Air Rates)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$52.00

Supplemental Benefit Rate per Hour: \$46.85

Tunnel Workers (Compressed Air Rates)

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

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$50.19
Supplemental Benefit Rate per Hour: \$45.29

Top Nipper (Compressed Air Rates)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$49.27
Supplemental Benefit Rate per Hour: \$44.51

Outside Lock Tender, Outside Gauge Tender, Muck Lock Tender (Compressed Air Rates)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$48.37
Supplemental Benefit Rate per Hour: \$43.67

Bottom Bell & Top Bell Signal Person: Shaft Person (Compressed Air Rates)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$48.37
Supplemental Benefit Rate per Hour: \$43.67

Changehouse Attendant: Powder Watchperson (Compressed Air Rates)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$42.09
Supplemental Benefit Rate per Hour: \$41.41

Blasters (Free Air Rates)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$49.62
Supplemental Benefit Rate per Hour: \$44.75

Tunnel Workers (Free Air Rates)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$47.48
Supplemental Benefit Rate per Hour: \$42.84

All Others (Free Air Rates)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$43.87
Supplemental Benefit Rate per Hour: \$39.62

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

Microtunneling (Free Air Rates)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$37.98

Supplemental Benefit Rate per Hour: \$34.27

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.

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.**

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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.

**APPRENTICESHIP SCHEDULE OF PREVAILING WAGES AND SUPPLEMENTAL BENEFITS
ADDENDUM
EFFECTIVE PERIOD JANUARY 1, 2013 THROUGH JUNE 30, 2013**

List of Amended Classifications

1. Boilermaker
2. House Wrecker
3. Iron Worker - Ornamental
4. Iron Worker - Structural
5. Mason Tender
6. Plasterer
7. Plumber

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

Asbestos Handler (First 1000 Hours)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 78% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$14.85

Asbestos Handler (Second 1000 Hours)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 80% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$14.85

Asbestos Handler (Third 1000 Hours)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 83% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$14.85

Asbestos Handler (Fourth 1000 Hours)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 89% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$14.85

(Local #78)

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

Boilermaker (First Year)

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate Per Hour: 65% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$27.41

Effective Period: 1/1/2013 - 3/31/2013
Wage Rate Per Hour: 65% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$28.45

Effective Period: 4/1/2013 - 6/30/2013
Wage Rate Per Hour: 65% of Journeyman's rate

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

Supplemental Benefit Rate Per Hour: \$28.75

Boilermaker (Second Year: 1st Six Months)

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate Per Hour: 70% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$28.91

Effective Period: 1/1/2013 - 3/31/2013

Wage Rate Per Hour: 70% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$30.03

Effective Period: 4/1/2013 - 6/30/2013

Wage Rate Per Hour: 70% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$30.33

Boilermaker (Second Year: 2nd Six Months)

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate Per Hour: 75% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$30.40

Effective Period: 1/1/2013 - 3/31/2013

Wage Rate Per Hour: 75% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$31.61

Effective Period: 4/1/2013 - 6/30/2013

Wage Rate Per Hour: 75% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$31.91

Boilermaker (Third Year: 1st Six Months)

Effective Period: 7/1/2012 - 12/31/2012

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

Supplemental Benefit Rate Per Hour: \$31.89

Effective Period: 1/1/2013 - 3/31/2013

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

Supplemental Benefit Rate Per Hour: \$33.19

Effective Period: 4/1/2013 - 6/30/2013

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

Supplemental Benefit Rate Per Hour: \$33.49

Boilermaker (Third Year: 2nd Six Months)

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate Per Hour: 85% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$33.38

Effective Period: 1/1/2013 - 3/31/2013

Wage Rate Per Hour: 85% of Journeyman's rate

Supplemental Benefit Rate Per Hour: \$34.76

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

Effective Period: 4/1/2013 - 6/30/2013
Wage Rate Per Hour: 85% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$35.06

Boilermaker (Fourth Year: 1st Six Months)

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$34.88

Effective Period: 1/1/2013 - 3/31/2013
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$36.34

Effective Period: 4/1/2013 - 6/30/2013
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$36.64

Boilermaker (Fourth Year: 2nd Six Months)

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate Per Hour: 95% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$36.38

Effective Period: 1/1/2013 - 3/31/2013
Wage Rate Per Hour: 95% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$37.90

Effective Period: 4/1/2013 - 6/30/2013
Wage Rate Per Hour: 95% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$38.20

(Local #5)

BRICKLAYER

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

Bricklayer (First 750 Hours)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$16.60

Bricklayer (Second 750 Hours)

Effective Period: 7/1/2012 - 6/30/2013

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

Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$16.60

Bricklayer (Third 750 Hours)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$16.60

Bricklayer (Fourth 750 Hours)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$16.60

Bricklayer (Fifth 750 Hours)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 90% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$16.60

Bricklayer (Sixth 750 Hours)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 95% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$16.60

(Bricklayer District Council)

CARPENTER

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

Carpenter (First Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$27.69

Carpenter (Second Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$27.69

Carpenter (Third Year)

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

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$27.69

Carpenter (Fourth Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$27.69

(Carpenters District Council)

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

Cement Mason (First Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage and Supplemental Rate Per Hour: 50% of Journeyperson's Rate

Cement Mason (Second Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's Rate

Cement Mason (Third Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage and Supplemental Rate Per Hour: 70% of Journeyperson's Rate

(Local #780)

CEMENT AND CONCRETE WORKER
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)

Cement & Concrete Worker (0 - 500 hours)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Rate Per Hour: \$17.54

Cement & Concrete Worker (501 - 1000 hours)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 65% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$18.37

Cement & Concrete Worker (1001 - 2000 hours)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 65% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$23.75

Cement & Concrete Worker (2001 - 4000 hours)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 80% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$24.57

(Cement Concrete Workers District Council)

**DERRICKPERSON & RIGGER (STONE)
(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 6)**

Derrickperson & Rigger (stone) - First Year

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Benefit Rate Per Hour: 50% of Journeyman's rate

Derrickperson & Rigger (stone) - Second Year: 1st Six Months

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 70% of Journeyman's rate
Supplemental Benefit Rate Per Hour: 75% of Journeyman's rate

Derrickperson & Rigger (stone) - Second Year: 2nd Six Months

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 80% of Journeyman's rate
Supplemental Benefit Rate Per Hour: 75% of Journeyman's rate

Derrickperson & Rigger (stone) - Third Year

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 90% of Journeyman's rate
Supplemental Benefit Rate Per Hour: 75% of Journeyman's rate

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

(Local #197)

DOCKBUILDER/PILE DRIVER

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 6)

Dockbuilder/Pile Driver (First Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 40% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$27.69

Dockbuilder/Pile Driver (Second Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$27.69

Dockbuilder/Pile Driver (Third Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 65% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$27.69

Dockbuilder/Pile Driver (Fourth Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 80% of Journeyman's rate
Supplemental Benefit Rate Per Hour: \$27.69

(Carpenters District Council)

ELECTRICIAN

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

Electrician (First Year - Hired before 5/10/07)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$14.25
Supplemental Benefit Rate per Hour: \$11.19
Overtime Wage Rate Per Hour: \$21.38

OFFICE OF THE COMPTROLLER, CITY OF NEW YORK
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Overtime Supplemental Rate Per Hour: \$11.96

Electrician (First Year - Hired on or After 5/10/07)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$11.50

Supplemental Benefit Rate per Hour: \$9.86

Overtime Wage Rate Per Hour: \$17.25

Overtime Supplemental Rate Per Hour: \$10.48

Electrician (Second Year - Hired before 5/10/07)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$17.05

Supplemental Benefit Rate per Hour: \$12.54

Overtime Wage Rate Per Hour: \$25.58

Overtime Supplemental Rate Per Hour: \$13.47

Electrician (Second Year - Hired on or After 5/10/07)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$13.50

Supplemental Benefit Rate per Hour: \$10.83

Overtime Wage Rate Per Hour: \$20.25

Overtime Supplemental Rate Per Hour: \$11.56

Electrician (Third Year - Hired before 5/10/07)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$19.15

Supplemental Benefit Rate per Hour: \$13.56

Overtime Wage Rate Per Hour: \$28.73

Overtime Supplemental Rate Per Hour: \$14.60

Electrician (Third Year - Hired on or After 5/10/07)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$15.50

Supplemental Benefit Rate per Hour: \$11.79

Overtime Wage Rate Per Hour: \$23.25

Overtime Supplemental Rate Per Hour: \$12.63

Electrician (Fourth Year - Hired before 5/10/07)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$21.10

Supplemental Benefit Rate per Hour: \$14.50

Overtime Wage Rate Per Hour: \$31.65

Overtime Supplemental Rate Per Hour: \$15.65

Electrician (Fourth Year - Hired on or After 5/10/07)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$17.50
Supplemental Benefit Rate per Hour: \$12.76
Overtime Wage Rate Per Hour: \$26.25
Overtime Supplemental Rate Per Hour: \$13.71

Electrician (Fifth Year - Hired before 5/10/07)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$25.30
Supplemental Benefit Rate per Hour: \$17.52
Overtime Wage Rate Per Hour: \$37.95
Overtime Supplemental Rate Per Hour: \$18.85

Electrician (Fifth Year - Hired on or After 5/10/07)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$21.50
Supplemental Benefit Rate per Hour: \$15.71
Overtime Wage Rate Per Hour: \$32.25
Overtime Supplemental Rate Per Hour: \$16.84

Overtime Description

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)**

Elevator (Constructor) - First Year

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Rate Per Hour: \$25.40
Effective 3/17/2013 - Supplemental Rate Per Hour: \$26.87

Elevator (Constructor) - Second Year

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 55% of Journeyman's rate
Supplemental Rate Per Hour: \$26.43
Effective 3/17/2013 - Supplemental Rate Per Hour: \$27.92

Elevator (Constructor) - Third Year

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: \$27.84
Effective 3/17/2013 - Supplemental Rate Per Hour: \$29.38

Elevator (Constructor) - Fourth Year

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$29.25
Effective 3/17/2013 - Supplemental Benefit 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: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Benefit Per Hour: \$25.33
Effective 3/17/2013 - Supplemental Benefit Per Hour: \$26.79

Elevator Service/Modernization Mechanic (Second Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Benefit Per Hour: \$25.65
Effective 3/17/2013 - Supplemental Benefit Per Hour: \$27.12

Elevator Service/Modernization Mechanic (Third Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Benefit Per Hour: \$26.92
Effective 3/17/2013 - Supplemental Benefit Per Hour: \$28.43

Elevator Service/Modernization Mechanic (Fourth Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Benefit Per Hour: \$28.19

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Effective 3/17/2013 - 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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$21.64

Supplemental Benefit Rate per Hour: \$20.07

Engineer - Second Year

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$27.05

Supplemental Benefit Rate per Hour: \$20.07

Engineer - Third Year

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$29.75

Supplemental Benefit Rate per Hour: \$20.07

Engineer - Fourth Year

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$32.45

Supplemental Benefit Rate per Hour: \$20.07

(Local #15)

ENGINEER - OPERATING

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 5)

Operating Engineer - First Year

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate Per Hour 40% of Journeyperson's Rate

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Supplemental Benefit Per Hour: \$18.65

Operating Engineer - Second Year

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 50% of Journeyman's Rate
Supplemental Benefit Per Hour: \$18.65

Operating Engineer - Third Year

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 60% of Journeyman's Rate
Supplemental Benefit Per Hour: \$18.65

(Local #14)

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

Floor Coverer (First Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 40% of Journeyman's rate
Supplemental Rate Per Hour: \$25.75

Floor Coverer (Second Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Rate Per Hour: \$25.75

Floor Coverer (Third Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 65% of Journeyman's rate
Supplemental Rate Per Hour: \$25.75

Floor Coverer (Fourth Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 80% of Journeyman's rate
Supplemental Rate Per Hour: \$25.75

(Carpenters District Council)

GLAZIER

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

Glazier (First Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 40% of Journeyman's rate
Supplemental Rate Per Hour: \$11.97

Glazier (Second Year)

Effective Period: 7/1/2012 - 10/31/2012
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Rate Per Hour: \$21.01

Effective Period: 11/1/2012 - 6/30/2013
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Rate Per Hour: \$21.13

Glazier (Third Year)

Effective Period: 7/1/2012 - 10/31/2012
Wage Rate Per Hour: 60% of Journeyman's rate
Supplemental Rate Per Hour: \$23.38

Effective Period: 11/1/2012 - 6/30/2013
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Rate Per Hour: \$23.54

Glazier (Fourth Year)

Effective Period: 7/1/2012 - 10/31/2012
Wage Rate Per Hour: 80% of Journeyman's rate
Supplemental Rate Per Hour: \$28.14

Effective Period: 11/1/2012 - 6/30/2013
Wage Rate Per Hour: 50% of Journeyman's rate
Supplemental Rate Per Hour: \$28.34

(Local #1281)

HEAT & FROST INSULATOR

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

Heat & Frost Insulator (First Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

Heat & Frost Insulator (Second Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Heat & Frost Insulator (Third Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage and Supplemental Rate Per Hour: 70% of Journeyperson's rate

Heat & Frost Insulator (Fourth Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage and Supplemental Rate Per Hour: 80% of Journeyperson's rate

(Local #12)

**HOUSE WRECKER
(TOTAL DEMOLITION)
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 3)**

House Wrecker - First Year

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$20.06
Supplemental Benefit Rate per Hour: \$15.45

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$20.21
Supplemental Benefit Rate per Hour: \$15.80

House Wrecker - Second Year

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$21.06
Supplemental Benefit Rate per Hour: \$15.45

Effective Period: 1/1/2013 - 6/30/2013

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Wage Rate per Hour: \$21.26
Supplemental Benefit Rate per Hour: \$15.80

House Wrecker - Third Year

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$22.56
Supplemental Benefit Rate per Hour: \$15.45

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$22.81
Supplemental Benefit Rate per Hour: \$15.80

House Wrecker - Fourth Year

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$25.06
Supplemental Benefit Rate per Hour: \$15.45

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$25.36
Supplemental Benefit Rate per Hour: \$15.80

(Local #79)

IRON WORKER - ORNAMENTAL
(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 4)

Iron Worker (Ornamental) - 1st Four Months - Hired on or Before 8/1/08

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 60% of Journeyman's rate
Supplemental Rate Per Hour: \$32.06

Iron Worker (Ornamental) 5 - 10 Months - Hired on or Before 8/1/08

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 65% of Journeyman's rate
Supplemental Rate Per Hour: \$32.89

Iron Worker (Ornamental) 11 - 16 Months - Hired on or Before 8/1/08

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate Per Hour: 70% of Journeyman's rate
Supplemental Rate Per Hour: \$33.73

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Effective Period: 1/1/2013 - 6/30/2013
Wage Rate Per Hour: 70% of Journey person's rate
Supplemental Rate Per Hour: \$34.34

Iron Worker (Ornamental) 17 - 22 Months - Hired on or Before 8/1/08

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 80% of Journey person's rate
Supplemental Rate Per Hour: \$35.39

Iron Worker (Ornamental) 23 - 28 Months - Hired on or Before 8/1/08

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 85% of Journey person's rate
Supplemental Rate Per Hour: \$36.22

Iron Worker (Ornamental) 29 - 36 Months - Hired on or Before 8/1/08

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 95% of Journey person's rate
Supplemental Rate Per Hour: \$37.89

Iron Worker (Ornamental) - 1st Ten Months - Hired After 8/1/08

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate Per Hour: 50% of Journey person's rate
Supplemental Rate Per Hour: \$30.40

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate Per Hour: 50% of Journey person's rate
Supplemental Rate Per Hour: \$33.39

Iron Worker (Ornamental) - 11 - 16 Months - Hired After 8/1/08

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate Per Hour: 55% of Journey person's rate
Supplemental Rate Per Hour: \$31.23

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate Per Hour: 55% of Journey person's rate
Supplemental Rate Per Hour: \$34.34

Iron Worker (Ornamental) - 17 - 22 Months - Hired After 8/1/08

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate Per Hour: 60% of Journey person's rate
Supplemental Rate Per Hour: \$32.06

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate Per Hour: 60% of Journey person's rate
Supplemental Rate Per Hour: \$35.29

Iron Worker (Ornamental) - 23 - 28 Months - Hired After 8/1/08

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$33.73

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$37.19

Iron Worker (Ornamental) - 29 - 36 Months - Hired After 8/1/08

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: \$35.39

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: \$39.09

(Local #580)

**IRON WORKER - STRUCTURAL
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)**

Iron Worker (Structural) - 1st Six Months

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$23.62
Supplemental Benefit Rate per Hour: \$41.21

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$24.10
Supplemental Benefit Rate per Hour: \$43.12

Iron Worker (Structural) - 7- 18 Months

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$24.22
Supplemental Benefit Rate per Hour: \$41.21

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$24.70
Supplemental Benefit Rate per Hour: \$43.12

Iron Worker (Structural) - 19 - 36 months

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$24.82

Supplemental Benefit Rate per Hour: \$41.21

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$25.30

Supplemental Benefit Rate per Hour: \$43.12

(Local #40 and #361)

LABORER (FOUNDATION, CONCRETE, EXCAVATING, STREET PIPE LAYER & COMMON)

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

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - First 1000 hours

Effective Period: 7/1/2012 - 6/30/2013

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

Supplemental Rate Per Hour: \$31.75

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Second 1000 hours

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate Per Hour: 60% of Journeyman's rate

Supplemental Rate Per Hour: \$31.75

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Third 1000 hours

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate Per Hour: 75% of Journeyman's rate

Supplemental Rate Per Hour: \$31.75

Laborer (Foundation, Concrete, Excavating, Street Pipe Layer & Common) - Fourth 1000 hours

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate Per Hour: 90% of Journeyman's rate

Supplemental Rate Per Hour: \$31.75

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(Local #731)

MARBLE MECHANICS

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

Cutters & Setters - First 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

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

NO BENEFITS PAID DURING THE FIRST TWO MONTHS (PROBATIONARY PERIOD)

Cutters & Setters - Second 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

Wage and Supplemental Rate Per Hour: 55% of Journeyman's rate

Cutters & Setters - Third 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

Wage and Supplemental Rate Per Hour: 65% of Journeyman's rate

Cutters & Setters - Fourth 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

Wage and Supplemental Rate Per Hour: 75% of Journeyman's rate

Cutters & Setters - Fifth 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

Wage and Supplemental Rate Per Hour: 85% of Journeyman's rate

Cutters & Setters - Sixth 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

Wage and Supplemental Rate Per Hour: 95% of Journeyman's rate

Polishers & Finishers - First 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

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

NO BENEFITS PAID DURING THE FIRST TWO MONTHS (PROBATIONARY PERIOD)

Polishers & Finishers - Second 750 Hours

Effective Period: 7/1/2012 - 6/30/2013
Wage and Supplemental Rate Per Hour: 60% of Journeyperson's rate

Polishers & Finishers - Third 750 Hours

Effective Period: 7/1/2012 - 6/30/2013
Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Polishers & Finishers - Fourth 750 Hours

Effective Period: 7/1/2012 - 6/30/2013
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: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$20.33
Supplemental Benefit Rate per Hour: \$16.16

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$20.48
Supplemental Benefit Rate per Hour: \$16.51

Mason Tender - Second Year

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$21.33
Supplemental Benefit Rate per Hour: \$16.16

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$21.53
Supplemental Benefit Rate per Hour: \$16.51

Mason Tender - Third Year

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$22.83

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Supplemental Benefit Rate per Hour: \$16.16

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$23.08

Supplemental Benefit Rate per Hour: \$16.51

Mason Tender - Fourth Year

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$25.33

Supplemental Benefit Rate per Hour: \$16.16

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$25.63

Supplemental Benefit Rate per Hour: \$16.51

(Local #79)

METALLIC LATHER

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

Metallic Lather (First Year -Called Prior to 6/29/11)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$27.91

Supplemental Benefit Rate per Hour: \$22.79

Metallic Lather (Second Year - Called Prior to 6/29/11)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$32.51

Supplemental Benefit Rate per Hour: \$24.44

Metallic Lather (Third Year - Called Prior to 6/29/11)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$37.57

Supplemental Benefit Rate per Hour: \$25.59

Metallic Lather (First Year -Called On Or After 6/29/11)

Effective Period: 7/1/2012 - 6/30/2013

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: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$22.71
Supplemental Benefit Rate per Hour: \$19.85

Metallic Lather (Third Year - Called On Or After 6/29/11)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$27.71
Supplemental Benefit Rate per Hour: \$19.85

(Local #46)

MILLWRIGHT

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

Millwright (First Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$25.40
Supplemental Benefit Rate per Hour: \$28.67

Millwright (Second Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$30.02
Supplemental Benefit Rate per Hour: \$31.87

Millwright (Third Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$34.64
Supplemental Benefit Rate per Hour: \$36.19

Millwright (Fourth Year)

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$43.88
Supplemental Benefit Rate per Hour: \$41.50

(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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$25.72

Supplemental Benefit Rate per Hour: \$15.75

Paver and Roadbuilder - Second Year (Minimum 1000 hours)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$27.29

Supplemental Benefit Rate per Hour: \$15.75

(Local #1010)

PAINTER

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

Painter - Brush & Roller - First Year

Effective Period: 7/1/2012 - 10/31/2012

Wage Rate per Hour: \$14.20

Supplemental Benefit Rate per Hour: \$10.88

Effective Period: 11/1/2012 - 6/30/2013

Wage Rate per Hour: \$14.40

Supplemental Benefit Rate per Hour: \$10.88

Painter - Brush & Roller - Second Year

Effective Period: 7/1/2012 - 10/31/2012

Wage Rate per Hour: \$17.75

Supplemental Benefit Rate per Hour: \$14.73

Effective Period: 11/1/2012 - 6/30/2013

Wage Rate per Hour: \$18.00

Supplemental Benefit Rate per Hour: \$14.73

Painter - Brush & Roller - Third Year

Effective Period: 7/1/2012 - 10/31/2012

Wage Rate per Hour: \$21.30

Supplemental Benefit Rate per Hour: \$17.64

Effective Period: 11/1/2012 - 6/30/2013

Wage Rate per Hour: \$21.60

Supplemental Benefit Rate per Hour: \$17.64

Painter - Brush & Roller - Fourth Year

Effective Period: 7/1/2012 - 10/31/2012

Wage Rate per Hour: \$28.40

Supplemental Benefit Rate per Hour: \$23.02

Effective Period: 11/1/2012 - 6/30/2013

Wage Rate per Hour: \$28.80

Supplemental Benefit Rate per Hour: \$23.02

(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: 7/1/2012 - 6/30/2013

Wage and Supplemental Rate Per Hour: 40% of Journeyman's rate

Painters - Structural Steel (Second Year)

Effective Period: 7/1/2012 - 6/30/2013

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

Painters - Structural Steel (Third Year)

Effective Period: 7/1/2012 - 6/30/2013

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: 7/1/2012 - 12/31/2012

Wage Rate Per Hour: 40% of Journeyman's rate

Supplemental Rate Per Hour: \$14.61

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate Per Hour: 40% of Journeyman's rate

Supplemental Rate Per Hour: \$15.36

Plasterer - First Year: 2nd Six Months

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate Per Hour: 45% of Journeyman's rate

Supplemental Rate Per Hour: \$15.09

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate Per Hour: 45% of Journeyman's rate

Supplemental Rate Per Hour: \$15.84

Plasterer - Second Year: 1st Six Months

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate Per Hour: 55% of Journeyman's rate

Supplemental Rate Per Hour: \$17.06

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate Per Hour: 55% of Journeyman's rate

Supplemental Rate Per Hour: \$17.81

Plasterer - Second Year: 2nd Six Months

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate Per Hour: 60% of Journeyman's rate

Supplemental Rate Per Hour: \$18.14

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate Per Hour: 60% of Journeyman's rate

Supplemental Rate Per Hour: \$18.89

Plasterer - Third Year: 1st Six Months

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate Per Hour: 70% of Journeyman's rate

Supplemental Rate Per Hour: \$20.31

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$21.06

Plasterer - Third Year: 2nd Six Months

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$21.39

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$22.14

(Local #530)

PLUMBER

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

Plumber - First Year: 1st Six Months

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$14.00
Supplemental Benefit Rate per Hour: \$0.71

Plumber - First Year: 2nd Six Months

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$14.00
Supplemental Benefit Rate per Hour: \$2.96

Plumber - Second Year

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$17.96
Supplemental Benefit Rate per Hour: \$16.25

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$18.26
Supplemental Benefit Rate per Hour: \$16.32

Plumber - Third Year

Effective Period: 7/1/2012 - 12/31/2012

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

Wage Rate per Hour: \$20.06
Supplemental Benefit Rate per Hour: \$16.25

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$20.36
Supplemental Benefit Rate per Hour: \$16.32

Plumber - Fourth Year

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$22.91
Supplemental Benefit Rate per Hour: \$16.25

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$23.21
Supplemental Benefit Rate per Hour: \$16.32

Plumber - Fifth Year: 1st Six Months

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$24.31
Supplemental Benefit Rate per Hour: \$16.25

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$24.61
Supplemental Benefit Rate per Hour: \$16.32

Plumber - Fifth Year: 2nd Six Months

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$36.38
Supplemental Benefit Rate per Hour: \$16.25

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$36.68
Supplemental Benefit Rate per Hour: \$16.32

(Plumbers Local #1)

**POINTER - WATERPROOFER, CAULKER MECHANIC (EXTERIOR BUILDING
RENOVATION)**
(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 4)

Pointer - Waterproofer, Caulker Mechanic - First Year

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

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$25.00

Supplemental Benefit Rate per Hour: \$3.45

Pointer - Waterproofer, Caulker Mechanic - Second Year

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$27.25

Supplemental Benefit Rate per Hour: \$8.40

Pointer - Waterproofer, Caulker Mechanic - Third Year

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$32.23

Supplemental Benefit Rate per Hour: \$11.15

Pointer - Waterproofer, Caulker Mechanic - Fourth Year

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$38.66

Supplemental Benefit Rate per Hour: \$11.15

(Bricklayer District Council)

ROOFER

(Ratio of Apprentice to Journeyman: 1 to 1, 1 to 2)

Roofers - First Year

Effective Period: 7/1/2012 - 6/30/2013

Wage and Supplemental Rate Per Hour: 35% of Journeyman's Rate

Roofers - Second Year

Effective Period: 7/1/2012 - 6/30/2013

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

Roofers - Third Year

Effective Period: 7/1/2012 - 6/30/2013

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

Roofers - Fourth Year

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

Effective Period: 7/1/2012 - 6/30/2013

Wage and Supplemental Rate Per Hour: 75% of Journeyman's Rate

(Local #8)

SHEET METAL WORKER

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

Sheet Metal Worker - First Year

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate Per Hour: 30% of Journeyman's rate

Supplemental Rate Per Hour: \$15.37

Sheet Metal Worker - Second Year

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate Per Hour: 35% of Journeyman's rate

Supplemental Rate Per Hour: \$18.24

Sheet Metal Worker - Third Year (1st Six Months)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate Per Hour: 40% of Journeyman's rate

Supplemental Rate Per Hour: \$20.06

Sheet Metal Worker - Third Year (2nd Six Months)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate Per Hour: 45% of Journeyman's rate

Supplemental Rate Per Hour: \$21.87

Sheet Metal Worker - Fourth Year (1st Six Months)

Effective Period: 7/1/2012 - 6/30/2013

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

Supplemental Rate Per Hour: \$23.69

Sheet Metal Worker - Fourth Year (2nd Six Months)

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate Per Hour: 55% of Journeyman's rate

Supplemental Rate Per Hour: \$25.33

Sheet Metal Worker - Fifth Year (1st Six Months)

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

Effective Period: 7/1/2012 - 6/30/2013
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: 7/1/2012 - 6/30/2013
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: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 35% of Journeyperson's rate
Supplemental Rate Per Hour: \$5.96

Sign Erector - First Year: 2nd Six Months

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 40% of Journeyperson's rate
Supplemental Rate Per Hour: \$6.75

Sign Erector - Second Year: 1st Six Months

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 45% of Journeyperson's rate
Supplemental Rate Per Hour: \$7.55

Sign Erector - Second Year: 2nd Six Months

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 50% of Journeyperson's rate
Supplemental Rate Per Hour: \$8.34

Sign Erector - Third Year: 1st Six Months

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 55% of Journeyperson's rate
Supplemental Rate Per Hour: \$9.13

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

Sign Erector - Third Year: 2nd Six Months

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 60% of Journeyperson's rate
Supplemental Rate Per Hour: \$9.92

Sign Erector - Fourth Year: 1st Six Months

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 65% of Journeyperson's rate
Supplemental Rate Per Hour: \$10.72

Sign Erector - Fourth Year: 2nd Six Months

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 70% of Journeyperson's rate
Supplemental Rate Per Hour: \$11.51

Sign Erector - Fifth Year

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 75% of Journeyperson's rate
Supplemental Rate Per Hour: \$12.30

Sign Erector - Sixth Year

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate Per Hour: 80% of Journeyperson's rate
Supplemental Rate Per Hour: \$12.30

(Local #137)

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

Steamfitter - First Year

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate and Supplemental Per Hour: 40% of Journeyperson's rate

Steamfitter - Second Year

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate and Supplemental Rate Per Hour: 50% of Journeyperson's rate.

Steamfitter - Third Year

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate and Supplemental Rate per Hour: 65% of Journeyperson's rate.

Steamfitter - Fourth Year

Effective Period: 7/1/2012 - 6/30/2013

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

Steamfitter - Fifth Year

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate and Supplemental Rate Per Hour: 85% of Journeyperson's rate.

(Local #638)

STONE MASON - SETTER

(Ratio Apprentice of Journeyperson: 1 to 1, 1 to 2)

Stone Mason - Setters - First 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

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

Stone Mason - Setters - Second 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate Per Hour: 60% of Journeyperson's rate

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

Stone Mason - Setters - Third 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate Per Hour: 70% of Journeyperson's rate

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

Stone Mason - Setters - Fourth 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

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

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

Stone Mason - Setters - Fifth 750 Hours

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

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate Per Hour: 90% of Journeyperson's rate

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

Stone Mason - Setters - Sixth 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate Per Hour: 100% of Journeyperson's rate

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

(Bricklayers District Council)

TAPER

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

Drywall Taper - First Year

Effective Period: 7/1/2012 - 6/30/2013

Wage and Supplemental Rate Per Hour: 40% of Journeyperson's rate

Drywall Taper - Second Year

Effective Period: 7/1/2012 - 6/30/2013

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

Drywall Taper - Third Year

Effective Period: 7/1/2012 - 6/30/2013

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

(Local #1974)

TILE LAYER - SETTER

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

Tile Layer - Setter - First 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

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

Tile Layer - Setter - Second 750 Hours

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

Effective Period: 7/1/2012 - 6/30/2013

Wage and Supplemental Rate Per Hour: 55% of Journeyperson's rate

Tile Layer - Setter - Third 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

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

Tile Layer - Setter - Fourth 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

Wage and Supplemental Rate Per Hour: 75% of Journeyperson's rate

Tile Layer - Setter - Fifth 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

Wage and Supplemental Rate Per Hour: 85% of Journeyperson's rate

Tile Layer - Setter - Sixth 750 Hours

Effective Period: 7/1/2012 - 6/30/2013

Wage and Supplemental Rate Per Hour: 95% of Journeyperson's rate

(Local #7)

TIMBERPERSON

(Ratio of Apprentice to Journeyperson: 1 to 1, 1 to 6)

Timberperson - First Year

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate Per Hour: 40% of Journeyperson's rate

Supplemental Rate Per Hour: \$27.49

Timberperson - Second Year

Effective Period: 7/1/2012 - 6/30/2013

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

Supplemental Rate Per Hour: \$27.49

Timberperson - Third Year

Effective Period: 7/1/2012 - 6/30/2013

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

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

Supplemental Rate Per Hour: \$27.49

Timberperson - Fourth Year

Effective Period: 7/1/2012 - 6/30/2013

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

Supplemental Rate Per Hour: \$27.49

(Local #1536)

LABOR LAW § 230 AND NYC ADMINISTRATIVE CODE § 6-130
BUILDING SERVICE EMPLOYEES

PREVAILING WAGE FOR BUILDING SERVICE EMPLOYEES ON NYC CONTRACTS PURSUANT TO
LABOR LAW § 230 ET SEQ.

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.

PREVAILING WAGE FOR BUILDING SERVICE EMPLOYEES IN NEW YORK CITY LEASED OR
FINANCIALLY ASSISTED FACILITIES PURSUANT TO NYC ADMINISTRATIVE CODE § 6-130

Covered landlords & covered financial assistance recipients shall ensure that all building service employees performing building service work at the premises to which a lease or financial assistance pertains are paid no less than the prevailing wage listed in the Labor Law §230 Prevailing Wage Schedule.

Covered Landlords include:

Businesses (other than not-for-profit organizations) leasing to New York City agencies commercial office space or commercial office facilities of 10,000 square feet or more where the City leases or rents no less than 51% of the total square footage of the building to which the lease applies (no less than 80% in Staten Island or in an area not defined as an exclusion area pursuant to section 421-a of the real property tax law on the date of enactment of the local law).

Covered Financial Assistance Recipients include:

Businesses (other than not-for-profit organizations) with annual gross revenues of five million dollars or more who have received financial assistance from the City of New York (as defined in New York City Administrative Code §6-130) with a total value of one million dollars or more.

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

Exemptions: Business Improvement Districts and employers with manufacturing operations at the premises to which the financial assistance pertains.

The information is intended to assist you in meeting your prevailing wage obligation. You should consult New York City Administrative Code §6-130 to determine whether you are covered by this prevailing wage law. New York City Administrative Code § 6-130 requires the City to maintain an updated list of covered landlords and financial assistance recipients who are subject to the prevailing wage requirement.

Labor Law § 231 (6) and NYC Administrative Law §6-130 require 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: Wasyl 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
- 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.

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



Office of the Comptroller
BUREAU OF LABOR LAW

CITY OF NEW YORK
OFFICE OF THE COMPTROLLER
JOHN C. LIU

BUREAU OF LABOR LAW

MUNICIPAL BUILDING
ONE CENTRE STREET, ROOM 1120
NEW YORK, N.Y. 10007-2341

TEL: (212) 669-4443
FAX: (212) 669-4002

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 1, 2013 THROUGH JUNE 30, 2013

List of Amended Changes

1. MODIFIED PREAMBLE TO INCORPORATE PROVISIONS OF NYC
ADMINISTRATIVE CODE §6-130

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

BOILER SERVICE PERSON/TANK CLEANER MECHANIC (LOW PRESSURE)

Boiler Service Person/Tank Cleaner Mechanic (Low Pressure)

Effective Period: 7/1/2012 - 6/30/2013

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
§230 PREVAILING WAGE SCHEDULE

Office Building Class "A" Handyperson (Over 280,000 square feet gross area)

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$24.77 -

Supplemental Benefit Rate per Hour: \$9.13

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$25.10

Supplemental Benefit Rate per Hour: \$9.51

Office Building Class "A" Foreperson, Starter (Over 280,000 square feet gross area)

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$24.66

Supplemental Benefit Rate per Hour: \$9.13

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$24.99

Supplemental Benefit Rate per Hour: \$9.51

Office Building Class "A" Cleaner/Porter, Elevator Operator, Exterminator, Fire Safety Director (Over 280,000 square feet gross area)

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$22.65

Supplemental Benefit Rate per Hour: \$9.13

Supplemental Note: for new employee 0-12 months of employment - \$6.64; for new employee 13-24 months of employment - \$8.81

Effective Period: 1/1/2013 - 6/30/2013

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.

Office Building Class "B" Handyperson (Over 120,000 and less than 280,000 square feet gross area)

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$24.74

Supplemental Benefit Rate per Hour: \$9.13

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

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$25.07
Supplemental Benefit Rate per Hour: \$9.51

Office Building Class "B" Foreperson, Starter (Over 120,000 and less than 280,000 square feet gross area)

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$24.63
Supplemental Benefit Rate per Hour: \$9.13

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$24.95
Supplemental Benefit Rate per Hour: \$9.51

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: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$22.62
Supplemental Benefit Rate per Hour: \$9.13
Supplemental Note: for new employee 0-12 months of employment - \$6.64; for new employee 13-24 months of employment - \$8.81

Effective Period: 1/1/2013 - 6/30/2013
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.

Office Building Class "C" Handyperson (Less than 120,000 square feet gross area)

Effective Period: 7/1/2012 - 12/31/2012
Wage Rate per Hour: \$24.70
Supplemental Benefit Rate per Hour: \$9.13

Effective Period: 1/1/2013 - 6/30/2013
Wage Rate per Hour: \$25.02
Supplemental Benefit Rate per Hour: \$9.51

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

Office Building Class "C" Foreperson, Starter (Less than 120,000 square feet gross area)

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$24.59**

Supplemental Benefit Rate per Hour: **\$9.13**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$24.91**

Supplemental Benefit Rate per Hour: **\$9.51**

Office Building Class "C" Cleaner/Porter, Elevator Operator, Exterminator, Fire Safety Director (Less than 120,000 square feet gross area)

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$22.57**

Supplemental Benefit Rate per Hour: **\$9.13**

Supplemental Note: for new employee 0-12 months of employment - \$6.64; for new employee 13-24 months of employment - \$8.81

Effective Period: 1/1/2013 - 6/30/2013

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.

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

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

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

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: 7/1/2012 – 4/20/2013

Wage Rate per Hour: **\$22.94**

Supplemental Benefit Rate per Hour: **\$8.68**

Supplemental Note: Effective 1/1/2013 - \$9.43

Effective Period: 4/21/2013 - 6/30/2013

Wage Rate per Hour: **\$23.57**

Supplemental Benefit Rate per Hour: **\$9.43**

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: 7/1/2012 - 4/20/2013

Wage Rate per Hour: **\$20.77**

Supplemental Benefit Rate per Hour: **\$8.68**

Supplemental Note: for new employee 0-12 months of employment - \$6.37; for new employee 13-24 months of employment - \$8.43

Effective 1/1/2013 - \$9.43; for new employee 0-12 months of employment - \$6.92; for new employee 13-24 months of employment - \$9.18

Effective Period: 4/21/2013 - 6/30/2013

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

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.

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: 7/1/2012 - 4/20/2013

Wage Rate per Hour: **\$22.88**

Supplemental Benefit Rate per Hour: **\$8.68**

Supplemental Note: Effective 1/1/2013 - \$9.43

Effective Period: 4/21/2013 - 6/30/2013

Wage Rate per Hour: **\$23.51**

Supplemental Benefit Rate per Hour: **\$9.43**

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.

Effective Period: 7/1/2012 - 4/20/2013

Wage Rate per Hour: **\$20.71**

Supplemental Benefit Rate per Hour: **\$8.68**

Supplemental Note: for new employee 0-12 months of employment - \$6.37; for new employee 13-24 months of employment - \$8.43

Effective 1/1/2013 - \$9.43; for new employee 0-12 months of employment - \$6.92; for new employee 13-24 months of employment - \$9.18

Effective Period: 4/21/2013 - 6/30/2013

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.

Residential Building Class "C" Handyperson

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

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: 7/1/2012 - 4/20/2013

Wage Rate per Hour: \$22.83

Supplemental Benefit Rate per Hour: \$8.68

Supplemental Note: Effective 1/1/2013 - \$9.43

Effective Period: 4/21/2013 - 6/30/2013

Wage Rate per Hour: \$23.45

Supplemental Benefit Rate per Hour: \$9.43

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: 7/1/2012 - 4/20/2013

Wage Rate per Hour: \$20.65

Supplemental Benefit Rate per Hour: \$8.68

Supplemental Note: for new employee 0-12 months of employment - \$6.37; for new employee 13-24 months of employment - \$8.43

Effective 1/1/2013 - \$9.43; for new employee 0-12 months of employment - \$6.92; for new employee 13-24 months of employment - \$9.18

Effective Period: 4/21/2013 - 6/30/2013

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.

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

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

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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$34.15**

Supplemental Benefit Rate per Hour: **\$15.44**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$35.18**

Supplemental Benefit Rate per Hour: **\$15.78**

Fireperson

Fireperson (Helper): Assists the Engineer

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$26.59**

Supplemental Benefit Rate per Hour: **\$15.09**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$27.39**

Supplemental Benefit Rate per Hour: **\$15.41**

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.

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

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)

Garage Cleaner

Effective Period: 7/1/2012 - 6/30/2013
Wage Rate per Hour: \$10.00
Supplemental Benefit Rate per Hour: \$1.50

Overtime

Time and one half the regular rate after an 8 hour day or after 40 hours in any work week.

(NYC Administrative Code §6-109)

FUEL OIL

Fuel Oil, Coal, Fuel Gas, Petroleum Product Chauffeur (5th Year and above)

Effective Period: 7/1/2012 - 12/15/2012
Wage Rate per Hour: \$30.11
Supplemental Benefit Rate per Hour: \$18.80

Effective Period: 12/16/2012 - 6/30/2013

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

Wage Rate per Hour: **\$30.61**
Supplemental Benefit Rate per Hour: **\$19.80**
Supplemental Note: Effective 1/1/2013 - \$20.42

Fuel Oil, Coal, Fuel Gas, Petroleum Product Chauffeur (4th Year)

Effective Period: 7/1/2012 - 12/15/2012
Wage Rate per Hour: **\$27.50**
Supplemental Benefit Rate per Hour: **\$18.80**

Effective Period: 12/16/2012 - 6/30/2013
Wage Rate per Hour: **\$28.00**
Supplemental Benefit Rate per Hour: **\$19.80**
Supplemental Note: Effective 1/1/2013 - \$20.42

Fuel Oil, Coal, Fuel Gas, Petroleum Product Chauffeur (3rd Year)

Effective Period: 7/1/2012 - 12/15/2012
Wage Rate per Hour: **\$25.50**
Supplemental Benefit Rate per Hour: **\$18.80**

Effective Period: 12/16/2012 - 6/30/2013
Wage Rate per Hour: **\$26.00**
Supplemental Benefit Rate per Hour: **\$19.80**
Supplemental Note: Effective 1/1/2013 - \$20.42

Fuel Oil, Coal, Fuel Gas, Petroleum Product Chauffeur (2nd Year)

Effective Period: 7/1/2012 - 12/15/2012
Wage Rate per Hour: **\$23.50**
Supplemental Benefit Rate per Hour: **\$18.80**

Effective Period: 12/16/2012 - 6/30/2013
Wage Rate per Hour: **\$24.00**
Supplemental Benefit Rate per Hour: **\$19.80**
Supplemental Note: Effective 1/1/2013 - \$20.42

Fuel Oil, Coal, Fuel Gas, Petroleum Product Chauffeur (1st Year)

Effective Period: 7/1/2012 - 12/15/2012
Wage Rate per Hour: **\$21.50**
Supplemental Benefit Rate per Hour: **\$18.80**

Effective Period: 12/16/2012 - 6/30/2013
Wage Rate per Hour: **\$22.00**
Supplemental Benefit Rate per Hour: **\$19.80**
Supplemental Note: Effective 1/1/2013 - \$20.42

Overtime

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

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

Effective Period: 7/1/2012 - 6/30/2013

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

Wage Rate per Hour: **\$17.04**

Supplemental Benefit Rate per Hour: **\$1.72**

Overtime

Time and one half the regular rate after an 8 hour day or 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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$21.46**

Supplemental Benefit Rate per Hour: **\$5.89**

Overtime

Time and one half the regular rate after an 8 hour day or 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: 7/1/2012 - 3/31/2013

Wage Rate per Hour: **\$17.75**

Supplemental Benefit Rate per Hour: **\$8.79**

Effective Period: 4/1/2013 - 6/30/2013

Wage Rate per Hour: **\$18.00**

Supplemental Benefit Rate per Hour: **\$9.34**

Helper

Effective Period: 7/1/2012 - 3/31/2013

Wage Rate per Hour: **\$14.00**

Supplemental Benefit Rate per Hour: **\$8.79**

Effective Period: 4/1/2013 - 6/30/2013

Wage Rate per Hour: **\$14.25**

Supplemental Benefit Rate per Hour: **\$9.34**

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

Tractor Trailer Driver

Effective Period: 7/1/2012 - 3/31/2013

Wage Rate per Hour: **\$20.25**

Supplemental Benefit Rate per Hour: **\$8.79**

Effective Period: 4/1/2013 - 6/30/2013

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

- Presidents' Day
- Memorial Day
- Independence Day
- Labor Day
- Thanksgiving Day
- Christmas Day

Vacation

1 year of service but less than five years.....	10 days
5 years of service but less than ten years.....	15 days
10 years of service.....	16 days
11 years.....	17 days
12 years.....	18 days
13 years.....	19 days
14 years.....	20 days
20 years.....	21 days
21 years.....	22 days
22 years.....	23 days
23 years.....	24 days
24 years.....	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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: **\$23.11**

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

Supplemental Benefit Rate per Hour: \$4.10

Light Truck Driver

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$18.08

Supplemental Benefit Rate per Hour: \$4.10

Laborer and Freight, Stock, and Material Movers, Hand

Effective Period: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$17.68

Supplemental Benefit Rate per Hour: \$4.10

Overtime

Time and one half the regular rate after an 8 hour day or 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: 7/1/2012 - 6/30/2013

Wage Rate per Hour: \$27.62

Supplemental Benefit Rate per Hour: \$4.10

Overtime

Time and one half the regular rate after an 8 hour day or 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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$27.75

Supplemental Benefit Rate per Hour: \$4.73

Supplemental Note: for new employee 0-30 days of employment - \$4.09; for new employee 31-120 days of employment - \$4.26; for new employee 121 days - 2 years of employment - \$4.37

Effective Period: 1/1/2013 - 6/30/2013

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

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

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

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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$12.60**

Supplemental Benefit Rate per Hour: **\$4.37**

Supplemental Note: for new employee 0-30 days of employment - \$4.09; for new employee 31-120 days of employment - \$4.26

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

Effective Period: 1/1/2013 - 6/30/2013

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

Security Guard (Unarmed) 7 - 12 months

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$13.10

Supplemental Benefit Rate per Hour: \$4.37

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$13.35

Supplemental Benefit Rate per Hour: \$4.54

Security Guard (Unarmed) 13 - 18 months

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$13.60

Supplemental Benefit Rate per Hour: \$4.37

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$13.85

Supplemental Benefit Rate per Hour: \$4.54

Security Guard (Unarmed) 19 - 24 months

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$14.10

Supplemental Benefit Rate per Hour: \$4.37

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$14.35

Supplemental Benefit Rate per Hour: \$4.54

Security Guard (Unarmed) 25 - 30 months

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$14.60

Supplemental Benefit Rate per Hour: \$4.73

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$14.85

Supplemental Benefit Rate per Hour: \$4.90

Security Guard (Unarmed) 31 months or more

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$14.75

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

Supplemental Benefit Rate per Hour: \$4.73

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: \$15.15

Supplemental Benefit Rate per Hour: \$4.90

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

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: 7/1/2012 - 12/31/2012

Wage Rate per Hour: \$26.12

Supplemental Benefit Rate per Hour: \$9.13

Effective Period: 1/1/2013 - 6/30/2013

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

Wage Rate per Hour: **\$26.44**

Supplemental Benefit Rate per Hour: **\$9.51**

Power Operated Scaffolds, Manual Scaffolds, and Boatswain Chairs

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$28.37**

Supplemental Benefit Rate per Hour: **\$9.13**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$28.69**

Supplemental Benefit Rate per Hour: **\$9.51**

Window Cleaner Apprentice (0 - 3 months)

Employee must be a registered apprentice with the New York State Department of Labor

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$19.35**

Supplemental Benefit Rate per Hour: **\$0.00**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$19.59**

Supplemental Benefit Rate per Hour: **\$0.00**

Window Cleaner Apprentice (4 - 7 months)

Employee must be a registered apprentice with the New York State Department of Labor

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$20.92**

Supplemental Benefit Rate per Hour: **\$9.13**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$21.18**

Supplemental Benefit Rate per Hour: **\$9.51**

Window Cleaner Apprentice (8 - 11 months)

Employee must be a registered apprentice with the New York State Department of Labor

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$22.17**

Supplemental Benefit Rate per Hour: **\$9.13**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$22.44**

Supplemental Benefit Rate per Hour: **\$9.51**

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

Window Cleaner Apprentice (12 - 15 months)

Employee must be a registered apprentice with the New York State Department of Labor

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$23.43**

Supplemental Benefit Rate per Hour: **\$9.13**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$23.72**

Supplemental Benefit Rate per Hour: **\$9.51**

Window Cleaner Apprentice (16 - 17 months)

Employee must be a registered apprentice with the New York State Department of Labor

Effective Period: 7/1/2012 - 12/31/2012

Wage Rate per Hour: **\$24.70**

Supplemental Benefit Rate per Hour: **\$9.13**

Effective Period: 1/1/2013 - 6/30/2013

Wage Rate per Hour: **\$25.01**

Supplemental Benefit Rate per Hour: **\$9.51**

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 Birthday

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.....5 days

1 year but less than 5 years of service.....10 days

5 years of service but less than 15 years of service.....15 days

15 years of service but less than 21 years of service.....20 days

21 years.....21 days

22 years.....22 days

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

23 years.....23 days
24 years.....24 days
25 years or more of service.....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.

(Local #32 B/J)

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SECTION 01000

GENERAL CONDITIONS

APPLICABLE TO ALL CONTRACTS

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The ADDENDUM TO THE GENERAL CONDITIONS is contained in Volume 3 of the Contract Documents. Volume 3 contains the following:

- Addendum to the General Conditions
- Specifications

SECTION 01000 GENERAL CONDITIONS

PART 1 - GENERAL

1.01 Applicability of General Conditions

- A. Since there are several separate Contracts pertaining to the construction of this project, for convenience, the General Conditions are stated only once. These General Conditions are applicable to all Contracts and shall constitute an integral part of each separate Contract to the same extent as though they were repeated in full therein.
- B. The Contractor is advised that various sections of these General Conditions are amended by the Addendum to the General Conditions. This Addendum also includes various schedules referred to in these General Conditions (Schedules A through F). These schedules contain important information that is specific to this project. The Addendum, including Schedules A through F, is set forth in Volume 3 of the Contract Documents.
- C. Throughout these General Conditions, various responsibilities and obligations are assigned to each of the following four Contractors: (1) General Construction, (2) Plumbing, (3) Heating/Ventilating/Air-Conditioning/Fire Protection, and (4) Electrical. In the event the Project does not involve all four Contracts, the responsibilities and obligations of each omitted Contract shall be assigned to one of the Contracts which is included in the Project. The Addendum to the General Conditions specifies which Contractor shall perform the responsibilities and obligations of each omitted contract, as set forth in the General Conditions.

1.02 Scope and Intent

- A. DESCRIPTION OF PROJECT - Refer to the Addendum to the General Conditions for a description of this project.
- B. PROGRESS SCHEDULE
 - 1. Within 15 days after the Notice to Proceed, the Contractor for General Construction Work shall prepare a composite Job Progress Chart that shall indicate graphically and chronologically the time the various parts of the work of all Contracts shall commence and be completed. The Chart shall be in a reproducible form approved by the Commissioner.
 - 2. Immediately after the Notice to Proceed of their Contracts, the Contractors for Plumbing Work, Heating, Ventilating and Air Conditioning Work (HVAC) and Electrical Work, as applicable, shall furnish all necessary data to the Contractor for General Construction Work, and cooperate in all respects in connection with formulation of the Chart.
 - 3. The Chart shall show the sequence and interrelationship of each operation of all the Contracts.
 - 4. The Chart shall show the estimated time for fabrication and/or delivery of all materials and equipment required for the work.
 - 5. As directed by the Resident Engineer, the Contractors shall meet with each other and with the Resident Engineer to review and make the necessary adjustments to the composite Job Progress Chart, and to coordinate the work indicated thereon. (Article 12 of the Contract).
 - 6. When completed, the Job Progress Chart shall be signed and dated by each Contractor or their official representative. The Resident Engineer is authorized to sign the Chart for the Department of Design and Construction. Thereafter, the Chart shall be modified only with the Commissioner's approval. When directed by the Commissioner, the Chart shall be revised and updated. If necessary, a new revised Chart shall be prepared in the same manner as outlined above for the original Chart.

7. The approved Chart shall be distributed by the Contractor for General Construction Work, as follows: the original and two (2) copies to the Resident Engineer, two (2) copies to each Contractor, and two (2) copies to the Department of Design and Construction
 8. All Contractors shall consult the approved Progress Chart and install their work within the time limits indicated on the Chart.
 9. The Resident Engineer shall post in a prominent place in the field office a copy of the Chart and mark thereon the progress of the work, including the times when various parts of the work commenced and were completed.
- C. **COMPLETION OF WORK** - Work to be done under each separate Contract comprises the furnishing of all labor, materials, equipment and other appurtenances and obtaining of all regulatory agency approvals necessary and required to complete the construction work in accordance with the Contract.
 - D. **OMISSION OF DETAILS** - All work called for in the Specifications applicable to each separate 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. Such work is deemed included in the Bid Price.
 - E. **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. Such work is deemed included in the Bid Price.
 - F. **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.
 - G. **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 on 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.
 - H. **COOPERATION BETWEEN CONTRACTORS** - Inasmuch as the completion of the project within the prescribed limit of time is dependent largely upon the close and active cooperation of all those engaged therein, it is therefore expressly understood and agreed that the Contractor shall lay out and install all work at such time or times and in such manner as not to delay or interfere with the carrying forward of the work of other Contractors. In the event of any dispute arising as to possible or alleged interference between the various Contractors which may retard the progress of the work, the dispute shall be adjudicated by the Commissioner, whose decision as to the party or parties at fault and as to the manner in which the matter may be adjudicated, shall be binding and conclusive on all parties.
 - I. **"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.
 - J. **"APPROVED," ETC.** - "Approved," "acceptable," "satisfactory," and words of similar import shall mean and intend approved, acceptable or satisfactory to the Commissioner.
 - K. **CONFLICTS OF INTERESTS** - The Charter of the City of New York, Section 2604, provides a number of safeguards in relation to conflicts of interest. Such safeguards include, without limitation, the following: "No public servant shall receive compensation except from the City for performing any official duty or accept or receive any gratuity from any person whose interest may be affected by the

public servant's official action."

1. Other sections of the City Charter, the Administrative Code and the Penal Law are applicable in implementing the basic Conflicts of Interest Section and under certain circumstances penalties may be invoked against the donor as well as the recipient of any form of valuable gift.
2. Notice is hereby given that sections of the City Charter, the Administrative Code and the Penal Law alluded to herein shall apply under the terms of this Contract to circumstances relevant to conflicts of interest and shall be extended in application to subcontractors authorized to perform work, labor and services pursuant to this Contract and further, it shall be the duty and responsibility of the Contractors to so inform their respective subcontractors.

1.03 Provisions Referenced in the Contract

- 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 to the General Conditions, sets forth 1) the referenced Articles of the Contract, and 2) the specific requirements applicable to each respective Contract.
- B. 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 therefor.
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 and Specifications, the Contractor shall remove and replace, at Contractor's own cost, such defective or improperly incorporated material with materials complying with the Contract and Specifications. 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 therefor 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. **EXCISE AND TRANSPORTATION TAXES-** Pursuant to Section 6 of the "Information for Bidders", the Contractor may be exempted from the payment of Federal Excise and Transportation Taxes in accord with the following:

1. Excise Tax Exemption Certificate will be certified by the Department of Design and Construction where requested by the Contractor, for items which fall within the scope of the Contract and which may be exempt from Federal Excise Tax.
2. **TRANSPORTATION TAX** - The 3% Federal Tax has been repealed and is hereby deleted from the Contract. The 10% Federal Tax for travel remains in effect.

E. **CORRESPONDENCE** - There shall be six (6) copies of all letters of correspondence to the Department of Design and Construction. An additional copy of all correspondence shall be sent directly to the Resident Engineer at the job site.

F. **MOBILIZATION PAYMENT** - A line item for mobilization shall be allowed on the Contractor's Detailed Estimate 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 Estimate 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	= \$	6,000
\$	100,001 - \$ 500,000	x 6 = \$	6,000 (min) - \$ 30,000 (max)

\$ 500,001 - \$ 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.

1.04 Contract Drawings

- A. SCHEDULE C - The Contract Drawings are listed in Schedule C, which is set forth in the Addendum to the General Conditions. Such drawings referred to in the Contract, and in the applicable Specifications for the various Contracts bear the general title:

City of New York
Department of Design and Construction
Division of Structures

- B. DOCUMENTS FURNISHED TO THE CONTRACTOR - After the award of the Contract, the Contractor for General Construction Work will be furnished with five (5) sets of paper prints of all Contract Drawings mentioned in Paragraph A above.
- C. PRINTS (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

Each Contractor, other than the Contractor for General Construction Work referred to in Paragraph B, will receive two (2) sets of paper prints of all Drawings listed in Paragraph A and three (3) sets of paper prints of all Contract Drawings applying directly to each Contractor's own Contract.

- D. Each Contractor will receive nine (9) complete sets of Specifications.
- E. ADDITIONAL COPIES of Drawings and Specifications, when requested, will be furnished to the Contractor if available.
- F. COORDINATION AND COOPERATION - Since the Contracts are all related to the project, the Contractor shall consult and study the requirement of the Contract Drawings and Specifications of all Contracts furnished to the Contractor, 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.
- G. 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.
- H. COMPENSATION - Where Supplementary Drawings entail extra work, compensation therefor 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.

- I. SUPPLEMENTARY DRAWING PRINTS - Three (3) copies of prints of these Supplementary Drawings will be furnished to the Contractor.
- J. 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.
- K. 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.

1.05 Shop Drawings and Record Drawings

A. SHOP DRAWINGS

- 1. SUBMISSION OF SHOP DRAWINGS - For instructions relative to Shop Drawings involving electrical or mechanical work or equipment of any nature called for in any Contract, see the General Electrical Requirements and the General Mechanical Requirements.
- 2. SHOP DRAWINGS - The Contractor shall promptly prepare and submit layout detail and Shop Drawings of such parts of the work as are indicated in the Specifications 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 preferably be on sheets of the same size as the Contract Drawings, 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 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 thicknesses and finishes.
 - e. All other information 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 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.

NOTE: In addition to the above requirements, the Shop Drawings shall bear a stamp having the following wording:

FIELD MEASUREMENTS - The Contractor certifies that it has verified and supplemented the Contract Drawings by taking all required field measurements, that said measurements correctly reflect all field conditions and that this Shop Drawing incorporates said measurements.

6. THE SUBMISSION OF SHOP DRAWINGS - The Shop Drawings shall be accompanied by a letter of transmittal, in triplicate, containing the name of the Project, the name of the Contractor, the number of Drawings, titles and any other requirements. Re-submission of the same drawings shall bear the original number of the drawings and the original titles.
7. PRELIMINARY SUBMISSION - The Contractor shall submit one (1) set of sepia Shop Drawings to the Consultant Architect/Engineer for their approval. A satisfactory Shop Drawing will be stamped "Approved", be dated and one (1) copy thereof will be returned to the Contractor by letter. Should the Shop Drawing not be approved by the Consultant Architect/Engineer, the Commissioner will return the sepia Shop Drawings with the necessary corrections and changes to be made as indicated thereon.
8. REVISIONS - The Contractor must make such corrections and changes and again submit one (1) set of sepia drawings for the approval of the Consultant Architect/Engineer. The Contractor shall revise and resubmit the Shop Drawing as required by the Consultant Architect/Engineer until approval thereof is obtained. However, Shop Drawings which have been stamped "Approved As Noted" shall be considered an "Approved" Shop Drawing and NEED NOT be revised and resubmitted.

No work called for by the Shop Drawings shall be done until the approval of the said drawings by the Consultant Architect/Engineer is given. In addition to the foregoing Shop Drawing transmissions, a copy of any Shop Drawing prepared by any of the Contractors which Shop Drawing indicated work related to, adjacent to, impinging upon, or affecting work to be done by other Contractors, shall be transmitted to the Contractors so affected. These approved Shop Drawings shall be delivered to the Resident Engineer for distribution to the affected Contractors at the job meetings and shall be so recorded in the minutes.

9. FINAL SUBMISSION - When approval of any Shop Drawing is obtained by the Contractor, it shall insert the date of the approval of the drawing and promptly furnish the Consultant Architect/Engineer with eight (8) additional prints of the approved Drawings. No work called for by the Shop Drawings shall be performed until the approval of the said drawings by the Commissioner is given. In addition to the foregoing Shop Drawing transmissions, a copy of any Shop Drawing prepared by any of the Contractors which indicates work related to, adjacent to, impinging upon, or affecting work to be done by other Contractors, shall be transmitted to the Contractors so affected. These approved Shop Drawings shall be delivered to the Resident Engineer for distribution to the affected Contractors at the job meetings and shall be so recorded in the minutes.
10. 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. Approval of the Shop Drawings shall constitute approval of the subject matter thereof only and not of any structural apparatus shown or indicated.
11. CATALOGUE CUTS - Except as otherwise prescribed herein, the submission of catalogue cuts shall conform to the procedures specified for Shop Drawings.
 - a. PRELIMINARY SUBMISSION - The Contractor shall submit three (3) sets of catalogue cuts to the Consultant Architect/Engineer to approve. A satisfactory catalogue cut will be stamped

"Approved", be dated and one (1) copy thereof will be returned to the Contractor by letter. Should the catalogue cut not be approved by the Commissioner, the Commissioner will return one (1) set of such catalogue cuts with the necessary corrections and changes to be made indicated thereon.

- b. REVISIONS - The Contractor shall make such corrections and changes and again submit four (4) sets of the catalogue cuts, in duplicate, for the approval of the Commissioner. The Contractor shall revise and resubmit the catalogue cuts as required by the Consultant Architect/Engineer until approval thereof is obtained.

However, catalogue cuts which have been stamped "Approved As Noted" shall be considered an "Approved" catalogue cut and need not be revised and resubmitted.

- c. FINAL SUBMISSION - When approval of any catalogue cut is obtained by the Contractor, it shall insert the date of the approval and promptly furnish the Consultant Architect/Engineer with four (4) additional sets of the approved catalogue cuts.
12. RESPONSIBILITY OF 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.
13. SHOP DRAWINGS AND MATERIAL SAMPLES SCHEDULE - The Shop Drawings and Material Samples Schedule is set forth in Schedule F, which is included in the Addendum to the General Conditions. Completion of this Schedule shall be in accordance with Article 1.41 (A) of these General Conditions.
14. PROCEDURE FOR PREPARING, FORWARDING, CHECKING AND RETURN - of all Shop Drawings shall be, generally, as follows:

The Contractor shall make available to its subcontractors the necessary Contract Documents and have them determine dimensions and conditions in the field, particularly with reference to coordination with other trades or work under other Contractors. The Contractor shall direct its subcontractors to prepare Shop Drawings for submission to the Consultant Architect/Engineer 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:

- a. Review and be responsible to the Commissioner, or the Commissioner's authorized representative, for information shown on subcontractor's Shop and Installation drawings and manufacturers' date, and also for conformity to Contract Documents.
- b. "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.
- c. Clearly designate which trade 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 Consultant Architect/Engineer.
- d. Stamp submissions "Recommended for Approval", date and forward to the Commissioner or the Commissioner's authorized representative.

In order to expedite Shop Drawing procedures, the Contractor shall write a Shop Drawing status letter directly to the Consultant Architect/Engineer, each week, containing the following subject matter:

- (1) A list of all Shop Drawings which have been sent to but not returned by the Architect or Engineer giving name of the subcontractor, drawing number, title and date of submission.
- (2) An indication of the desired priority of the return, if necessary.

NOTE: The status letter shall be prepared and sent at a given time each week, preferably Friday afternoon, to enable the Consultant Architect/Engineer to receive the letter on Monday morning. This procedure shall be maintained throughout the active Shop Drawing period of construction.

B. INTEGRATED DRAWINGS (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

1. The Contractor for General Construction Work shall provide to the Contractor for Heating, Ventilating and Air Conditioning Work reflected ceiling starting points or plans, beam soffit elevations, ceiling heights, roof openings, etc.
2. The Contractor for Heating, Ventilating and Air Conditioning Work shall prepare a drawing or drawings showing ductwork, heating and sprinkler piping. This drawing shall include location of grilles, registers, etc. and access doors in hung ceilings. Locations shall be fixed by elevations and dimensions from column center lines and/or walls.
3. The Contractor for Heating, Ventilating and Air Conditioning Work shall prepare and distribute to each of the other Contractors, the Resident Engineer and to the Consultant Architect a sepia of the above.
4. The Contractor for General Construction Work shall lay out on its sepia, the reflected ceiling plan, beam soffit elevations, ceiling heights, roof openings, etc.
5. The Contractor for Plumbing Work shall lay out its piping, valves, cleanouts, etc., indicating locations and elevations and shall indicate the necessary access doors.
6. The Contractor for Electrical Work shall indicate its fixtures, large conduit runs, clearances, pull boxes, junction boxes, sound system speakers, etc.
7. The Resident Engineer will call as many meetings with the Contractors as are necessary to resolve any conflicts that become apparent. The Resident Engineer will call on the services of the Consultant Engineer or Architect where necessary. The Resident Engineer is responsible for the coordination of the Contract Drawings.
8. Upon resolution of the conflicts, each Contractor shall enter its own work on the Resident Engineer's sepia, which will become the Master or Integrated Drawing. The Master Sepia shall be signed by each Contractor to indicate its acceptance of the arrangement of the work.
9. A reproducible copy of the Master Integrated Drawing or Drawings will be prepared and distributed by the Contractor for Heating, Ventilating and Air Conditioning Work to each Contractor and to the Consultant Architect for information.
10. Each Contractor shall prepare its Shop Drawings in accordance with the Integrated Drawings. No work will be permitted without approved Shop Drawings. It is therefore essential that this procedure be instituted as quickly as possible.
11. Contractors shall be held strictly accountable for cooperation in preparing the Integrated Drawing or Drawings.

C. RECORD DRAWINGS

1. The Department of Design and Construction, at the start of construction (kick-off meeting), will furnish to each Contractor at no cost a complete set of Contract Document mylars pertaining to the work to be performed under its Contract. It is the responsibility of each 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 drawings if necessary such as Addenda Drawings and Supplementary Drawings as may be necessary to indicate all work in detail as actually completed.

NOTE TO CONTRACTOR: All professional seals must be blocked out. Title box complete with project title and Consultants' names will remain.

2. Each Contractor shall maintain, during the progress of the work, an accurate record of the work as actually installed, on Record Drawings, on mylar, in ink. These Record Drawings shall be made available to the Resident Engineer upon request.

The Contractor's attention is particularly directed to the necessity of keeping accurate records of all subsurface and concealed work, so that the Record Drawings may contain this information in exact detail and location. Record Drawings should also show all connections, valves, gates, switches, cut-outs and similar operating equipment.

Before substantial completion payment, each Contractor shall furnish to the Commissioner one (1) complete set of mylar 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 sponsoring agency by Department of Design and Construction.

3. 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.
4. Each Record Drawing shall bear the legend "RECORD DRAWING" in heavy block lettering, one half (1/2) inch high, and contain the following data:

RECORD DRAWING

Contractor's Name _____

Contractor'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 - Each Contractor shall prepare a title sheet, the same size as Record Drawings, which shall contain the following:
 - a. Heading:
The City of New York
Department of Design and Construction
Division of Structures
 - b. Capital Budget Project Number (CAPIS ID)

- c. Name and Location of Project
 - d. Contractor's Name and Address
 - e. Record of changes (a caption description of work affected, and the date and number of Change Order or other authorization)
 - f. List of Record Drawings
6. 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.
7. **BULLETINS, OPERATING AND SERVICE MANUALS** - Where the Contractor has submitted prints in the form of technical bulletins, operating and service manuals, or other printed matter as a Shop Drawing, having diagrams or drawings thereon of a material or equipment installed in the work, the Contractor shall furnish three (3) sets thereof so that the Commissioner may have all the necessary information for the proper operation maintenance and repair of the material and equipment and the ordering of spare parts. All bulletins and operating and service manuals shall be compiled and indexed in book form for each Contract.

1.06 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 Building Code of the City of New York, 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.
- C. **REPUTE OF MANUFACTURER** - No manufacturer will be approved for any materials to be furnished under the Contract unless it shall be of good reputation, shall have a plant of ample capacity and shall have successfully produced similar products. All required approvals for legal use of materials and equipment such as B.S.A. and M.E.A. must be obtained prior to installation.
- D. **ALL MATERIALS** - fixtures, fittings, supplies and equipment furnished under the Contract shall be new and unused, except as approved by the Agency, 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.
- E. **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.
- F. **STANDARD REFERENCES** - Whenever reference is made to the furnishing of materials or testing thereof to conform to the standards of any technical society, organization or body, it shall be construed to mean the latest standard, code, specification or tentative specification adopted and published at the date of advertisement for bids, even though reference has been made to an earlier standard.
- G. **REFERENCES** - Reference to a technical society, organization or body may be made in the Specifications by abbreviations in accordance with the following list:

A.I.A. for American Institute of Architects

A.C.I.	for American Concrete Institute
A.G.A.	for American Gas Association
A.G.M.A.	for American Gear Manufacturer Association
A.I.E.E.	for American Institute of Electrical Engineers
A.I.S.C.	for American Institute of Steel Construction
A.S.A.	for American Standards Association
A.S.T.M.	for American Society for Testing Materials
A.W.S.C.	for American Welding Society Code
A.W.W.A.	for American Water Works Association
B.S. & A.	for New York City Board of Standards & Appeals
C.I.P.R.A.	for Cast Iron Pipe Research Association
B.G. & E.	for Bureau of Gas & Electricity of the City of New York
FED. SPEC.	for Federal Specification
I.P.C.E.A.	for Insulated Power Cable Engineer's Association
NAVY SPEC.	for Navy Department Specification
N.E.C.	for National Electric Code
N.E.M.A.	for National Electrical Manufacturers Association
N.Y.B.C.	for New York City Building Code
N.Y.E.C.	for New York City Electrical Code
N.Y. SPEC.	for New York City Department of Purchase Specification
P.P.S.	for Power Piping Society
S.A.E.	for Society of Automotive Engineers Standards
S.H.B.I.	for Steel Heating Boiler Institute

H. **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.

I. **SAMPLES OF MATERIALS** - The Contractor shall submit to the Commissioner for approval, samples of all materials specified to be used in the project.

1. For samples of materials involving electrical work of any nature, see the 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. However, in addition thereto, after approval, three (3) additional samples showing the material, color and texture of all interior finishes, including the finishes of exposed built-in equipment, trim, glazing, fittings and fixtures, etc., shall also be furnished. The sizes of these additional samples shall be as directed by and acceptable to the Commissioner.
3. Each of the samples shall be labeled, bearing the name and quality of the material, the Contractor's name, date, Contract and project, and the related Specification or Contract Drawing reference to the samples submitted.
4. A letter of transmittal, in triplicate, from the Contractor requesting approval must accompany all such samples.
5. Transportation charges to the Commissioner's office must be prepared on all samples forwarded.
6. Samples for testing purposes shall be as required in the Specifications.

J. **SAMPLES ON DISPLAY** - When samples are specified to be equal to samples in the office of the Commissioner, they shall be carefully examined by the bidders and by those whom the bidder expects to employ for the furnishing of such materials.

K. **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 approval is received, in writing, from the Commissioner. All materials shall be furnished equal in every respect to the approved samples.

- L. THE APPROVAL 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 Commissioner, 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 Commissioner, for the project.
- M. ACCEPTIBILITY OF TEST DATA - The Commissioner will be the final judge as to acceptability of laboratory test data and performance in service of materials submitted.
- N. 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.
- O. EQUIVALENT QUALITY OF MATERIALS - All materials and equipment which are designated in the Specifications by a number in the catalogue of any manufacturer or by a manufacturer's grade or trade name, are designated for the purpose of describing the article and fixing the standard or the quality and finish. Materials and equipment, which are, in the opinion of the Commissioner, the equivalent to that specified, will be acceptable.
- P. The submission of any material, or article, as the equal of the materials or articles set forth in the Specifications as a standard shall be accompanied by illustrations, drawings, descriptions, catalogues, records of tests, samples and any and all other information essential for judging the equality to the materials, finish and durability of that specified as standard, as well as information indicating satisfactory use under similar operating conditions.
- Q. 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.
- R. COMMISSIONER TO SELECT INSPECTORS - Except as specifically provided in the Specifications, the Commissioner will select and designate all persons, firms, or corporations to make or witness each and every inspection, test or analyses, with or without reports.
- S. 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.
- T. NO SHIPPING BEFORE INSPECTION - The Contractor shall comply with the foregoing before shipping any material.
- U. 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.

- V. **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.
- W. **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.
- X. **REPORTS** - Six (6) copies of the reports shall be submitted and authoritative certification thereof must be furnished to the Commissioner as prerequisite for the acceptance of any material or equipment.
- Y. **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 without cost to the City.
- Z. **FURNISH DESIGNATED MATERIAL** - 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.
- AA. **COST OF TESTS BORNE BY CITY** - Where the City directs test 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.
- BB. **COST OF TESTS BORNE BY CONTRACTOR** - Where tests are specifically called for in the Specifications to be made by the Contractor, the cost thereof shall be borne by the Contractor and shall be deemed to be included in the Contract price. The expenses of the testing personnel assigned by the City shall not be the Contractor's obligation. The Contractor shall reimburse the City for expenditures incurred in the making of tests on materials and equipment submitted by the Contractor as the equivalent of that specifically named in the Specifications and rejected for non-compliance.

1.07 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. **THE CONTRACTOR SHALL COORDINATE DELIVERIES** - in order to avoid delaying or impeding the progress of the work of any related Contractor.
- E. **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.
- F. **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.
- G. **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 other Contractor, the relevant Contractor shall remove and restack such materials at no additional cost to the City.

1.08 Temporary Structures

- A. **FIELD OFFICE FOR CONTRACTOR** - 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 each 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. **TELEPHONE ARRANGEMENTS** - Arrangements shall be made by the Contractor whereby its representative may be readily accessible by telephone.
- E. **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.
- F. **SUBSTANTIAL CONSTRUCTION** - All temporary structures shall be of substantial construction and neat appearance, and shall be painted a uniform gray unless otherwise directed by the Commissioner.
- 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.
- H. **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.

1.09 Surveys (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

- 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** - Each 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 MARKS** - 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 for General Construction Work 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 for General Construction Work shall establish the permanent lines of exterior walls. Such 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 for General Construction Work 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 licensed Surveyor 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 for General Construction Work shall submit to the Department of Design and Construction 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.

1.10 Contractor's Superintendent

- A. **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 Superintendent competent and capable of maintaining proper supervision and care of the work and acceptable to the Commissioner, who, 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 Superintendent on the job shall not be changed or removed without the consent of the Commissioner.

1.11 Permits

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.

1.12 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.

1.13 Sleeves And Hangers (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

- A. COORDINATE TO PROGRESS SCHEDULE - Contractors required to furnish and install conduits, outlets, piping sleeves, boxes, inserts and all other materials and equipment necessary to be built into the work to be performed by the Contractor for General Construction Work, shall promptly furnish and set such sleeves or other materials in conformity with the requirements of the project.
- B. COOPERATION OF CONTRACTORS - All Contractors 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 affected 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 for General Construction Work 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 or Contractors responsible therefore.
- D. INSERTS - The Contractor for General Construction Work is to install strip inserts four (4) foot on center and perpendicular to beams in ceiling slabs of boiler, machine and mechanical equipment rooms. Inserts are to be installed for strippable concrete slabs only.

1.14 Cutting And Patching

- A. RESPONSIBILITY - Each Contractor shall do all cutting, patching and restoration required by its work, unless otherwise particularly specified in the Specifications of its Contract.
- B. RESTORE WORK - Each Contractor shall restore any work they damage that is the work of another Contractor.
- 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. REMOVALS - Each 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 article on REMOVAL OF RUBBISH AND SURPLUS MATERIALS.

1.15 Temporary Heat (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

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 Paragraph (c) below.
 - 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 Firewatch 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 responsible for the provision of Temporary Heat, and 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 Paragraph (b) below, each Contractor shall be responsible for the provision of its own Temporary Heat.
 - (2) Post Enclosure - Once the Commissioner determines that the building, or any portion thereof, has been enclosed, as set forth in Paragraph B below, the Contractor for Heating, Ventilating and Air Conditioning Work ("HVAC Work") 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). The Contractor for HVAC Work 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 for HVAC Work 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 for HVAC Work provided for herein is subject to the exception set forth in Paragraph H.3.b.(2) below.
 - 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 for HVAC Work shall be responsible for the provision of Temporary Heat, except as otherwise provided in Paragraph H.3.b.(2) below.

- (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 Paragraph H.3.b.(1) below, determines that the provision of Temporary Heat is necessary due to special and/or unforeseen circumstances, the Contractor for HVAC Work shall be responsible for the provision of Temporary Heat and such Contractor shall be paid for the same in accordance with Paragraph H.3.b.(1).

B. ENCLOSURE OF STRUCTURES

1. Notification - The Contractor for General Construction Work shall notify all other Contractors 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 Paragraph A above, once the building has been enclosed, the Contractor for HVAC Work 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 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 for General Construction Work, and such work shall be deemed included in the Contractor for General Construction Work's bid 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 for HVAC Work shall be required to provide Temporary Heat 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 Contractor for HVAC Work 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 for HVAC Work shall include in its Total Bid 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 General Conditions. 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 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.
3. No open fires will be permitted.
4. Electric heating will not be permitted unless required by Contract Documents and Specifications or otherwise approved by the Commissioner.
5. Direct-fired equipment will be allowed in construction areas where the use of such equipment will not damage or deteriorate the construction or finishes or be harmful to persons working in the area.

F. TEMPORARY HEATING SYSTEM

1. The temporary system for the provision of Temporary Heat provided by the Contractor for HVAC

Work following enclosure of the building shall be complete including, but not limited to, torpedo blowers and/or propane heaters subject to provisions of paragraph E above), boilers and fuel storage, pumps, radiators, unit 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. THE CONTRACTOR FOR GENERAL CONSTRUCTION WORK

1. The Contractor for General Construction Work shall coordinate with the Contractor for HVAC Work in the work of providing Temporary Heat, and shall so coordinate its operations as to insure sufficient and timely performance of the work under all Contracts. The Contractor for General Construction Work 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 for General Construction Work shall include all expenses in connection with the supply of water for Temporary Heat in its Total Bid Price. During the period in which Temporary Heat in an enclosed building is being furnished and maintained by the Contractor for HVAC Work, the Contractor for General Construction Work shall, in order to 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 for General Construction Work shall maintain all permanent or temporary enclosures at its own expense.

H. THE CONTRACTOR FOR HVAC WORK

1. Use of Permanent Heating System for Temporary Heat after Building Enclosure
 - a. The Contractor for HVAC Work 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 for HVAC Work at his 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 for HVAC Work 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 for HVAC Work 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 for HVAC Work, including the placing of ancillary system equipment, shall be coordinated with the operations of all Contractors so as to insure sufficient and timely performance of the work of all Contractors. Once the permanent heating system is operating properly, the Contractor for HVAC Work shall remove all portions of the system for Temporary Heat which are not part of the permanent heating system.
3. Temporary Heat Allowance for Special Conditions or and/or Unforeseen Circumstances.
 - a. The City has established an allowance in the Contract for HVAC Work for payment of costs and expenses in connection with the provision of Temporary Heat as set forth herein. The amount of such allowance is set forth on the Bid Form for the Contract for HVAC Work and shall be included in the Total Bid Price of the Contractor for HVAC Work. The Contractor for HVAC Work 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 for HVAC Work 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 that after enclosure of the building, the Commissioner determines that (i) Contractors other than the Contractor for HVAC Work have not sufficiently advanced the work of their contracts that is necessary and required to permit the Contractor for HVAC Work to use the permanent or other heating equipment for the provision of Temporary Heat, and (ii) the Contractor for HVAC Work does not bear any responsibility for such other Contractors' failure to advance the work, the City shall pay the Contractor for HVAC Work for all differential costs for labor, material, and equipment necessary and required for the provision of a substitute system(s) for the provision of Temporary Heat or portions thereof in lieu of the permanent or other systems intended for Temporary Heat. 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.
 - (3) In the event the Commissioner determines that there is a need for maintenance of the permanent heating system by the Contractor for HVAC Work after written acceptance by the Commissioner of the work of all Contractors, and that the need for such maintenance is not the fault of the Contractor for HVAC Work, the Contractor for HVAC Work 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 HVAC Work 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 for HVAC Work 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 for HVAC Work must present original invoices for the same. DDC reserves the right to furnish the required fuel.
- d. Deduction - In the event that any amount of the allowance set forth herein is expended for payment to the Contractor for HVAC Work under the circumstances set forth in Paragraph b.(2) above, the Commissioner shall deduct and retain such amount out of moneys that are due and owing hereunder to the other Contractor(s) responsible for the failure to advance the work, as determined by the Commissioner. In the event the amount expended from the allowance exceeds the total sum due and owing to such other Contractor(s), such excess shall be paid to the City by such other Contractor(s) immediately upon demand.

I. THE CONTRACTOR FOR ELECTRICAL WORK

1. The Contractor for Electrical Work shall be responsible for providing the items set forth below and shall include all expenses in connection with such items in its Total Bid Price. The Contractor for Electrical Work shall provide such items promptly when required and shall in all respects coordinate its work with the Contractor for General Construction Work and the Contractor for HVAC Work in order to facilitate the provision of Temporary Heat by the Contractor for HVAC Work.
 - a. The Contractor for Electrical Work 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 for Electrical Work 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 by the Contractor for HVAC Work. Such power shall be provided by the Contractor for Electrical Work for the duration the Contractor for HVAC Work is required to provide Temporary Heat, as set forth in Paragraph D above.
2. In providing the items set forth in Paragraph 1 above, the Contractor for Electrical Work 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. THE CONTRACTOR FOR PLUMBING WORK

1. The Contractor for Plumbing Work 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 his Contract. The Contractor for Plumbing Work shall include all expenses in connection with such items of work in its Total Bid Price. The Contractor for Plumbing Work shall provide such items of work promptly when required and shall in all respects coordinate its work with the Contractor for General Construction Work and the Contractor for HVAC Work in order to facilitate the provision of Temporary Heat by the Contractor for HVAC Work.
2. In the event portions of the permanent plumbing equipment furnished by the Contractor for Plumbing Work as part of the work of his Contract are used for the provision of Temporary Heat by the Contractor for HVAC Work, either during construction or prior to acceptance by the City of the complete plumbing system, the Contractor for Plumbing Work 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 for Plumbing Work 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).

1.16 Scaffolding and Platforms

- A. **CONFORMANCE:** Unless otherwise indicated, the Contractor for General Construction 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 following items.
- B. **RESPONSIBILITY**
 1. A Jobsite Monitor who shall be a competent person, designated and employed by the contractor who has a daily presence on the 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 Monitor is absent. The Jobsite Monitor shall:

- a. Verify completeness of documentation and submittals (as described below).
 - b. Verify that inspections are performed, including pull tests (see below), reports are filed and reported deficiencies are corrected.
 - c. Monitor trades using scaffold.
 - d. Limit access to scaffold areas that are tagged for non-use.
 - e. Inform trades of scaffold load limitations.
 - f. Monitor loading of decks.
 - g. Verify that any ties that are temporarily removed are properly restored in the same shift.
 - h. Verify that outriggers and planks that are moved are properly set up and secured.
 - i. Verify that all scaffold decks in use have proper access/egress.
 - j. Verify that all open sides of decks in excess of 14 inches have proper guardrails and toe-boards.
 - k. 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.
 - l. Keep a log of significant actions and events connected with the scaffolding.
2. The Contractor shall be responsible for erection, maintenance and dismantling of the scaffold / shed in conformance with the New York City Building Code and OSHA requirements, contract documents and engineering specifications. The Contractor shall also be guided by generally accepted standards of scaffold industry practice as promulgated by the Scaffold Industry Association.
 3. Scaffold Engineer is a New York State licensed PE engaged by the scaffold contractor / erector and responsible to ensure that the installation design conforms to the New York City Building Code and OSHA requirements, that the design comports with the capabilities of the components and the characteristics of the site, that scaffold loads on the host building, including netting, have been properly considered and that the design documents communicate information for erectors and users.
 4. 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 Monitor and inform the Jobsite Monitor of known hazards, non-conformances or violations.

C. JOBSITE DOCUMENTATION AND SUBMITTALS:

1. 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;
2. Site logistics plan / site safety plan;
3. Installation drawing(s), design and product data to be provided for **all** scaffold(s) and shed(s) must include, at a minimum:
 - a. Plan(s);
 - b. Elevation(s);
 - c. Duty load designation; "standard" (150 psf live load) or "heavy duty" (300 psf live load).
 - d. Details including base support, anchors and ties;
 - e. Notes and specifications including load limits, number of planked levels, tie spacing, netting, and sequence of installation and removal.
 - f. Anchorage into sound material.
 - g. Load limits-based on pull tests;
 - h. Specifications for pull test(s), method, proof load and the number of trials;
 - i. Elevations, levels or heights, where anchorage is made into masonry;

- j. Specifications for frames, planks, screw jacks, anchors, and any other ancillary hardware;
- k. Samples for anchors, ties and netting;
- l. Sequence of operations for erection and demolition;
- m. Location plan, heights, widths, "jumps" over doorways and driveways;
- n. Specify size, maximum span and maximum spacing of headers and stringers;
- o. Specify legs, girts, braces, nailing and connections;
- p. All sidewalk sheds shall be designed, engineered, signed and sealed by a Professional Engineer licensed in the State of New York;
 - 1) Generic (not job specific) engineering drawings are satisfactory for standard sheds and arrangements.
 - 2) Special engineering is required for custom sheds, site-specific problems or non-standard arrangements.

D. INSPECTIONS:

1. Signed inspection reports shall be issued for each inspection and pull-test below, and shall be logged and maintained on site by the Jobsite Monitor for the duration of the project.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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.
7. Scaffolds shall be inspected daily by the Jobsite Monitor or alternate prior to use by scaffold users.
8. At the completion of the project, submit all inspection documents to the Commissioner for record purposes.

E. LADDERS AND STAIRS: The Contractor for General Construction Work 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.

F. ACCESS AND EXITS: 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.

1.17 Hoists and Hoistways

A. RESPONSIBILITY - The Contractor for General Construction Work shall provide adequate numbers of material hoists for the most expeditious performance of all parts of its work. All other Contractors are required to provide their own facilities for the hoisting of materials under their respective Contracts. However, these Contractors may make arrangements, whenever possible, with the Contractor for General Construction Work for the use of its hoist upon such terms and conditions as it may prescribe.

- 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 other Contractors. 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 hoistways providing such use meets with the Building Code of the City of New York and the approval of the Commissioner, and providing further it entails no interference with the progress of the work of any Contractor.
- D. PROTECTION FOR INTERIOR HOISTS - All interior material hoistways 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.

1.18 Certificates of Approval

- A. RESPONSIBILITY - Each Contractor shall be responsible for and shall obtain all final approvals for the work installed under its 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 before final acceptance of the work of the Contract.

1.19 Acceptance Tests

- A. GOVERNMENTAL AGENCIES - All equipment and appliances furnished and installed under the Contract shall conform with 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 TEST - 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 Controlled 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, reinspecting, replacing of material and/or damage to the work of other trades and any delay caused to the schedule shall be borne by the Contractor.

1.20 Progress Photographs (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

- A. PHOTOGRAPHER - The Contractor for General Construction Work shall employ and pay for the services of a competent photographer who shall take photographs showing the progress of the work.
- B. PHOTOGRAPHS - There shall be four (4) photographs taken each month from the commencement of the Contract to the time of completion. These photographs shall show as far as possible, the work

completed within and on the exterior of the structure. The first series of photographs shall be taken prior to the actual commencement of work at the site. In addition thereto before final payment, there shall be six (6) photographs taken of unobstructed views of the completed project or projects 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 done. (For demolition work included in the Contract there shall be four (4) photographs taken before commencement of demolition operations; four (4) at the mid-point of operations; and four (4) at the completion of demolition operations). The prints shall be 8" x 10" gloss finish, mounted with a one (1) inch binding flap of muslin on the left side. They shall be marked on the back with date of exposure; the title of the project; and the specific location. Three (3) copies of each photograph shall be furnished free of charge to the Department of Design and Construction. Photographs shall be taken as ordered by the Commissioner.

1.21 Job Meetings

- A. **MEETINGS SCHEDULE** - Meetings shall be held as scheduled by the Resident Engineer in his office at the site, at which time Contractors for all separate Contracts shall have their representatives present to discuss all details relative to the execution of the work.
- B. **ACCOMMODATIONS** - The Contractor for General Construction Work shall provide ample tables and chairs to accommodate all present at the meetings, and table space for Contract Drawings.
- C. **AGENDA** - The Resident Engineer shall preside over these meetings. Prior to each meeting, the Resident Engineer will consult with the Contractors 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 each Contractor will then dictate a brief statement for the record.

The Contractor for General Construction Work shall furnish all necessary typing and printing of the minutes prepared by the Consultant Architect/Engineer. Ample copies of the printed minutes shall be furnished to the Resident Engineer for distribution to all Contractors and representatives of the Commissioner.

- D. **COORDINATION** - Job meetings shall also be called by the Contractor for General Construction Work for the purpose of coordinating, expediting and scheduling the work of all Contracts in accordance with the master coordinated Job Progress Chart. All Contractors and their subcontractors, material suppliers or vendors whose presence is necessary, are required to attend. These meetings may, at the discretion of the Contractor for General Construction Work, be held at the same place and immediately following the Job Meetings held by the Resident Engineer. Minutes of these meetings shall be recorded, typed and printed by the Contractor for General Construction Work and distributed to all parties concerned.

1.22 Guarantees and Warranties - Refer to the Addendum to the General Conditions for the applicability of this article.

- 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 to the General Conditions.
- B. **FORM** - For all guarantee requirements set forth in Schedule B, the Contractor shall provide a written guaranty, in the form set forth on the following page.

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

Subscribed and sworn to before me this

day of _____, year _____

Notary Public

1.23 Removal of Rubbish and Surplus Materials

- A. 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.
- B. LOCATION - Each Contractor shall sweep up and deposit, at a location designated on each floor by the Contractor for General Construction Work, all of its rubbish, debris and waste materials, as it accumulates and when directed by the Resident Engineer. Wood cratings shall be broken up, neatly bundled, tied and stacked ready for removal and be deposited at a location designated on each floor by the Contractor for General Construction Work.
- C. LABORERS - The Contractor for General Construction Work 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 cratings 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.
- D. SURPLUS MATERIALS - Each Contractor shall remove from the site all surplus materials when there is no further use for same.
- E. 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.

1.24 Cleaning

Each 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 at time of substantial completion.

1.25 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, each Contractor will be required to arrange for all final inspections by the inspectional staff of the Department of Buildings 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.

1.26 Security Guards/Fire Guards on the Site (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

- A. SECURITY GUARDS (WATCHMEN)
 - 1. The Contractor for General Construction Work shall provide competent Security Guards on the site until final completion of the project or earlier if so notified in writing by the Commissioner. The Security Service shall commence with the start of work. 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 trades. 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, until final completion of the project or earlier if so notified in writing by the Commissioner.

2. Every Security Guard shall be required to hold a "Certificate of Fitness" issued by the Fire Department. Every Security Guard shall, during their tour of duty, perform the duties of Fire Guard in addition to their security obligations.
3. Should the Commissioner find that any Security Guard is unsatisfactory, such guard shall be replaced by the Contractor for General Construction Work upon the written demand of the Commissioner.
4. Each Security Guard furnished by the Contractor for General Construction Work shall be instructed by the Contractor for General Construction Work to include in their duties the entire construction site including the Field Office, temporary structures, and equipment, materials, etc.
5. Should the Contractor for General Construction Work or any other Contractor consider the security requirements outlined above inadequate, it 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 who provides the additional protection.
6. Nothing contained in this Article shall diminish in any way the responsibility of each Contractor 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 for General Construction Work shall employ Security Guards/Fire Guards at all times, 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 for General Construction Work.

C. **RESPONSIBILITY** - All Contractors will be responsible for safeguarding and protecting their own work, materials, tools and equipment.

1.27 Contractor's Daily Reports

A. **DAILY REPORTS** - As soon as the Contractor has started work on the Project, it shall submit to the Resident Engineer written daily reports of the work performed the previous day by any of its employees, including the employees of its subcontractors.

B. **INFORMATION** - The reports shall be prepared by the Contractor's Superintendent and shall bear the Contractor's Superintendent signature. Each report shall contain the following information:

1. The type of materials and/or major equipment being installed by the Contractor and the total number of employees working in each category on that particular day.
2. The names of the subcontractors working and the type of materials and/or major equipment being installed by each, together with the total number of employees working for each subcontractor on that particular day.
3. The major construction equipment being used by each Contractor and/or subcontractor.

1.28 Alternate or Substitute Equipment

A. In general, the Contract Drawings and Specifications show and describe arrangements suitable for the specific items of equipment either named or described. In the event that a Contractor submits for approval, and receives such approval, a device or piece of equipment which requires connections (vacuum, gas, steam, water, air, electric, etc.) or arrangements of these services, differing from those indicated or described in the Contract Documents, it shall be incumbent upon the Contractor submitting the alternate or substitute equipment to give timely notice to the other Contractors involved so that they may make suitable alterations in the work to accommodate the substitute or alternate equipment. The Contractor making the substitution shall be responsible for any and all additional

costs incurred by any of the Contractors by virtue of the substitution of equipment for the equipment named or described in the Contract Documents.

1.29 Sleeve and Penetration Drawings (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

- 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 Contractors for the engineering trades (Plumbing, Heating, Ventilating and Air Conditioning, and Electrical) shall submit to the Department of Design and Construction 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 that it may be determined if such penetrations will materially weaken the project's structure. The sketch will be stamped and returned if approved and/or comments will be transmitted. The engineering Contractors shall continue to submit sketches as the pouring schedule and the concrete work progresses and, until approvals for the penetration sketches have been given, shall not predicate their layout work on unapproved sketches.

1.30 Location of Partitions (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

- A. Within three (3) weeks after the concrete slabs have been poured on each floor level, the Contractor for General Construction Work shall immediately locate accurately all of the partitions, including the door openings, on the floor slabs in a manner approved by the Resident Engineer.

1.31 Furniture and Equipment

- A. **RESPONSIBILITY** - Each Contractor is responsible for moving all loose furniture and/or equipment in all areas when 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.

1.32 Overtime Work (Ordered by Commissioner)

- A. **OVERTIME** - The Commissioner reserves right to order and pay for overtime work.
1. The Commissioner can order overtime work when in the Commissioner's opinion, delay occurs and such delay is not the fault of the Contractor, or
 2. When work is of such an important nature that delay in carrying such work to completion would result in serious disadvantage to the public.
- B. **ORDER FOR OVERTIME WORK** - When overtime work is ordered by the Commissioner, such "Order" will be issued by the Commissioner on a special form letter over the signature of the Commissioner.
- C. **CONTRACTOR'S PROCEDURE PRIOR TO COMMENCING WORK**
1. Make immediate application to the Commissioner of Department of Labor, State of New York, for dispensation in accordance with Subdivision 2 of Section 220 of the Labor Law.
 2. Upon receipt of such dispensation, proceed expeditiously with ordered overtime work.

1.33 Compliance with OSHA Regulations

These Contract Documents and the work hereby contemplated shall be governed, at all times, by the following Federal Laws:

- A. William Steiger Occupational Safety and Health Act of 1970, Public Law 91-596;

- B. Part 1910 - Occupational Safety and Health Standards, Chapter XVII of Title 29, Code of Federal Regulations;
- C. Part 1926 - Safety and Health Regulations for Construction, Chapter XVII of Title 29, Code of Federal Regulations.

1.34 Temporary Services

PART A (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

- A. TEMPORARY WATER - during construction shall be furnished in the following manner:
 - 1. Immediately after the Contractor for General Construction Work has been ordered by the Commissioner to start work, it shall file an application with the Dept. of Environmental Protection for the schedule of charges for water use during construction. The Contractor for General Construction Work will be responsible for payment of water charges.
 - 2. Immediately after the Contractor for Plumbing Work has been ordered by the Commissioner to start work, it shall file an application with the Department of Environmental Protection's Bureau of Water Supply and obtain its permit to install the temporary water supply system. The system shall be installed and maintained for the use of all Contractors. A copy of the above mentioned permit shall be filed with the Commissioner. The Contractor for Plumbing Work 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 for Plumbing Work 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 for Plumbing Work shall take the necessary precautions to prevent the temporary systems from freezing.
- B. TOILET FACILITIES - both exterior and interior, for the use of all Contractors, shall be furnished and installed in the following manner:
 - 1. Toilet fixtures shall be furnished, installed and maintained in a satisfactory operating condition by the Contractor for Plumbing Work.
 - 2. Enclosures for the toilet fixtures shall be erected and maintained by the Contractor for General Construction Work.
 - 3. Heating for the enclosures shall be furnished, installed and maintained by the Contractor for General Construction Work.
 - 4. Electric lighting for the enclosures shall be furnished, installed and maintained by the Contractor for Electrical Work.
 - 5. The Contractor for General Construction Work shall keep the temporary toilet fixtures and enclosures in a clean and sanitary manner.
 - 6. No Contractor shall cause any sanitary nuisances to be committed by its employees in or about the work. Each Contractor shall enforce all sanitary regulations of the City and State Health Authorities.
- C. OVERTIME USE - Whenever any Contractor(s) work before or after the regular work hours hereinafter specified under Subparagraph D, or on a Saturday, Sunday or Holiday of any trade, such Contractor(s) shall pay the Contractor for Plumbing Work for the activation of the temporary water system and toilet facility services during such overtime periods. When more than one (1) Contractor is involved in overtime work, the costs thereof shall be prorated as determined by the Resident Engineer. When overtime is required by any or all Contractors on the work, the provisions for payment for regular time use of the temporary water supply system as specified in Subparagraph D shall apply.

- D. **ACTIVATION** - The Contractor for Plumbing Work shall bear the cost of keeping the temporary water supply system activated from a period of time 15 minutes before the established starting time of that trade which starts work earliest in the morning, to 15 minutes after the established quitting time of that trade which stops work latest in the evening. This applies to every day in the week which is established as a regular working day for aforementioned trades and holds until completion and final acceptance of the work of the Contractor for Plumbing Work or until the services are terminated by instructions from the Commissioner.

PART B (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

- A. **WATER** - The Contractor for General Construction Work will be responsible for payment of water charges. Billing will be in accordance with the Department of Environmental Protection schedule of charges for Building Purposes.
- B. **ELECTRICITY** - for temporary light and the operation of small tools, is available in the area of this project and will be furnished to the Contractor for General Construction Work by the Contractor for Electrical Work without cost.
- C. **TOILET FACILITIES** - The Contractor for General Construction Work shall arrange with the Commissioner for the temporary use of certain toilets or washrooms within the project for the use of all employees during the execution of the work.
- D. **MAINTENANCE** - The Contractor for General Construction Work shall maintain the temporary toilet facilities in a clean and sanitary manner and make all necessary repairs due to misuse.
- E. **NUISANCES** - The Contractors shall not cause any sanitary nuisance to be committed by its employees in or about the work, and shall enforce all sanitary regulations of the City and State Health Authorities.

1.35 Temporary Use, Operation and Maintenance of Elevators during Construction

PART A - FOR NEW BUILDINGS UP TO AND INCLUDING 15 STORIES (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

- A. **INSTALLATION** - The Contractor for General Construction Work shall install and complete, as indicated herein, one (1) selected main elevator in the Project for temporary operation by the Contractor for General Construction Work for the transporting of employees of all Contractors and representatives of the Department of Design and Construction and other Governmental Agencies having jurisdiction of work at the project. The Contractor for General Construction Work shall furnish, install and maintain for such elevators, 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 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 for General Construction 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. The Contractor for General Construction shall employ and pay wages, including overtime wages if necessary, for all workers required for the operation and maintenance of the temporary elevator. The Contractor for General Construction shall be responsible for all costs for: (1) the installation of 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) all work in pits, shaftways and machine rooms necessary for the operation of the elevator, and (4) the replacement of the temporary elevator or parts utilized in connection therewith, if required.

- C. **ACTIVATION TIME** - The Contractor for General Construction Work shall keep the temporary elevator activated from a period of time 15 minutes before the established starting time of that trade which starts work earliest in the morning to 15 minutes after the established quitting time of that trade which stops work latest in the evening. This applies to every day in the week, which is established as a regular working day for the aforementioned trades.
- D. **COMMENCEMENT OF SERVICE** - The Contractor for General Construction Work 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 shaftway 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 shaftways.
 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 for Electrical Work, 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 shaftway and for the car control and signal traveling cables. The Contractor for Electrical Work shall make all these required connections as soon as the equipment is declared ready for such connections by the Resident Engineer. The cost of this work shall be included in the Contractor for Electrical Work's Contract.
- F. **REMOVAL** - When elevators for permanent use have been installed and are in condition for service, and when directed by the Commissioner, the Contractor for General Construction Work shall remove the temporary enclosures and all temporary elevator equipment and promptly proceed with the installation of the permanent equipment as is required under the Contract.
- G. **INSPECTION** - Before temporary elevator equipment has been removed, a joint inspection of the equipment shall be made by the Contractor for General Construction Work 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 for General Construction Work 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 therefor will be made in accordance with Article 26 of the Contract.
- H. **REPLACEMENT** - The Contractor for General Construction Work shall replace with new, any of the equipment or parts of the temporary elevator installation that were damaged, destroyed, or that indicate excessive wear or corrosion excepting the replacement of hoisting ropes. All shaftways, 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 for General Construction Work except for the replacement of hoisting ropes.

- I. **COSTS** - The Contractor for Electrical Work shall pay the costs of all electrical current used for operating the temporary elevators. The Contractor for General Construction Work shall provide all necessary conduit and wiring connections for the proper operation of the elevator and the signaling of the temporary elevators.
- J. **LIMITATIONS OF USE** - The temporary elevator shall not be used during its operation for hoisting of materials or removal of rubbish, but shall be limited only to the transportation of employees of all Contractors and the representatives of City Departments and other Governmental Agencies having jurisdiction of work at the project. However, the Resident Engineer may grant special permission at specified times to the various Contractors 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. The particular Contractor using the elevator for the hoisting of its material shall be responsible for any damage to the elevator during the entire period of such use. The Contractor for General Construction Work shall give notification in writing to the Resident Engineer of any alleged damage to the elevator installation within 24 hours after the elevator has been employed for the hoisting of materials by the particular Contractor(s).
- K. **PAYMENT FOR USE** - The Contractor for General Construction Work shall be paid for its operation and maintenance of the temporary elevator or permanent elevator used for temporary service at the daily rate indicated under the Item of its Contract. All other costs in connection with the elevator installation and equipment, excepting electrical work done by the Contractor for Electrical Work under its Contract, shall be included in the Contractor for General Construction Work's Contract.
- L. **LIQUIDATED DAMAGES** - The Contractor for General Construction Work 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 for General Construction Work.
- M. **OVERTIME USE** - All Contracts. Whenever any Contractor or Contractors work before or after the regular work hours as indicated in Paragraph B above, or on a Saturday, Sunday or Holiday, such Contractor or Contractors shall pay the Contractor for General Construction Work for the operation and maintenance of the temporary elevator, if required by such Contractor or Contractors, at the daily rate indicated in the Contract but increased to reflect the difference between regular wage rates and overtime wage rates. The basic hourly charge shall be considered as one ninth (1/9) of the amount shown in the Item of the Bid form of the General Construction Work Contract. The City will not pay any Contractor for such overtime use of the elevator. When more than one (1) Contractor is involved in the overtime work, the charges shall be prorated as determined by the Resident Engineer unless otherwise agreed mutually among all the Contractors involved.

PART B - FOR NEW BUILDINGS OVER 15 STORIES (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

- A. **INSTALLATION** - The Contractor for General Construction Work shall install and complete, as indicated herein, two (2) selected main elevators in the Project for temporary operation by the Contractor for General Construction Work for the transporting of employees of all Contractors and representatives of the Department of Design and Construction and other Governmental Agencies having jurisdiction over work at the project. The Contractor for General Construction Work shall furnish, install and maintain for such elevators, 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 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. The two (2) elevators will not be operated simultaneously.

- B. RESPONSIBILITY** - The Contractor for General Construction 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. The Contractor for General Construction shall employ and pay wages, including overtime wages if necessary, for all workers required for the operation and maintenance of the temporary elevator. The Contractor for General Construction shall be responsible for all costs for: (1) the installation of 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) all work in pits, shaftways and machine rooms necessary for the operation of the elevator, and (4) the replacement of the temporary elevator or parts utilized in connection therewith, if required.
- C. ACTIVATION TIME** - The Contractor for General Construction Work shall keep the temporary elevator activated from a period of time 15 minutes before the established starting time of that trade which starts work earliest in the morning to 15 minutes after the established quitting time of that trade which stops work latest in the evening. This applies to every day in the week, which is established as a regular working day for the aforementioned trades.
- D. LOW RISE ELEVATOR** - The Contractor for General Construction Work 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 shaftways.
 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 for Electrical Work, 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 for Electrical Work shall make all these required connections as soon as the Equipment is declared ready for such connections by the Resident Engineer. The cost of this work shall be included in the Contractor for Electrical Work's Contract.
- F. HIGH RISE ELEVATOR** - The Contractor for General Construction Work 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 shaftway 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 shaftways.
 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. The Contractor for Electrical Work, 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 shaftway.
- The Contractor for Electrical Work shall make all these required connections as soon as the equipment is declared ready for such connections by the Resident Engineer. The cost of this work shall be included in the Contractor for Electrical Work's Contract.
- H. When the high rise elevator is completed and ready for temporary operation, the low rise temporary elevator shall be shut down.
- I. 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 for General Construction Work shall remove the temporary enclosures and all temporary elevator equipment, and promptly proceed with the installation of the permanent equipment as is required under the Contract.
- J. Before temporary elevator equipment has been removed, a joint inspection of the equipment shall be made by the Contractor for General Construction Work 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 for General Construction Work 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 therefor will be made in accordance with Article 26 of the Contract.
- K. The Contractor for General Construction Work shall replace with new, any of the equipment or parts of the temporary elevator installations that were damaged, destroyed, or that indicate excessive wear or corrosion excepting the replacement of hoisting ropes. All shaftways, 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 for General Construction Work except for the replacement of hoisting ropes.
- L. The Contractor for Electrical Work shall pay the costs of all electrical current used for operating the temporary elevators. The Contractor for General Construction Work shall provide all necessary conduits and wiring connections for the proper operation of the elevators and the signaling of the temporary elevators.

- M. No temporary elevator shall be used during its operation for hoisting of materials or removal of rubbish, but shall be limited only to the transportation of employees of all Contractors and the representatives of City Departments and other governmental agencies having jurisdiction of work at the project. However, the Resident Engineer may grant special permission at specific times to the various Contractors to hoist materials which, in the Resident Engineer's opinion, will not overload or damage the elevator installation, but only after such time as all plastering has been completed from the second floor up. The particular Contractor using the elevator for the hoisting of its material shall be responsible for any damage to the elevator during the entire period of such use. The Contractor for General Construction Work shall give notification in writing to the Resident Engineer of any alleged damage to the elevator installation within 24 hours after the elevator has been employed for the hoisting of materials by the other Contractors.
- N. The Contractor for General Construction Work shall be paid for its operation and maintenance of each temporary elevator or permanent elevator used for temporary service at the daily rate indicated under the item of its Contract. All other costs in connection with elevator installation and equipment, excepting Electrical Work done by the Contractor for Electrical Work under its Contract, shall be included in the Contractor for General Construction Work's Contract.
- O. LIQUIDATED DAMAGES - The Contractor for General Construction Work 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 for General Construction Work.
- P. OVERTIME USE - ALL CONTRACTS. Whenever any Contractor(s) work before or after the regular work hours as indicated in Subparagraph B above, or on a Saturday, Sunday or Holiday, such Contractor or Contractors shall pay the Contractor for General Construction Work for the operation and maintenance of the temporary elevator, if required by such Contractor or Contractors, at the rate indicated in the Item of the bid form of the General Construction Work Contract but increased to reflect the difference between regular wage rates and overtime wage rates. The basic hourly charge shall be considered as one ninth (1/9) of the amount shown in the item of the General Construction Work Contract. The City will not pay any Contractor for such overtime use of the elevator. When more than one (1) Contractor is involved in the overtime work, the charges shall be prorated as determined by the Resident Engineer unless otherwise agreed mutually among all the Contractors involved.

PART C - EXISTING BUILDINGS (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

- A. The Contractor for General Construction Work may use, at the Commissioner's discretion, one (1) selected elevator in the project for temporary operation by the General Construction Work Contractor for the transportation of employees of all Contractors and representatives of the Department of Design and Construction and other Governmental Agencies having jurisdiction over work at the Project. The Contractor for General Construction Work shall maintain for such elevators, all necessary hoisting ropes, governor cables, traveling conductor cables, operating devices hand reset target annunciators, signal devices, and all other permanent or temporary parts. The installation 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. The Contractor for General Construction 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. The Contractor for General Construction shall employ and pay wages, including overtime wages if necessary, for all workers required for the operation and maintenance of the temporary elevator. The Contractor for General Construction shall be responsible for all costs for: (1) the installation of 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) all work in pits, shaftways and machine rooms necessary for the operation of the elevator, and (4) the replacement of

the temporary elevator or parts utilized in connection therewith, if required.

- C. The Contractor for General Construction Work shall keep the temporary elevator activated from a period of time of 15 minutes before the established starting time of that trade which starts work earliest in the morning to 15 minutes after the established quitting time of that trade which stops work latest in the evening. This applies to every day in the week, which is established as a regular working day for the aforementioned trades.
 - D. The Contractor for General Construction Work shall replace with new any of the equipment or parts of the elevator for temporary operation installation that were damaged, destroyed, or that indicate excessive wear or corrosion excepting the replacement of hoisting ropes. All shaftways, 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 for General Construction Work except for the replacement of hoisting ropes.
 - E. The elevator for temporary operations shall be used during its operation for hoisting of materials or removal of rubbish, but shall be limited only to the transportation of employees of all Contractors and the representative of City Departments and other Governmental Agencies having jurisdiction of work at the project. However, the Resident Engineer may grant special permission at specified times to the various Contractors to hoist materials which, in the Resident Engineer's opinion, will not overload or damage the elevator installation. The particular Contractor using the elevator for the hoisting of its material shall be responsible for any damage to the elevator during the entire period of such use. The Contractor for General Construction Work shall give notification in writing to the Resident Engineer of any alleged employed for the hoisting of materials by the particular Contractor(s).
 - F. The Contractor for General Construction Work shall pay all costs for the operation and maintenance of the elevator for temporary operation. All other costs in connection with the elevator and equipment excepting electrical work done by the Contractor for Electrical Work under its Contract, shall be included in the Contractor for General Construction Work's Contract.
 - G. **LIQUIDATED DAMAGES** - The Contractor for General Construction Work 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 for General Construction Work.
 - H. **OVERTIME USE - ALL CONTRACTS** - Whenever any Contractor(s) work before or after the regular work hours as indicated in Paragraph B above, or on a Saturday, Sunday or Holiday, such Contractor(s) shall pay the Contractor for General Construction Work for the operation and maintenance of the elevator, if required by such Contractor(s) at the union daily rates but increased to reflect the difference between regular wage rates and overtime wage rates. The City will not pay any Contractor for overtime use of the elevator. When more than one (1) Contractor is involved in the overtime work, the charges shall be prorated as determined by the Resident Engineer unless otherwise agreed mutually among all the Contractors involved.
- 1.36 General Mechanical Requirements (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)**
- A. The General Mechanical Requirements contained herein shall be followed by all Contractors furnishing mechanical equipment under their respective Contracts.
 - B. **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.
 - C. **THE 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. The Contractor shall follow these Contract Drawings in laying out the work and shall consult the Contract Drawings of the other Contracts to become familiar with all conditions affecting it and to verify the spaces in which it will be installed. The Contractor shall cooperate with the Public Utilities doing certain necessary work for this project. The attention of the Contractor is called to the Contract Drawings for General Construction Work for the location, arrangement and extent of plumbing and other fixtures and equipment. All work shall be installed in locations as shown on these Contract Drawings.

- D. **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. The work shall not be deemed substantially complete until the certificates have been delivered.
- E. **SHOP DRAWING SUBMITTALS** - Contractors doing mechanical work shall submit, as directed, Shop Drawings, roughing drawings, manufacturer's Shop Drawings, field drawings, cuts, bulletins, etc., of all materials, equipment and methods of installation shown or specified.
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.
- F. **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.
- G. **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.
- H. **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.
- I. **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.
- J. **MACHINERY PARTS** - shall conform exactly to the dimensions shown on the Contract Drawings. The equivalent parts of identical machines shall be identical so that they can be interchangeable.

- K. **FITTINGS** - All grease lubricating fittings on equipment shall be of a uniform type and shall be readily accessible and types proposed to be used shall be submitted for approval.
- L. **GUARDS** - All machinery shall be designed with protecting guards conforming with the requirements of the Industrial Code of the New York State Department of Labor or OSHA, whichever is stricter.
- M. **LIMIT SWITCHES** - Unless otherwise specified, limit switches and other mechanically actuated switches shall be enclosed in tight metal boxes and be installed in the proper locations ready for conduit connections. Switches shall be complete with all supports, stops, cams, arms, tripping and operating members, which shall be adjustable where required for proper functioning.
- N. **ANCHORS, BOLTS, ETC. AND FOUNDATIONS** - Unless otherwise specified, the Contractor shall furnish the necessary anchors, bolts, guides, track rails, bearing plates, substantial templates and all other appurtenances, and build the necessary foundations, as approved by the Commissioner, for all equipment supplied by the Contractor under its Contract.
- O. **EQUIPMENT DESIGN** - Equipment and appurtenances shall be designed in conformity with ASME and AIEE standards and shall be of rugged construction and of sufficient strength to withstand all stresses which may occur during fabrication, testing, transportation, installation, and all conditions of operations. Adequate stays, braces and anchors shall be provided. All bearings and moving parts shall be adequately protected against wear by bushings, or other approved means, and shall be fully lubricated by readily accessible devices. Details shall be designed for appearance as well as utility. Protruding members, joints, corners, gear covers and the like shall be finished in appearance. All exposed welds shall be ground smooth and the corners of structural shapes shall be mitered.
- P. **SUPPORTING STRUCTURES DESIGNED BY THE CONTRACTOR** - Unless otherwise specified, supporting structures for equipment to be furnished by the Contractor shall be designed and 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:
1. Structural Steel - ASTM Standard Specifications, AISC and NYBC.
 2. 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 NYBC for average concrete.
 3. 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.
- Q. **ENGINEER'S ASSUMED DESIGN DATA** - All structural steel, concrete and reinforcement indicated or specified to support the equipment or appurtenances and the area immediately adjacent thereto have been designed from data based on assumed average anticipated clearances and loading. The final structural design in these locations will be based on definite data received from the Contractor after the Commissioner approves the equipment and appurtenances to be installed. The Commissioner will then redesign, if necessary, the supporting structure to properly support and maintain the approved equipment and appurtenances. Necessary major changes in design will be covered by Supplementary Drawings that will be furnished to the Contractor. All changes indicated or necessary to accommodate the equipment and appurtenances, shall be incorporated into the Working Drawings submitted for approval, and the cost of furnishing and installing the work necessitated by these changes shall be borne by the Contractor furnishing the equipment.
- R. **INSTALLATION OF EQUIPMENT** - Equipment shall be erected in a neat and workmanlike manner on the foundations, at the locations and elevations shown on the Contract Drawings or as required. All equipment shall be correctly aligned, leveled and adjusted for satisfactory operation and shall be installed so that proper and necessary connections can be made readily between various units and with piping and equipment that may be installed under other Contracts. When required by the Specifications, the Contractor shall obtain the assistance of a competent and experienced Engineer or Superintendent, in the employ of the manufacturer, to install the equipment.

- S. **ELIMINATION OF NOISE** - All work provided under the Contract shall operate without objectionable noise or vibration.
1. 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.
 2. Should noise or vibration found objectionable by the Commissioner be transmitted by any pipe or portions of the structure from 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.
- T. **GROUTING** - The Contractor shall furnish all material and labor for proper bedding on Portland Cement grout, the equipment or its supporting base. Grout shall consist of one (1) part Portland Cement and one (1) part of approved sand. The top of the masonry foundation shall be properly cleaned and wetted before grouting. Grout shall completely fill all spaces between the equipment, or base, and the foundation and it shall generally average one (1) inch in thickness. Leveling wedges shall not be removed before the grout has reached its final set. Voids left by wedges shall be pointed with grout. Exposed surfaces of the grout shall have a finished appearance.
- U. **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.
- V. **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.

1.37 General Electrical Requirements

SCOPE - This Article 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 Article and the requirements of the Specifications and/or the Contract Drawings, whichever requirements is the most stringent, as determined by the Commissioner, shall take precedence.

PART A - PROCEDURE--ELECTRICAL APPROVALS

SCOPE- This Section sets forth general electrical information, as well as required approvals for all electrical work required for the Project, including ancillary electrical work which may be included in contracts for other than the Contract for Electrical Work.

- 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. **SUPERVISION AND ACCEPTANCE** - The electrical work and equipment shall be installed under the supervision of the Commissioner's representative. Final acceptance and approval of the work will be contingent upon the inspection and test of the installation by the City regulatory agency, on completion.
- C. **TESTS** - The Contractor shall notify the Commissioner when the Contractor will examine and begin

work and shall also notify the Commissioner when the Contractor has completed the work and is ready to have it inspected and tested. Upon completion of the work and prior to final payment, 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 are 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.)** - Before final payment is made, there must be filed with the Department of Design and Construction, a Certificate of Inspection signed by the Director of the B.E.C., which Certificate shall certify that all materials and workmanship comply with the rules and regulations of the B.E.C. of the City of New York and with the Electrical Code of the Administrative Code of the City of New York.
- 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 these Specifications.
 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 apparatus 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 apparatus or materials of the same kind, type or classification and being used for identical types of service, shall be made by the same manufacturer.
- G. **CONTRACTOR'S ELECTRICAL DRAWINGS AND SAMPLES FOR APPROVAL**
1. The Contractor shall submit to the Commissioner for approval, 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 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.
- H. **TIMELINESS** - All material shall be submitted in sufficient time for the program 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.
- I. **CONTRACTOR'S STATEMENT WITH SUBMITTALS** - All dimensional drawings of equipment, blueprints, catalogues, models, samples and other data relative to the equipment, the materials, the work or any part thereof submitted for approval are to be accompanied by a statement that they have been examined by the Contractor and that the drawings, data and other material submitted agree with the requirements of the Contract and Specifications and shall list and describe the points of

disagreements, if any exist. In the absence of such statement, approvals will be given with the understanding that articles of equipment or materials or methods of installation are in substantial compliance with the Contract and that if the adoption of these designs, details, articles, equipment, materials, constructions, installations, places and locations necessitate changes, alterations or replacements at an increased cost to the Contractor or others, the Contractor making the substitution for the specified equipment or material shall bear all such additional expense involved.

- J. **BULLETINS AND INSTRUCTIONS** - The Contractor shall furnish and deliver to the Commissioner, 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 B - TEMPORARY LIGHTING, SITE SECURITY LIGHTING & POWER

SCOPE - This Section sets forth the General Conditions and procedures relating to Temporary Lighting, Site Security Lighting and Power during the construction period, and is applicable to, and binding on, all Contracts insofar as they are affected.

A. **TEMPORARY LIGHTING (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)**

1. Energy for the Temporary Lighting System for minor rehabilitation projects (those projects whose existing distribution system is not being changed or modified under the scope of this project) may be taken from the existing electrical distribution system if the existing system is of adequate capacity for the additional temporary lighting load. The Contractor for Electrical Work is to cooperate and coordinate with the facility custodian so as not to interfere with the normal operation of the facility.
2. Energy for the Temporary Lighting system for new projects and for those existing projects that are not covered in the preceding paragraph shall be provided as in the following paragraphs.
3. **CONNECTION TO UTILITY LINES** - Temporary Electric Service for use during construction shall be provided as follows: The Contractor for Electrical Work 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. The Contractor for Electrical Work shall include in its bid any charges which may be made by the Public Utility Company for extending its electrical facilities, and for making final connections. The Contractor for Electrical Work shall make payment directly to the Public Utility Company.
4. **APPLICATIONS FOR METER** - The Contractor for Electrical Work 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 Lighting. The Contractor for Electrical Work shall pay to the Public Utility Company, all bills for Temporary Lighting energy used throughout the work, as they become due.
5. **SERVICE AND METERING EQUIPMENT** - The Contractor for Electrical Work shall furnish and install, at a suitable location on the site, approved service and metering equipment for the Temporary Lighting 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 Temporary Lighting and Site Security Lighting and shall meet all requirements of the NYCEC.
6. The Contractor for Electrical Work shall furnish and connect to the metered service point, a system of Temporary Lighting 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.

7. ITEMS - The Temporary Lighting System 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, trailers 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.
8. The Temporary Lighting System shall be progressively installed as required for the advancement of the work under the various Contracts.
9. RELOCATION - Any Contractor requiring the relocation or extension of the original Temporary Lighting System that is not required due to the normal advancement of the work, as determined by the Commissioner's field representative, shall bear all costs thereof.
10. TRAILERS - Trailers shall be furnished with left-hand sockets with locked type guards and 40 feet of rubber covered cable. The Contractor for Electrical Work shall furnish and distribute a minimum of three (3) complete trailers to each Contractor. See the detailed Electrical Specifications for possible additional trailers required.
11. LAMPS - The Contractor for Electrical Work shall furnish and install one (1) complete set of lamps, including those for the trailers. Broken and burned out lamps in the general lighting system shall be replaced by the Contractor for Electrical Work while those in the trailers shall be replaced by the Contractor using such equipment. All lamps shall be 100 watt.
12. CIRCUIT PROTECTION - The Contractor for Electrical Work shall furnish and install GFI protection for the Temporary Lighting and Site Security Systems.
13. ENERGIZING - The Contractor for Electrical Work shall keep the Temporary Lighting System energized from a period of time, 15 minutes before the established starting time of that trade, which starts work earliest in the morning to 15 minutes after the established quitting time of that trade which stops work latest in the evening. This applies to every day in the week which is established as a regular working day for any trade involved in the construction of this facility and holds until completion and final acceptance of the work of the Contractor for Electrical Work or until the services are terminated by instructions from the Commissioner.
14. MAINTENANCE OF TEMPORARY LIGHTS
 - a. The Contractor for Electrical Work shall maintain the Temporary Lighting System in good working order during the scheduled hours established.
 - b. The Contractor for Electrical Work is to include in its contract all charges for energy for the Temporary Lighting System.
 - c. The Contractor is advised to show the estimated cost of the installation, maintenance and energy of temporary electrical facilities in its detailed cost estimate of its Contract so as to facilitate partial payments during construction.
15. OVERTIME USE - Any Contractor requiring Temporary Lighting Service before or after hours set forth hereinbefore, or on weekends or a Holiday for all trades involved in the construction of this facility, shall pay for the additional cost of keeping the system energized and repaired. If more than one (1) Contractor is involved, the charges shall be prorated, or shared by other acceptable means previously agreed upon by the Contractors involved. When overtime is required by all Contractors on the work, the provisions for payment for regular time use of the Temporary Lighting System shall apply.
16. SERVICE BEYOND COMPLETION DATE - When failure to comply with the terms and conditions of any Contract necessitates temporary light beyond the date set for completion of the Contract for Electrical Work, the Contractor requiring such additional service shall pay for keeping it energized. When more than one (1) Contractor requires such service, the expense thereof shall be prorated

as determined by the Commissioner.

17. **ADJUSTMENT IN CONTRACT PRICE FOR TEMPORARY LIGHTING MAINTENANCE** - In the event that the temporary lighting maintenance extends beyond the Contract time through no fault of the Contractor for Electrical Work, the additional maintenance cost will be in accordance with the requirements of the following paragraphs:

- a. Payment for maintaining Temporary facilities when required will be made at the average hourly wage for electricians plus 69% of this rate, for each hour of work done upon order of the Resident Engineer. Payments will be included in partial estimates upon submission of detailed vouchers stating date, hour and time expended for each item of work.
- b. The addition of 69% of the average hourly wage rate specified above shall be deemed as the total allowance for all profit and overhead and for any and all other costs and expenses of any nature whatsoever, including but not limited to allowance for insurance, workman's compensation, unemployment insurance and other supplementary benefits.

18. **REMOVAL OF TEMPORARY LIGHTING WIRING** - The temporary lighting system shall be removed by the Contractor for Electrical Work when authorized by the Commissioner.

19. **HAND TOOLS** - The temporary electric lighting system shall not be used for power purposes, excepting that light hand tools not larger than 1/4 horsepower may be operated therefrom by any Contractor.

B. SITE SECURITY LIGHTING (FOR NEW CONSTRUCTION ONLY) (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

1. The Contractor for the Electric Work 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.
2. It is essential that the site security lighting system be completely installed and operating, at the earliest possible date. All Contractors must 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, and a part of the system interferes with the work of any trade, that trade 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 for Electrical Work.
5. The site security system shall be kept illuminated at all times during the hours of darkness. The Contractor for Electrical Work, at its own expense, shall keep the system in operation, furnishing and installing all material necessary to replace all damaged or burned out parts.
6. The Contractor for Electrical Work 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 for Electrical Work and shall be removed and disposed of by the Contractor for

Electrical Work upon completion of that phase of the project.

C. TEMPORARY POWER

1. Any Contractor requiring temporary power for equipment larger than 1/4 horsepower shall arrange with the Public Utility for service and pay for all electrical energy consumed by its lines.
2. The Contractor shall provide service, metering equipment and distribution centers as required, and be responsible for keeping the system in working order.
3. When directed by the Commissioner, the Contractor shall remove its own temporary power system.

D. 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 for Electrical Work shall have the temporary lighting system changed over from the temporary service points to the main distribution panel.
2. **COST OF CHANGE OVER** - The Contractor for Electrical Work shall be responsible for all cost 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 lighting specified herein shall be adhered to after change over of service.
4. **NO EXTRA COST** - The operation of the service and switchboard equipment shall be under the supervision of the Contractor for Electrical Work, 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 for Electrical Work.

PART C - ELECTRICAL INSTALLATION PROCEDURE

SCOPE - This Section sets forth the general installation procedure that shall apply to all electrical work and electrical equipment appearing in any of the Contracts.

- A. INTENT OF CONTRACT DOCUMENTS** - Contract Specifications and Contract Drawings 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 each Contractor shall provide whatever labor and materials are found necessary, within the scope of its 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 the Department of Design and Construction. 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 the Department of Design and Construction 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 Contractor for Plumbing Work and shall extend one (1) inch above finished floor.
- D. **COORDINATION** - Each 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. Each 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. **RESPONSIBILITY FOR ERRORS OF INSTALLATION** - In case of interference with the work of others or erroneous placement of work with respect to equipment or structures, each Contractor shall cooperate with other affected Contractors for an immediate agreeable solution of the affected work with each Contractor furnishing its responsible share of the labor and materials necessary to complete the installation in an approved manner.
- F. **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 who caused the damage. Each 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. Any Contractor who pierces waterproofing because of the installation of their work shall, at their own expense, restore the waterproofing to the satisfaction of the Commissioner.
- G. **ELECTRICAL WORK AT SITE** - Any Contractor who is required to furnish 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 who furnished the unit, without cost to the City.
- H. **COOPERATION AMONG CONTRACTORS** - Whenever an electrically operated unit or system involves the combined work of several Contractors for its installation and successful operation, each Contractor shall exercise the utmost diligence in cooperating with others to produce a complete, harmonious installation.
- I. **DEFINITIONS**
1. **WIRING** means both wire and raceway (rigid steel, heavy wall conduit unless specifically indicated otherwise).
 2. **POWER WIRING** means wiring from a panelboard 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.
 3. **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.
- J. **WORK BY CONTRACTORS FURNISHING ELECTRICAL EQUIPMENT** - Any Contractor who furnishes an electrically operated or motorized unit of equipment shall install same and, as part of its Contract, perform the following work in connection therewith:
1. **FOUNDATIONS** - Unless otherwise specified or indicated, the Contractor furnishing electrically operated equipment shall also furnish and install approved foundations for same. Special

foundations, if required, will be described in the detailed Specification.

- a. **MATERIAL** - All foundations, unless required otherwise, shall rest on a structural slab and shall be of poured concrete, of a mixture specified for reinforced concrete. Foundations shall present a neat, smooth appearance without voids, sharp corners or edges.
 - b. **DIMENSIONS** - Foundation dimensions, height above floor, methods of setting, aligning and anchoring of equipment shall be as recommended by the manufacturer of equipment and approved by the Commissioner. The minimum height of foundations above finished floor shall be four (4) inches and foundations shall extend at least six (6) inches at all sides beyond the base plates of equipment.
2. At least one (1) inch of grout shall be applied under the equipment base plate after placement and alignment of the equipment.
 3. **ITEMS** - Anchor plates, bolts, sleeves, nuts and washers and other necessary items for proper installation of equipment shall be provided. The Contractor shall also furnish and set required templates to locate accurately the positions of the hold down bolts.
 4. **VIBRATION ISOLATION** - If specifically required in the detailed Specifications for a particular unit, vibration isolators shall be provided for rotating equipment.
 5. **SUPPORTS** - If any motorized equipment is required to be mounted overhead or off a wall, the Contractor supplying the unit shall furnish and install a suitable platform, bracket or shelf, whichever is appropriate or specified, and mount the equipment thereon. This support shall be constructed of substantial steel members, plates, etc., and the whole securely fastened to the structure or to anchors previously embedded in the wall or slab. In case of excessive vibration transmitted to structure, isolating pads or other devices shall be installed. The Contractor shall apply one (1) coat of approved primer paint to the support and one (1) additional coat of approved paint in the field.
 6. **ASSOCIATED EQUIPMENT** - The Contractor who furnishes a motorized or electrically operated unit of equipment shall also furnish all associated motor starters, disconnect means, relays, control devices, lamps, or other devices, necessary for the successful functioning of the unit.
 7. **POINT OF DELIVERY** - Any item specified to be installed by the Contractor for Electrical Work and delivered to the site that can not be hand carried (due to bulk, weight or timeliness) to the location of its installation is to be delivered and set in place, leveled and secured by the Contractor furnishing the equipment. Such delivery shall be to the location where it is to be installed by the Contractor for Electrical Work.
 8. **CONTROL AND INTERLOCK WIRING**
 - a. **General Construction Work and Plumbing Work.**
 - (1) All control wiring associated with doors and door hardware is to be furnished and installed, unless otherwise indicated, by the Contractor furnishing the doors. Power for the door operation and for its controls shall be furnished and installed by the Contractor for Electrical Work.
 - (2) All other control wiring associated with equipment furnished by either the Contractor for General Construction Work or the Contractor for Plumbing Work is to be furnished and installed by the Contractor for Electrical Work.
 - b. **Contractor for Heating, Ventilating and Air Conditioning Work**
 - (1) The furnishing and installing of all control devices and all control and interlock wiring for equipment furnished under the Heating, Ventilating and Air Conditioning Contract shall be

by that Contractor, including any power required for any control device.

- (2) The Contractor for Heating, Ventilating and Air Conditioning Work shall deliver to the Contractor for Electrical Work all starters and disconnect switches specified to be furnished under the Heating, Ventilating and Air Conditioning Contract. The Contractor for Electrical Work is to install the starters and disconnect switches, and furnish and install all power wiring and make connections between the starter, disconnect switch and motor or equipment being served. The motor or equipment is to be mounted by the Contractor furnishing the motor.

9. **INSTALLATION OF BURNER** - The Contractor who furnishes and installs the gas/oil-fired boiler/furnace shall also include as part of its Contract, the work of furnishing, installing and connecting all equipment, controls with necessary conduits and wiring, to a service point provided by the Contractor for Electrical Work. Unless detailed otherwise in the Specific Requirements, the Contractor for Electrical Work shall furnish power from the power source to a junction box furnished and installed by the Contractor for the Electrical Work and located near the boiler/furnace control panel. The Contractor for Electrical Work shall also furnish and install an empty conduit and a junction box to be located at a remote location (outside of the boiler/furnace room) for an emergency shut-off switch. The shut-off switch and all other conduit and wire shall be furnished and installed by the Contractor furnishing the boiler/furnace.

K. WORK BY CONTRACTOR FOR ELECTRICAL WORK - The Contractor for Electrical Work shall perform the following work:

1. **PANELETTE** - The Contractor for Electrical Work shall furnish and install a four (4) circuit panelette in each mechanical equipment room.
2. **STARTERS AND DISCONNECT SWITCHES** - The associated disconnect switches and starters approved by the Department of Design and Construction which require mounting or wiring apart from a main equipment unit shall be delivered, prewired, to the Contractor for Electrical Work at the site of the project, who shall install and wire them. The electrical Contractor shall acknowledge acceptance in writing to the Contractor supplying them, and thereafter assume responsibility for their safe keeping until final acceptance of its work by the City.
3. **CONTROL DEVICES** - The Contractor for Electrical Work shall install conduit, wire, and make all connections for all interlock and control devices furnished under the Plumbing Work Contract and also all control and interlock devices furnished under the General Construction Work Contract, except for door control wiring. The various control and interlock devices, furnished (prewired) by the Contractors for Plumbing and General Construction Work Contractors, shall be installed and final connections made by the Contractor for Electrical Work.
4. **DOOR CONTROL WIRING** - Unless specifically detailed otherwise in the Contract Documents for Electrical Work, all door control and interlock devices are to be furnished and installed and wired by the Contractor furnishing the required control and interlock devices.
5. **TESTS** - The Contractor supplying the equipment, together with the Contractor for Electrical Work shall cooperate in making preliminary tests to establish the correctness of the installation. If a faulty operation of the unit is discovered, the Contractor whose work is the cause shall, without delay, remedy the trouble.

L. PAINTING

1. Ingredients and methods of application shall conform to that as required for similar work under the Contract for General Construction Work.
2. **ALL METAL CABINETS** - including switchboards, panelboards, boxes (pull, junction and outlet), trims, doors and covers shall be painted as follows:

All surfaces inside and outside, one (1) approved coat of primer. All accessible surfaces one (1) coat of approved paint inside and outside, in the field after installation.

3. HANGERS, CONDUITS AND FITTINGS – The Contractor who installs them shall give one (1) field applied, approved coat primer, followed by a second coat.
4. FINAL COAT--A final or third coat of paint, as directed, shall be applied by the Contractor installing them when the wall surfaces on which they are supported or the ceiling from which they are hung are not painted by the Contractor for General Construction Work. Pull boxes shall be neatly and legibly stenciled to show service.
5. PAINTING OF MOTORIZED EQUIPMENT - The Contractor furnishing electrically driven equipment shall paint motors and driven equipment, starters and controllers and other equipment provided by the Contractor. The Contractor shall provide any painting or finishing that may be required in the Specifications. For certain equipment having special corrosion resistant factory finishes, painting may be waived by special permission. Equipment shall be neatly stenciled, with legible characters to indicate service by the Contractor who supplies the equipment.
6. NAME PLATES - shall be left clean of all paint.

PART D - ELECTRICAL CONDUIT SYSTEM INCLUDING BOXES (PULL, JUNCTION AND OUTLET) - (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

SCOPE - This Section sets forth the requirements applying to any Contract requiring the installation of electrical conduits, boxes or fittings. Rigid steel conduit shall be used through out, unless specifically indicated otherwise. TYPES-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.

A. CONDUIT TYPES

1. RIGID STEEL CONDUIT - shall be interpreted to 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 alarm systems as required by the Building Code. Rigid steel conduit shall be used for all underground conduits in contact with earth, for Fire Alarm Systems and as required by authorities having jurisdiction.
2. ELECTRICAL METALLIC TUBING (EMT) - shall be industry standard thin wall conduit of galvanized steel only. All elbows, bends, couplings and similar fittings which constitute a part of the conduit system shall be specifically designed 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.
3. FLEXIBLE METALLIC - 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.

B. 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 NYCEC 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 by the Contractor installing them 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** - The Contractor installing underground conduits, duct banks or manholes shall perform, as part of its Contract, 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 zinc coated 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 (each 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. For conduits one (1) inch in diameter or larger, insulating bushings to be O.Z. or approved equal.
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 a 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 who installed them using a ball mandrel and a brush and snake before the installation will be accepted. The ball shall be of lignum vitae 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 Electrical Inspector. 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 Electrical Inspector and submitted in triplicate for approval. This record shall be entered on the Record drawings, which are required under "General Conditions Governing All Contracts."
- 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.

C. 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 zinc 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. All pull boxes shall be suspended from ceiling or walls in the most substantial manner.
2. For large boxes, sufficient suitable porcelain clamp insulators or other approved devices shall be provided in the pull boxes for supporting the cables passing through the box so that the cables will not be unsupported for a distance greater than three (3) feet and so as to permit a neat and orderly arrangement of the cables.
3. For pull boxes having the largest side more than nine (9) square feet in area, special rectangular and diagonal angle-iron bracing will be required as approved.
4. Pull boxes of special or odd shapes are required to be installed by the Contractor, even though not shown on plans, where necessary to overcome interference or to facilitate the pulling of conductors in conduits.
5. 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. Precautions should be exercised regarding the location of window and door trims,

paneling, etc. Mistakes resulting from failure to observe these precautions, must be corrected by the Contractor without cost to the City. Outlets in hung ceilings shall be supported from the black iron or structure.

6. 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.
7. Exposed wall outlet boxes shall be erected neatly and tight against the walls and securely anchored to same.
8. 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.
9. 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
10. 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.
11. 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.
12. 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.
13. 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.
14. 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.
15. 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, noncorrodible and not less than four (4) in number for each box opening.

PART E - ELECTRICAL WIRING DEVICES (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

- 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, 15 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.

PART F - ELECTRICAL CONDUCTORS AND TERMINATIONS (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

- A. CONDUCTORS FOR LIGHT AND POWER - All wire and cable shall be of annealed copper of 98% conductivity. Aluminum wire or cable will not be permitted. The insulation shall be flame retardant, moisture and heat resistant, thermoplastic, type THW or THWN rated for 600 volts at 75 degrees C. for both wet and dry locations. Wires No. 8 or larger shall be stranded. Wires and cables shall also be subject to the requirements of the NYCEC. Cables for incoming service or wire in conduits contiguous with the earth or in concrete or other damp or wet locations shall be synthetic rubber insulated with neoprene jacket, heat and moisture resistant and shall be equal to UL Type USE and rated for 600 volts at 75 degrees C. for both wet and dry locations.
- B. FIXTURE WIRE - Lighting fixtures shall be wired with No. 14 gauge wire designated as AWM and rated at 105 degrees C.
- C. OTHER TYPES - Cables and wires for interior communication systems are described in detailed

Specifications of applicable Contracts.

- 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. **TESTS**
1. **NOTIFICATION OF TEST** - No cable shall be released for shipment from the mill unless authorized by the Commissioner. The Contractor shall give the Commissioner at least 10 days notice when the cable will be available for testing at the mill. The Contractor's representative or inspector shall have access during working hours to all parts of the plant where the cable is being manufactured, and all reasonable inspection and testing facilities shall be afforded to the Contractor without increase in price to the City. The Inspector shall witness the complete test of cable and receive a copy of all test data.
 2. **TEST DATA** - The Contractor shall forward to the Commissioner six (6) copies of all test data for approval before accepting shipment of the cable.
 3. **INSPECTION DURING MANUFACTURE** - The Commissioner reserves the right to dispatch a representative to the factory at any time during the period of manufacture of the cable for the purpose of expediting or checking progress. The living and traveling expenses of the City Engineers making these inspections and witness tests will be borne by the City of New York.
 4. **TEST IN CITY LABORATORY** - Sufficient additional length of conductor shall be provided on each reel, so that a six (6) foot sample may be removed for testing in the City's Laboratories. This sample shall be cut from the reel in the presence of the Inspector of the Department of Design and Construction and cut in two (2) three-foot lengths, each piece to be tagged showing reel number, size and type, manufacture, date, name or project & Contract number. Samples shall be handed to the Inspector for transmittal. If it is found as the result of test that the cable does not comply with the approved factory test the Contractor will be ordered to remove all cable which came off the reel and has been installed, and to replace the defective cable not used, without cost to the City. The Contractor will be held responsible for any delays in the construction program caused by the defective cable.
 5. **FINAL FIELD TEST** - After conductors are installed and connected, the City will test the work for overall insulation resistance. The Contractor shall furnish all test equipment necessary. To be acceptable, the test shall meet the requirements set forth in the NYCEC.
- I. **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.

J. 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 manufacture. 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 Contractor furnishing a device containing lugs is to coordinate with the Electrical Work Contract Documents 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. This requirement

applies to both the Contractor for Electrical Work whose branch circuit protector must have lugs of the proper size, as well as to the Contractor who furnishes the device who may have to increase the size of that particular device.

PART G - CIRCUIT PROTECTIVE DEVICES (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

SCOPE - This Section sets forth the circuit protective devices such as circuit breakers and safety switches, used in connection with Motor Control Equipment, Distribution Centers, Panelboards 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 BARRIERS** - 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. The trip rating of all circuit breakers shall not exceed 70% of frame rating.
7. 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 Specific Requirements or indicated on the Contract Drawings.
8. **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, 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.
9. **CONSTANCY OF CALIBRATION** - The tripping elements shall insure constant calibration and be capable of withstanding excessive short circuit conditions without injury.
10. **CONTACTS** shall be non-welding under operating conditions and of the silver to silver type.
11. **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.
12. **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.

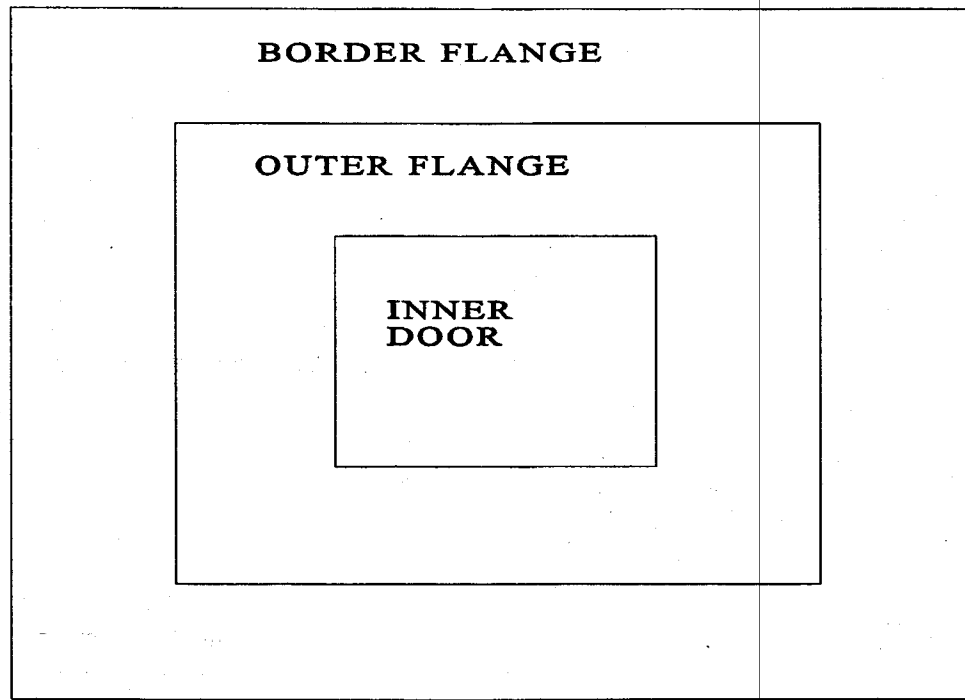
PART H - DISTRIBUTION CENTERS (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

SCOPE - This Section sets forth the construction and installation procedure for Switchboards, Panelboards and Cabinets.

- A. **PANELBOARDS--GENERAL TYPE** - The panelboards 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 deadfront 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 panelboard shall be equipped with main lugs only and capacity as required on Contract Drawings. Where main protection is required, automatic circuit breakers shall be used. A neutral bus of at least the same capacity as a live bus bar shall be provided for the connection of all neutral conductors. Each terminal shall be identified. All current carrying parts, exclusive of circuit breakers, shall be of copper with a minimum number of joints. The bus bar structure shall be a self supporting unit, firmly fastened to a ½ inch plastic board, extending the full length and width of assembly which shall serve to insulate the bus structure from the back of panel box. Other methods affording equally effective bus structure support and insulation will be given consideration. An insulating barrier shall separate neutral bus from other parts of panel.
- D. **CIRCUIT BREAKER ASSEMBLY** - The entire circuit breaker and bus bar assembly shall be mounted on an adjustable metal base or pan and secured to the back of panel box. The panel shall have edges flanged for rigidity.
- E. **PANEL MOUNTING** - The panel shall be centered in the panel box to line up with door openings and set level and plumb so that no live parts are exposed with the door open.
- F. **PANEL CABINET CONSTRUCTION AND SUPPORT**
1. Panel boxes shall be fabricated from No. 12 USSG sheet steel of no more than three-piece construction, reinforced at the corners and with continuous welds. Boxes having a back whose area is larger than 16 square feet, shall be of No. 10 USSG sheet steel and reinforced to provide ample stiffness and to prevent buckling. Boxes shall be of sufficient size to afford a clear gutter space on all sides, of not less than six (6) inches.
 2. **PANEL CABINET INSTALLATION** - When installed surface, or in panel closets, they shall be mounted on Kindorf channel, supported from floor slab to ceiling slab.
 3. 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. **CABINET TRIM** - Trim for both lighting and power panelboards shall be door-in-door type installation as depicted in **DETAIL A TRIM FOR LIGHTING AND POWER PANELBOARDS**. Construction details are to be as described in the following paragraphs.



DETAIL A TRIM FOR LIGHTING AND POWER PANELBOARD

1. **CABINET TRIM** - The trim and doors for lighting and power panels shall be made of No. 12 USSG full finish sheet steel in one (1) piece. Cabinet trim larger than 16 square feet shall be made of No. 10 USSG. The inner door shall cover the circuit breaker section only and be provided with appropriate brass hinges. The outer door shall cover the entire gutter space and shall be attached to the border type flange with appropriate hinges. Both doors for power panels shall be provided with a New York City Lock No. 511S, with key change to No. 47 and two (2) keys. For lighting panels, the inner door shall be provided with a substantial catch. All hinges shall be of the concealed type. Locks shall be flush with trim. In addition, for panels requiring doors over 48 inches in height, furnish a vault handle and a 3-point catch arranged to fasten door at top, bottom and center.
 2. The door shall close against a flange or rabbet to afford a dust tight fit. All space between the panel and the cabinet trim shall be closed by means of a sectional plate secured to the trim.
 3. The border flange of the trim shall be fastened to the box with oval head screws finished to prevent corrosion or with approved trim clamps.
 4. To facilitate installation of trim, a suitable angle iron shall be spot welded across the bottom of each trim to carry the weight of the trim while the holding screws are being put in place.
- H. **MOTOR CONTROL CENTERS** - Motor centers shall be furnished by the Contractor as indicated in the Specifications or Contract Drawings, but shall be installed by the Contractor for Electrical Work.
- I. **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.

- J. SHOP DRAWINGS - showing all details of boxes, panels, etc., shall be submitted for approval.
- K. 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 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.
- L. 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, panelboards shall be enclosed and gasketed NEMA 3R type. Panelboards located outdoors or exposed to the weather shall be cast iron.
 - 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. All of the aforementioned painting is to be done by the Contractor who furnishes the boxes and trim. Where panel trims or boxes are installed on walls which are to be painted, the previously mentioned third or finishing coat of paint shall be included in the work of the Contractor who has the Contract for general interior painting.

PART I - MOTORS (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

SCOPE - This Section sets forth the general design, construction and performance requirements, which shall apply to all motors furnished in any of the Contracts.

- A. MOTOR DESIGN - All motors shall be designed to comply with the New York State Energy Code currently in effect. 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 present 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. MOTORS OF SAME MANUFACTURER - Unless expressly permitted otherwise by the Commissioner, all motors under the same Contract shall be manufactured by the same company. Exceptions may be granted in the case of motors of 1/4 horsepower rating and smaller, or for a motor that is an integral part of the equipment, with its housing especially built for this purpose.
- C. STANDARDS OF COMPARISON - 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.
- D. 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 Building Code of the City of New York 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.

E. 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. Each Contractor who furnishes four (4) or more such motors shall also furnish, as part of its 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.

F. 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.

G. 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.

H. 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.

I. MOTORS ON LIGHTING PANELS - The largest A.C. motor permitted on branch circuits of lighting panels shall not exceed 1/4 horsepower.

J. MOTORS RATED 1/2 horsepower and larger shall be polyphase.

K. TESTS

1. **FACTORY INSPECTION** - Electrical equipment and devices (except portable) not covered by standard Specifications or tests herein prescribed shall be inspected and witnessed on test at the factory with the tested equipment being completely assembled and connected under conditions approved by the Commissioner as equivalent to the actual working conditions. Suitability and

ruggedness of the design for the specified purpose will be a condition for acceptance.

2. **SHOP TESTS** - to determine the load performance of motors shall be made in accordance with Standard C-50, of the ASA. Motors shall meet the requirements of C-50 for insulation resistance, dielectric strength, efficiency and temperature rise. Efficiency (and power factor for A.C. motors) shall be established for 50, 75 and 100 percent of rated horsepower but for motors of 100 horsepower or larger, the 125 percent loading shall be included.
 3. **TEST REPORTS** - The result of shop tests shall be submitted to the Commissioner for approval and shall be on forms approved by the City. The evaluated test data shall include a signed statement confirming the fact that the equipment meets the requirements of the standards of performance.
 4. **MANNER OF TEST** - For motors of 100 horsepower or smaller, check tests against complete tests of similar motors will be accepted. For motors larger than 100 horsepower, complete tests for each motor furnished shall be made, and certified test data sheets shall be submitted for approval, unless shop tests are required by the Detailed Specifications.
 5. **PREFERRED METHODS** - The efficiency of fractional horsepower motors shall be determined by the input-output method; for larger motors up to and including 100 horsepower, the separate loss method as specified in ASA Standards C-50 will be accepted unless otherwise required in the Specifications.
- L. **SPARE PARTS** - The Contractor who furnishes motors, including fractional horsepower, shall provide the following spare parts and accessories in connection therewith:
1. **BRUSHES** - One (1) additional set of brushes for each motor equipped with them.
 2. **BEARINGS** - For each group of three (3) and fraction thereof, of each type and size of motor, the Contractor shall furnish one (1) set of extra bearing linings or ball or roller bearings. Where less than three (3) of any type of motor is involved, one (1) set of extra bearings shall be furnished.
 3. **SPRINGS** - One (1) set of brush springs used in slip ring motor or universal type motors.
 4. **WRAPPER MARKING** - All parts shall be delivered neatly and securely wrapped and boxed, plainly tagged and marked for identification and reordering.

PART J - MOTOR CONTROL EQUIPMENT (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

SCOPE - This Section sets forth the requirements for motor controllers and associated devices, which are applicable to all Contracts under which motor control equipment is furnished or installed.

- A. **MANUFACTURER** - All control equipment furnished under one (1) 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 who furnishes a motor 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 who furnishes the motor shall furnish an approved disconnecting means to be mounted near motor.

C. TYPES OF STARTERS

1. SQUIRREL CAGE - A.C. motors of the squirrel cage type, rated from one (1) to 30 horsepower shall have magnetic across the line starters; motors rated above 30 horsepower shall be furnished with reduced voltage (autotransformer type) starter or part winding start with time delay to reduce inrush current. Size of starters shall be based on 200V. operation.
2. SLIP RING - A.C. Motors of the slip-ring type shall be furnished with primary across the line starters interlocked with secondary starting and regulating equipment. The interlocking feature shall prevent starting of the motor when the secondary controller is off the initial starting point.
3. MAGNETIC - For fractional horsepower motors, magnetic type starters are not required unless the particular method of controlling the driven equipment makes them necessary. Where individual single phase fractional horsepower motors or the sum of fractional horsepower motors controlled by an automatic device are ½ horsepower or more, magnetic starters and circuit breakers shall be used. Single phase A.C. motors smaller than ½ horsepower or three-phase A.C. motors smaller than one (1) horsepower where manual control is specified may be furnished with starters of toggle switch or push button type with inbuilt thermal protection. No additional disconnecting means is required to be furnished with this type of starter. This type of starter may also be used in series with automatic control devices such as thermostats, float and pressure switches, provided the individual motor or the sum of fractional horsepower motors is less than ½ horsepower. Means for manual operation shall be provided.

D. DISCONNECTING BREAKER - All motor starters, unless otherwise specified shall be provided with a disconnecting means in the form of a circuit breaker of the type specified under "CIRCUIT PROTECTIVE DEVICES" of the General Conditions. 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 Contractors who furnish electrically operated equipment shall give to the Contractor for Electrical Work full information relative to sizes and locations of apparatus furnished by them which require electrical connections.

Equipment being installed by the Contractor for Electrical Work shall be delivered to the Contractor for Electrical Work by other Contractors in proper time and sequence so that the Contractor for Electrical Work shall be able to meet the Contractor for Electrical Work working schedule.

I. SPARE PARTS

1. FURNISH - Each Contractor shall furnish the following spare parts pertaining to equipment furnished by each Contractor.

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.

PART K - SCHEDULE OF ELECTRICAL EQUIPMENT

Schedule D requirements for electrical motor equipment may be included in one or more of the Specifications for the separate contracts for the Project. SCHEDULE D delineates the responsibilities of each separate contractor for electrical motor control equipment. SCHEDULE D is included in the Addendum to the General Conditions. In the event of any conflict between the Specifications and SCHEDULE D, SCHEDULE D shall take precedence; provided, however, in the event of an omission from SCHEDULE D (i.e., SCHEDULE D omits either a reference to or information concerning electrical motor equipment which is set forth in the Specifications), such omission from SCHEDULE D shall have no effect and the Contractor's obligation with respect to the electrical motor control equipment, as set forth in the Specifications, shall remain in full force and effect.

1.38 Safety

- A. Each Contractor shall provide and maintain all necessary temporary closures, guard rails, and barricades to adequately protect all workers and the public from possible injury. Any Contractor requiring removal of these items shall be responsible for the replacement of same.

1.39 Interruption of Services and of Project Facilities

- A. EVENING AND WEEKEND WORK - Where the work makes temporary shutdowns of the services unavoidable, they shall be made at night or on weekends or at such times that will cause no interferences with the established routines and operations of the projects 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.

B. INTERRUPTION OF PROJECT FACILITIES

1. The Contractor shall not interrupt any of the services of the project nor interfere with these 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 will the Contractor, 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. The facility operates 24 hours per day seven (7) days a week. Toilet facilities, water and electricity

must be operational at all times. No services of the project 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.

5. Contractors shall schedule their work to avoid noise interference that will affect the normal functions of the project. In particular, construction operations producing noises that are objectionable to the project functions will be scheduled at times of day or night, day of the week, or weekend, which will not interfere with the project personnel. Any additional cost resulting from this scheduling shall be borne by the specific Contractor.
6. The Contractor shall arrange to work continuously, including overtime, if required, to assure that services will be shut down only during the time actually required to make the necessary connections to the existing work.
7. The Contractor shall give ample written notice in advance to the Commissioner and project personnel of any required shutdown.

1.40 Separation of Work Between Trades (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

- A. SCHEDULE E – Requirements for various items of work are included in the Specifications for the separate contracts for the Project and in the General Conditions. Schedule E delineates the responsibilities of each separate contractor for various items of work, as well as the extent to which certain items involve coordination between trades. Schedule E is included in the Addendum to the General Conditions. The delineation set forth in Schedule E shall be taken as specific instruction to the Contractor that it is responsible for the listed items of work. Schedule E is not intended to limit the Contractor's responsibility for supervision and coordination as set forth in Paragraph B below. In the event of any conflict between the Specifications, the General Conditions and Schedule E, Schedule E shall take precedence; provided, however, in the event of an omission from Schedule E (i.e., Schedule E omits either a reference to or information concerning an item of work which is set forth in the Specifications or the General Conditions), such omission from Schedule E shall have no effect and the Contractor's obligation to perform the work, as set forth in the Specifications or the General Conditions, shall remain in full force and effect.
- B. SUPERVISION AND COORDINATION - Each Contractor is required to supply all necessary supervision and coordination information to any other trades who are to supply work to accommodate their installations.

1.41 Shop Drawing and Material Samples Schedule

- A. SCHEDULE F – Schedule F sets forth all submittal requirements for shop drawings and material samples. Schedule F is included in the Addendum to the General Conditions. At the kick-off meeting, each Contractor must review this Schedule with the Commissioner's Representative and the 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 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 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.
- B. COORDINATION - The Resident Engineer for this project will coordinate and review the data submitted by various Contractors. Upon acceptance by the Resident Engineer, the Resident Engineer

will date and sign the schedule as approved and transmit it to the Consultant, Contractors and Project Manager within the Department of Design and Construction.

- C. ARTICLE 11 - Thereafter, this schedule will be subject to the provisions of Article 11 of the agreement and must be strictly adhered to by the Contractor.

1.42 Specific Requirements

- A. The work of this article shall be the responsibility of the Contractor for General Construction Work, unless otherwise indicated.

B. FIELD MEASUREMENTS

1. Each Contractor shall verify all dimensions and conditions on the job so that all work will properly join the existing work.
2. Each Contractor, before commencing work, shall examine all adjoining work on which each Contractor's work is in any way dependent on good workmanship in accordance to the intent of the Specification and Contract Drawings. The Contractor shall report to the Commissioner any condition that will prevent any Contractor from performing work that is below the required standard.

C. BORINGS (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

1. 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:
2. 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.
3. SOIL 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.
4. 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.
5. 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.
6. 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.

D. DEFERRED CONSTRUCTION

1. 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 under any other Contract in effect 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.

2. The Contractor shall confer with the affected Contractors and ascertain arrangements, time and facilities necessary to be made by the Contractor in order to execute the provisions specified herein.

E. WORK FENCE ENCLOSURE (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

1. The Contractor shall furnish and erect a wood fence to the extent shown on the drawings enclosing the entire project on all sides. All materials used shall be new. Any permit required for the installation and use of said fence shall be borne by the Contractor.
2. THE FENCE shall be 7'-0" high with framing construction of yellow pine, using 4" x 4" posts on not more than 6'-0" centers, with three (3) rails of at least 2" x 4" size to which shall be secured boards, 3/4" x 6" tongue and groove, laid solid and surface and double nailed to each bearing. 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. The Contractor has the option of using 1/2" exterior grade plywood in lieu of the 3/4" x 6" tongue and groove boards.
3. 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 provide with tension or sag rods for the swinging sections.
4. PAINTING - The fence and gates shall be entirely painted on the street and public sides with two (2) coats of approved lead and oil paint. The below-grade section of the posts shall be first creosoted or given a coat of tar base paint. Black stenciled signs reading "POST NO BILLS" shall be painted on fence with three (3) inch high letters on 25 foot spacings for the entire length of fence on street traffic sides. Signs shall be stenciled five (5) feet above the sidewalk.
5. It shall be the obligation of the Contractor to remove all posters, advertising signs, and markings, etc., immediately.
6. Where sidewalks are used for "drive over" purposes for Contractor vehicles, a suitable wood mat or pad shall be provided for protection of sidewalks.
7. Where required, make provision for fire hydrants, lampposts, etc.
8. REMOVAL - When directed by the Resident Engineer, the fence shall be removed.

F. PUMPING

1. 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.
2. All pumps shall be maintained at all times in proper working order.

G. RESIDENT ENGINEER'S OFFICE

1. OFFICE SPACE IN EXISTING BUILDING (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)
 - a. The Resident Engineer will arrange for office space for sole use in the building where work is in progress. The Contractor for General Construction Work shall provide and install a lockset

for the door to secure the equipment in the room. The Contractor for General Construction Work shall provide two (2) keys to the Resident Engineer. After completion of the project the Contractor for General Construction Work shall replace the original lockset on the door and ensure its proper operation.

- b. The Contractor for General Construction Work shall provide one (1) telephone, where directed, for the exclusive use of the Resident Engineer. The Contractor for General Construction Work shall pay all costs for telephone service for calls within New York City limits for the duration of the project. The telephone service shall continue for a period of 90 days following substantial completion.
- c. The Contractor for General Construction Work shall provide the following equipment:
 - (1) 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) lockers, metal olive green or gray, 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 in a grey finish by Art Steel No. 2904L or approved equal.
 - (2) 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.
 - (3) Two (2) metal wastebaskets, 13 inches square 15 inches high with rubber feet and corners by Art Metal Company No. 168 or approved equal.
 - (4) One (1) fire extinguisher one (1) quart vaporizing liquid type, brass, wall mounted by Pyrene No. C21 or approved equal.
 - (5) 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.

2. TRAILER OFFICE (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

- a. The Contractor for General Construction Work shall provide at its own cost and expense a trailer and install and connect all utility services to trailer within twenty (20) days of start of work. The trailer shall have equipment having the minimum requirements hereinafter specified. Any permit required for the installation and use of said trailer shall be borne by the Contractor.
- b. The trailer shall remain the property of the Contractor for General Construction Work except that the file cabinets herein specified, shall become the property of the City of New York.
- c. Trailer shall be office type trailer of the following general minimum dimensions:
 - 1. Length, overall: 35 feet.
 - 2. Length, inside: 32 feet.
 - 3. Width, overall: 8 feet.
 - 4. Width, inside: 7 feet, 5 inches.
- d. Trailer shall be manufactured by International Trailer Company, Model No. 1 MU-35-D or Atlantic Trailer Corporation, Model No. F-36 or approved equal.
- e. The exterior of the trailer and the wheels shall be given an approved coat of exterior enamel. The enamel finish coat shall be DUPONT orange lacquer or approved equal. 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 STRUCTURES	3-1/2"
RESIDENT ENGINEER'S OFFICE	2-1/2"

NOTE: In lieu of painting letters on trailer the Contractor for General Construction Work may substitute a sign constructed of a good quality lumber with the same type and size of lettering above.

- f. All windows and doors shall have insect aluminum screens and wire mesh protective screening.
- g. The interior shall be finished in 1/4 inch plywood. Plywood shall be finished in natural color, with two (2) coats of varnish or lacquer.
- h. The interior shall be divided by partitions into one (1) large room in front of trailer, and a private office approximately 6' x 7' at rear of trailer and a washroom located adjacent to the private office.
- i. The washroom shall be equipped with a flush toilet, wash basin with two (2) faucets, medicine cabinet, complete with supplies by Hospital Supply and Watters Labs., Inc., Model No. 1 or approved equal 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.
- j. The heating system shall consist of thermostatically controlled electric baseboard heaters capable of delivering not less than 30,000 BTU per hour and heaters shall be as manufactured by Chromalox or approved equal, sized per area with individual approved thermostats.
- k. The trailer shall be equipped with an approved two-circuit, 110-120 volt armored cable wiring system of adequate capacity complete with entrance connector with provision for grounding, enclosed fused service switch and branch circuit fuse box. The circuits for lighting, water heater, heater and convenience outlets, etc. shall be two-conductor, No. 12. The circuits for the space heaters shall be sized minimum No. 12 wire led from individual circuits in the branch circuit fuse box. Metal boxes shall be provided at all outlet points. All wiring shall conform to the requirements of the Electrical Code of the City of New York for armored cable wiring systems.
- l. Lighting to be furnished by a minimum of four (4) 48 inch, single tube, fluorescent fixtures for the large rooms and an incandescent fixture for the washroom. Lighting fixtures shall be provided with built-in pull-chain switches. A minimum of six (6) duplex convenience outlets shall be installed; four (4) in the larger room and two (2) in the smaller room. These outlets shall be in addition to connections for electric space heaters and heaters for domestic hot water.
- m. In addition to the washroom and private office, the following shall be built-in to the trailer:
 - 1. The drafting or reference table at least 60 inches long by 36 inches wide with cabinet below, head shelf at each end of the trailer, wall type plan rack at least 42 inches wide and wardrobe opposite washroom.
- n. The following movable equipment shall be furnished:
 - 1. Four (4) single pedestal desks, 42" x 32"; two (2) swivel chairs with arms and three (3) side chairs without arms to match desk. Four (4) lockers, metal olive green or gray, 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 in a grey finish by Art Steel No. 2904L or approved equal.
 - 2. One (1) 6000 B.T.U. and one (1) 9000 B.T.U. air conditioner. Wiring for the air conditioners shall be minimum No. 12 AWG fed from individual circuits in the fuse box.

3. Two (2) metal wastebaskets, olive green or grey finish, 13 inches square 15 inches high with rubber feet and corners by Art Metal Company No. 168 or approved equal.
 4. One (1) fire extinguisher one (1) quart vaporizing liquid type, brass, wall mounted by Pyrene No. C21 or approved equal.
 5. 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.
- o. **TRAILER TEMPORARY SERVICE** - Plumbing and electrical work required for the trailer will be furnished and maintained as below.
1. **PLUMBING WORK** - shall include all water supply and drainage piping required for a complete installation. Contractor to provide a temporary water service from the City's water main and extend in the trailer and properly connect up all fixtures requiring water supply. Provide all necessary soil, waste, vent and drainage piping.
 - a. Plumbing Contractor to frost-proof all water pipes to prevent freezing.
 - b. **REPAIRS, MAINTENANCE** - The Plumbing Contractor provide repairs when and as required for a period of thirty (30) days after the date of substantial completion acceptance.
 - c. **DISPOSITION OF PLUMBING WORK** - At the expiration of the time limit set forth in Subparagraph 3, the water drainage connections and piping to the office trailer shall be removed 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 for General Construction Work.
 2. **ELECTRICAL WORK** - The Contractor for Electrical Work shall furnish, install and maintain a temporary electric feeder to the trailer to be used by the Resident Engineer immediately after it is placed at the job site.
 - a. The temporary electric feeder shall be at least three (3) No. 6RH wire and shall be protected by a 60 Ampere fused safety switch, complying with codes and utility requirements having jurisdiction.
 - b. Make all arrangements and pay all costs to provide electric service.
 - c. 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 a period of thirty (30) days after the date of substantial completion acceptance.
 - d. **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.
 - e. All repair work due to these removals shall be the responsibility of the Contractor.
- p. **MAINTENANCE**
1. The Contractor for General Construction Work shall provide and pay all costs for hot and cold water, heat and fuel and regular daily janitor service. Furnish toilet paper, cloth towels and soap and maintain the field office in first-class condition, including all repairs, until 30 days after the date of substantial completion acceptance.
 2. Provide fire, extended coverage and vandalism, malicious mischief and burglary and theft

insurance coverage for the Resident Engineer's field office equipment in the amount of \$10,000. All insurance coverage shall be provided by a company licensed and authorized to do business in the State of New York. Such coverage must, under the loss payable clause or by endorsement thereon, state the following: "loss, if any, payable to the City of New York."

3. At 30 days after the date of substantial completion acceptance, or sooner as directed by the Commissioner, the Contractor for General Construction Work shall have all services disconnected and capped to the satisfaction of the Resident Engineer.
- q. The Contractor for General Construction Work shall provide and pay all costs for the following telephone services for the Resident Engineer's trailer:
 1. Two (2) desk phones
 2. One (1) wall phone (with six (6) foot extension cord) at plan table.
 3. A remote bell located on outside of trailer
 4. The telephone service shall continue for a period of 90 days following substantial completion.
- r. Should it become necessary to relocate the trailer or move the field office from one (1) location to another, Contractor for General Construction Work shall be responsible for move or moves and of reconnecting all utilities described above at new location, and shall assume all costs incurred.
- s. PERMITS - The Contractor for General Construction Work shall make the necessary arrangements and obtain all permits required for this work.
- t. The Contractor for General Construction Work 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 General Construction Work must be approved by the Commissioner before the area is rented. All insurance maintenance and equipment required for trailer field office shall also apply to rented spaces.

H. ADDITIONAL EQUIPMENT FOR THE RESIDENT ENGINEER (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

1. The Contractor for General Construction Work shall supply photo equipment not to exceed \$250. Said equipment to be specified by Resident Engineer. At the completion of the project, the equipment shall become the property of the City of New York.
2. The Contractor for General Construction Work shall provide a copy machine for paper sizes 8½ x 11 & 8½ x 14. Copier shall remain at job site 30 days beyond the Substantial Completion date.
3. The Contractor for General Construction Work shall furnish a fax machine and a telephone answering machine at commencement of the project. 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.
4. Computer Workstation (Refer to the Addendum to the General Conditions for the number of Computer Workstations to be provided):

Computers shall be provided for all contracts that have a total duration of 180 Consecutive Calendar Days (CCDs) or more, as set forth in Schedule "A". Contracts that have a total duration of less than 180 CCDs shall not require computers. Computer workstations shall be provided for

the duration of the contract.

(1) Personal Computer(s) - Workstation Configuration.

- (a) Make and Model: Dell, Gateway, Toshiba, HP, IBM, or an approved equal. (Note: an approved equal requires written approval of the Assistant Commissioner of ITS.)
- (b) Processor: 3.0 GHz Pentium 4 or faster computer - Single Processor.
- (c) System RAM: Minimum of 1 GB (Gigabytes) of SDRAM or DDR.
- (d) Hard Disk Drive(s): 80 GB (Gigabytes) 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, 2 USB Ports. Serial Ports must consist of UART 16550 Chip or better.
- (h) Video Display Card: PCI Interface with a minimum of 64 MB of RAM.
- (i) Monitor: 17" TFT LCD monitor.
- (j) Available Exp. Slots: System as configured above shall have at least two (2) full size PCI Slots available.
- (k) Fax/Modem: Internal Fax/Modem 56 Kbps speed, featuring 3COM or US Robotics Chipset and supporting a minimum of V.92 and MNP5 compliant. Integrated 10/100/1000 Ethernet.
- (l) Other Peripherals: Optical scroll Mouse, 101 Key Keyboard, Mouse Pad and all necessary cables.
- (m) Software Requirements: Microsoft Windows XP Professional, Microsoft Office 2003 Professional, Microsoft Project 2002 Professional, Adobe Acrobat reader, Anti-Virus software package with one year updates subscription, Win Zip and Auto Cad 2008 LT.

(2) All field offices requiring computers shall be provided with the following:

- (a) One (1) broad-band internet service account. This account will be active for the life of the project.
- (b) One (1) 600 DPI HP Laser Jet Printer (twelve (12) pages per minute or faster) with one (1) Extra Paper Tray (Legal Size)
- (c) All necessary Cabling
- (d) Storage Boxes for and Blank CDs/DVDs
- (e) Printer Table
- (f) UPS/Surge Suppressor combo

(3) 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.

(4) An adequate supply of blank CD's/DVD's, 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 Engineer.

(5) 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.

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 Raul Canabal, Assistant Commissioner of Information Technology Services at 718-391-1668.

I. PUBLIC TELEPHONE (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

1. The Contractor shall provide a public telephone located on the site, where directed, for the duration of the Contract.

J. 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 office of the Resident Engineer.

2. Upon completion of the project, the helmets shall become the property of the Contractor.

K. RODENT AND INSECT CONTROL

1. **DESCRIPTION** - The General 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:

a. Wet areas within the project area, including all temporary structures.

b. All exterior and interior temporary toilet structures within the project area.

c. All Field Offices and shanties within the project area of all Contractors and the Department of Design and Construction (DDC).

d. 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.

e. Any other portion of the premises requiring such special attention.

2. **MATERIALS:** 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

3. **PERSONNEL:** All pest control personnel must be supervised by an exterminator licensed in categories 7A & 8.

4. **METHODS**

- a. Application and dosage of all materials shall be done in strict compliance with the manufacturer's recommendations.
- b. Under the Maintenance of Site item (section 1.42.L), any unsanitary conditions, such as uncollected garbage or debris, resulting from the General Contractor's activities which will provide food and shelter to the resident rodent population shall be corrected by the General Contractor immediately after notification of such condition by the Commissioner

5. RODENT CONTROL WORK

- a. 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 streambanks. Live traps must be used in these seventy-five (75) foot buffer zone areas and within wetland and woodland areas.
- b. 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.
- c. 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.
- d. The General Contractor shall be responsible for collecting and disposing of all trapped and poisoned rodents found in live traps and tamper proof bait stations. The General Contractor shall also be responsible for posting and maintaining signs announcing the baiting of each particular location.

The General Contractor, under his/her Maintenance of Site operations, shall be responsible for the immediate collection and disposal of any visible rodent remains found on streets or sidewalks within the project area.

- e. It is anticipated that public complaints will be addressed to the Commissioner. The General 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.
- f. 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.

6. EDUCATION & TRAINING

- a. The General 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 General 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.
- b. Prior to application of any chemicals, the General 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.

7. RECORDS AND REPORTS

- a. The General 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.
- b. The General Contractor shall maintain records of all locations baited along with the type and quantity of rodenticide and insecticide bait used.

L. SITE SECURITY/PERIMETER SIGNAGE

1. 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

2. 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).

M. MAINTENANCE OF SITE AND ADJOINING PROPERTY

1. Take over and maintain the site, after order to start work.
2. Until the work of the Contract is completed and accepted, 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. The Contractor shall, at its own expense, except as otherwise specified, protect same and maintain them in least as good a condition as that in which the Contractor finds them.
3. 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.
4. Provide and keep in good repair all bridging and decking necessary to maintain vehicular and pedestrian traffic.
5. The Contractor shall also remove all snow and ice as it accumulates on the sidewalks within the Contract Limits Lines.

N. SAFETY PRECAUTIONS FOR CONTROL CIRCUITS

1. Control circuits, the failure of which will cause a hazard to life and property, shall comply with the New York City Dept. of Buildings, Bureau of Electrical Control requirements.

O. OBSTRUCTIONS IN DRAINAGE LINES

1. 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 for General Construction Work.

P. MAINTENANCE OF PROJECT SITE

1. Take over and maintain all project areas, after order to start work.
2. Until the work of the Contract is completed and accepted, 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.
3. 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.
4. The Contractor shall keep the space for the Resident Engineer in a clean condition.

Q. PROJECT SIGN AND RENDERING
PART 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 point and in a position where 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 same in first class condition and in proper position. Prior to fabrication, contractor shall submit an 8-1/2" x 11" color match print proof from the sign manufacturer of 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 prefinished 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. All visual components of the sign are in an Adobe *.pdf file, which is provided by the

Commissioner's representative. The file is to be opened in Acrobat Professional or Acrobat Approval in order to be saved with project information. 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. At no point in the update, saving or renaming of the file should it be locked by any user. The digital file shall be provided by DDC to the Contractor (on a CD or via E-mail) for printing.

- b. The DDC *.pdf file with names provided by the commissioner shall be reproduced at the Sign Panel size of 4' x 8' on 3M High Performance Vinyl or approved equal. The sign manufacturer is required to print from the Acrobat *.pdf provided, and must match the following colors specified by Pantone: 3025 C, 119 C, 131 C, 1805 C, 1817 C in their exact locations as indicated in the *.pdf file, and on the DDC website: www.nyc.gov/buildnyc.
- c. Color shall be created in a four-color process to reproduce Pantone Colors (per Pantone formula).
 1. Pantone color 3025 C (C-100, M-17, Y-0, K-51).
 2. Pantone color 119 C (C-0, M-12, Y-100, K-49).
 3. Pantone color 131 C (C-0, M-32, Y-100, K-23).
 4. Pantone color 1805 C (C-0, M-91, Y-100, K-23).
 5. Pantone color 1817 C (C-0, M-90, Y-100, K-66).

The typeface, Helvetica shall be used in all text-fields as is specified in the settings of the Acrobat *.pdf.

Note: 3M High Performance Vinyl or equivalent shall be guaranteed for nine (9) years. Guarantee must cover fading, peeling, chipping or cracking.

PART B – PROJECT RENDERING (REFER TO THE ADDENDUM TO THE GENERAL CONDITIONS FOR THE APPLICABILITY OF THIS ARTICLE)

1. **Responsibility:** In addition to the Project Sign, the Contractor shall furnish and install one (1) sign showing a rendering of the project. From an approved image file provided by the DDC, the Project Rendering is to be sized, printed, and mounted in an identical manner as described in Part A above for the Project Sign. Any area of the 4' X 8' panel area not filled by the rendering shall be printed in Pantone color 3025 (c-100, M-17, y-0, K-51). 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.

R. PLANT PEST CONTROL REQUIREMENTS and TREE PROTECTION REQUIREMENTS

1. **Plant Pest Control Requirements:** The Contractor for General Construction Work (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.

- a. 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.
 - b. 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.
 - c. 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.
 - d. 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.
2. **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.
- a. **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 above; (3) evaluation of the general health and condition of any infected plant material.
 - b. **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.
 - c. **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.
 1. 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).
 2. 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

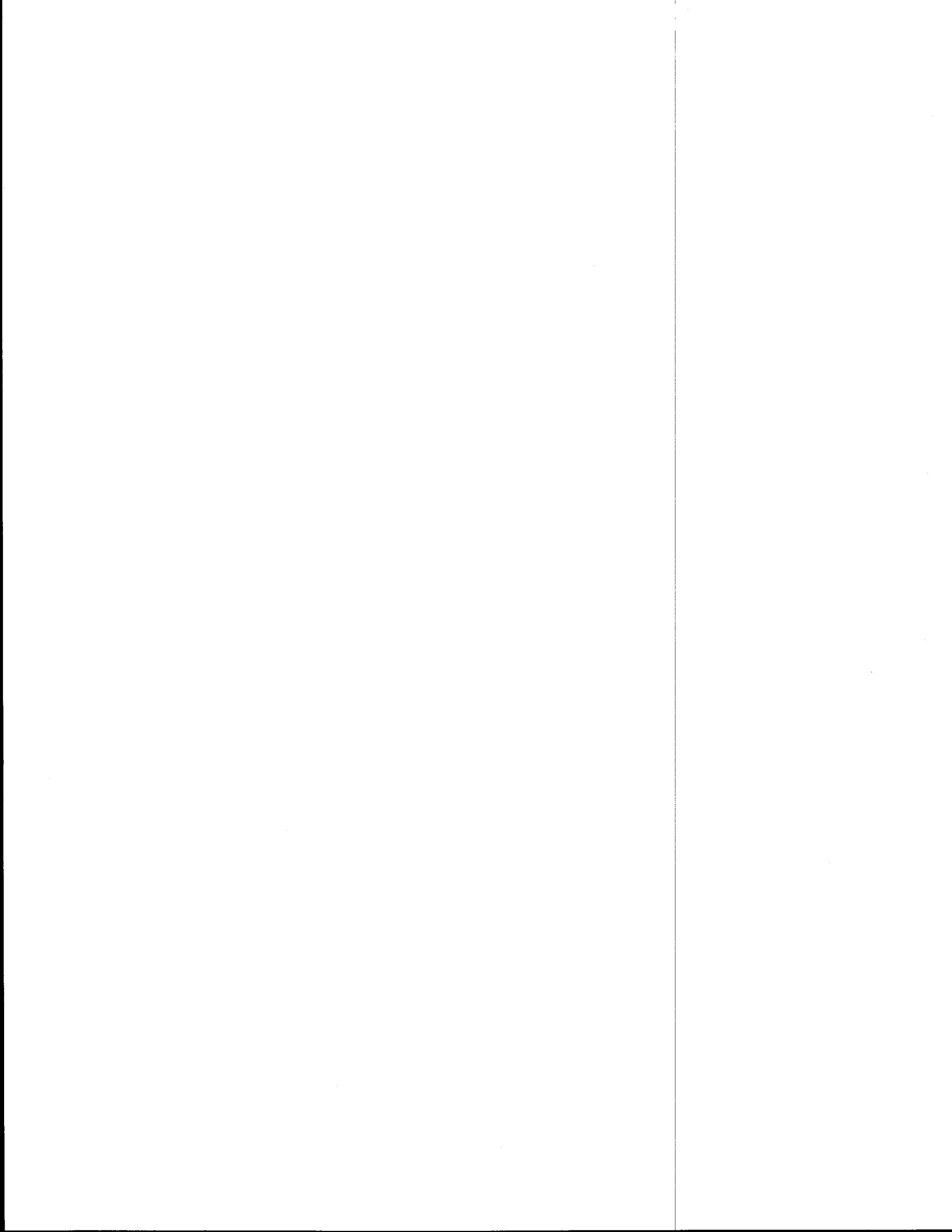
activity, including façade remediation projects.

3. 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.

d. 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.

3. 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.

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**THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF 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____





PROJECT ID:

PV272-PATH

**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:

**Construction of Garden-Wide
Pedestrian Pathway System**

LOCATION:
BOROUGH:
CITY OF NEW YORK

43-50 Main Street
Queens, 11355

CONTRACT NO. 1

GENERAL CONSTRUCTION WORK

Dept of Cultural Affairs

Abel Bainnson Butz, LLP

Date:

April 4, 2013



3-044





THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF STRUCTURES

June 3, 2013

ADDENDUM No. # 1

FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

PV272-PATH

Construction of Garden-Wide Pedestrian Pathway System

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. **Revisions to the Specifications:**
See Attachment A.

2. **Revisions to the Bid Booklet:**
Delete page 3 and replace with 3(R) & 3a(R), included with this Addendum.

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) 391-1727, or by fax at (718) 391-2615.



David Resnick, R.A.
Deputy Commissioner

Name of Bidder

By: _____



DDC PROJECT #: PV272-PATH

PROJECT NAME: Construction of Garden-Wide Pedestrian Pathway System

ATTACHMENT A – REVISIONS TO THE SPECIFICATIONS

1. Refer to Section 133419 Prefabricated Shed
Article 1.6A Quality Assurance:
Revise from "a minimum of five (3) years experience" to "a minimum of THREE (3) years experience".



SPECIAL EXPERIENCE REQUIREMENTS

Special Experience Requirements apply as indicated below.

Bidder:	General Construction	___ <input checked="" type="checkbox"/> ___	YES	___	NO
Specific Areas of Work:	General Construction	___ <input checked="" type="checkbox"/> ___	YES	___	NO
	Plumbing Work	___	YES	___	NO
	HVAC Work	___	YES	___	NO
	Electrical Work	___	YES	___	NO
Manufacturers:	General Construction	___ <input checked="" type="checkbox"/> ___	YES	___	NO
	Plumbing Work	___	YES	___	NO
	HVAC Work	___	YES	___	NO
	Electrical Work	___	YES	___	NO

- (A) **EXPERIENCE REQUIREMENTS FOR THE BIDDER:** The special experience requirements set forth below apply to the bidder indicated above. Compliance with such special experience requirements will be determined solely by the City prior to an award of contract. Failure to comply with the special experience requirements will result in the rejection of the bid as non-responsive.
- The bidder must, within the last five (5) consecutive years prior to the bid opening, have successfully completed in a timely fashion at least three (3) projects similar in scope and type to the required work.
- (B) **QUALIFICATION FORM:** For each project submitted to demonstrate compliance with the special experience requirements, the bidder must complete the Qualification Form included in the Bid Booklet. The City will only evaluate a project if the following criteria are met: (1) the project is described on the Qualification Form, and (2) all information on the Qualification Form is provided. The City will not evaluate any project which does not comply with the criteria set forth herein, including any project which is referred to only on the resume of an individual.
- (C) **CONDITIONS:** The City may, in determining compliance with the special experience requirements set forth above, consider prior projects completed by principal(s) or other employees of the bidder while affiliated with another entity, subject to the conditions set forth below.
- 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. If the bidder is relying on the prior experience of a principal or employee, it must submit documentation confirming the position held by such principal or employee in the prior entity, as well as in the bidding entity.
 - 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) **EXPERIENCE REQUIREMENTS FOR SPECIFIC AREAS OF WORK:** The special experience requirements set forth below apply to the contractor or subcontractor that will perform specific areas of work. Compliance with such experience requirements will be evaluated after an award of contract. Within two (2) weeks of such award, the contractor will be required to submit the qualifications of the contractor or subcontractor that will perform these specific areas of work. If the bidder intends to perform these specific areas of work with its own forces, it must demonstrate compliance with the special experience requirements. If the bidder intends to subcontract these specific areas of work, its proposed subcontractor(s) must demonstrate compliance with the special experience requirements. Once approved, no substitution will be permitted, unless the qualifications of the proposed replacement have been approved in writing in advance by the City. The bidder is advised to carefully



review these special experience requirements prior to submitting its bid, as such experience requirements will be strictly enforced.

- (1) Special experience requirements apply to the contractor or subcontractor that will perform specific areas of work specified in the section(s) set forth below.

General Construction

- Section 026113: Handling, Transport and Disposal of Contaminated Materials
- Section 321313: Concrete Paving
- Section 321400: Unit Paving
- Section 328000: Irrigation System
- Section 329000: Plants
- Section 329200: Turfs & Grasses
- Section 330120: Well Testing
- Section 332001: Submersible Well Pump

- (2) Special experience requirements applicable to the contractor or subcontractor that will perform specific areas of work are summarized below. Such experience requirements are set forth in full in the Addendum to the General Conditions.

- The contractor or subcontractor performing the work of this section must, within 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. In addition, for roofing work, the contractor or subcontractor must be licensed or approved by the manufacturer of the roofing system.
- For each project submitted to demonstrate compliance with the special experience requirements for specific areas of work, the contractor or proposed subcontractor will be required to complete the Qualification Form included in the Bid Booklet. The City will only evaluate a project if the following criteria are met: (1) the project is described on the Qualification Form, and (2) all information on the Qualification Form is provided. The City will not evaluate any project which does not comply with the criteria set forth herein, including any project which is referred to only on the resume of an individual.

- (F) **EXPERIENCE REQUIREMENTS FOR MANUFACTURER(S)**: The special experience requirements set forth below apply to the manufacturer that will supply or fabricate specific material or equipment. Compliance with such experience requirements will be evaluated after an award of contract. Within two (2) weeks of award, the contractor will be required to submit the qualifications of the proposed manufacturer(s). Once approved, no substitution will be permitted, unless the qualifications of the proposed replacement have been approved in writing in advance by the City.

- (1) Special experience requirements apply to the manufacturer(s) of material and/or equipment specified in the section(s) set forth below.

General Construction

- Section 328000: Irrigation System
- Section 332001: Submersible Well Pump

- (2) Special experience requirements applicable to the manufacturer(s) of specified material or equipment are summarized below. Such experience requirements are set forth in full in the Addendum to the General Conditions.

- The manufacturer providing the material or equipment specified in this section must, for the past five (5) years, have been regularly engaged in the manufacture of material or equipment similar in type to that required for this Project. Such similar material or equipment provided by the manufacturer must have been in satisfactory service for not less than five (5) years.





THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF STRUCTURES

June 14, 2013

ADDENDUM No. # 2

FOR FURNISHING ALL LABOR AND MATERIAL NECESSARY AND REQUIRED FOR:

PV272-PATH

Construction of Garden-Wide Pedestrian Pathway System

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. Revised Bid Opening Date:

The Bid Opening for the Contract described below scheduled for June 17th, 2013, at 2:00pm is rescheduled to June 25th, 2013, at 2:00pm.

Contract 1 – General Construction Work.

2. Questions from Bidders and Responses to Questions:

See Attachment A.

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) 391-1727, or by fax at (718) 391-2615.



David Resnick, R.A.
Deputy Commissioner

Name of Bidder

By: _____



DDC PROJECT #: PV272-PATH

PROJECT NAME: Construction of Garden-Wide Pedestrian Pathway System

ATTACHMENT A - BIDDERS QUESTIONS AND DDC RESPONSES

No.	Bidders Questions	DDC Responses
1	We kindly request an extension on the bid opening due date. Please advise.	The bid opening date has been postponed to June 25th, 2013.
2	Truck access will be compromised by the tree canopies. Will the trees be permitted to be pruned to allow sufficient height for truck access and equipment? A significant amount of asphalt, aggregate base and excavated materials will be involved in constructing paths.	No pruning of trees will be permitted for construction equipment. Contractor is required to use equipment which will not damage trees.
3	Reference Specification Section #026113 Handling, Transport, and Disposal of contaminated materials. Are we to assume all the excess materials are "contaminated"? If not, please advise what material is actually contaminated for bid purposes?	Refer to Specification Section #026113 Article 1.3 B.3b. Soil materials are classified as Category 2 – Non-Hazardous Contaminated Fill/ Soil. All material is to be stockpiled and remain on site.



THE CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF STRUCTURES

ADDENDUM TO THE GENERAL CONDITIONS

The General Conditions are hereby amended in accordance
with the terms and conditions set forth in this Addendum.

I. PROJECT DESCRIPTION

FMS #: **PV272-PATH**

PROJECT NAME: Construction of Garden-Wide Pedestrian Pathway System

PROJECT DESCRIPTION: The project site is the Queens Botanical Garden which includes mature trees and display gardens. The project construction area is approximately 12 Acres. The Project consists of **the removal of existing pavements, site furnishings (removal & storage of existing donor benches) and other miscellaneous existing site features. New concrete pavers and asphalt pavements shall be installed, existing donor benches reset, and new bench pads installed for future donations. Two existing wells (East & West) on site shall be fitted with new well equipment and utility sheds shall be furnished and installed to house each well head. The eastern well will provide water supply for a new automatic irrigation system to be installed for the cultivated garden area as part of this project. The western well has been recently installed. In addition to new well equipment and utility shed, new ground hydrants with water supply from the western well shall be furnished and installed at west end of the garden. Electrical work required for well equipment and automatic irrigation system shall be included. A new concrete step ramp shall be installed connecting the Garden to College Point Blvd. and to the pedestrian bridge to Flushing Meadows Corona Park. Site grading is required to improve surface drainage and drainage structures shall be furnished and installed in selected locations to convey surface flow to existing bio-swaes and retention basins. Existing trees shall be protected, pruned and fertilized. Landscape areas adjacent to the reconstructed pathways will be reconstructed with sod or topsoil to meet grades.**

PROJECT LOCATION: **43-50 Main Street, Flushing**
BOROUGH: **Queens**
CITY OF NEW YORK
ZIP CODE: **11355**
COMMUNITY BOARD #: **7**

PROJECT MANAGEMENT:

- DDC shall publicly bid and enter into a single Contract for the Project. DDC shall manage the Project using its own personnel.
- DDC shall publicly bid and enter into a single Contract 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 (September 2008) entitled "The Resident Engineer".
- DDC has entered into CM/Build Contract for the Project. The CM/Build Contractor shall be responsible for conducting a competitive bid process and entering into the contract(s) for the Project.

II. CM / BUILD CONTRACT: REVISIONS TO THE GENERAL CONDITIONS

Not Used.

III. 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.

IV. 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.

V. APPLICABILITY OF ARTICLES AND AMENDED ARTICLES

The Contractor is advised that various Articles in the General Conditions may not apply to this Project or may apply as amended. Such Articles advise the Contractor to "Refer to the Addendum to the General Conditions for the applicability of this Article." Such Articles are set forth below. A check mark indicates whether the Article (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 Article, as set forth in the General Conditions, applies to the Project. Amended Articles, if any, are set forth following this list of Articles.

<u>Article No.</u>	<u>Article</u>	<u>Sub-Article or PART</u> (if applicable)	Applies	Does not Apply	Applies as Amended
1.04	Contract Drawings	C) PRINTS		X	
1.05	Shop Drawings and Record Drawings	B) INTEGRATED DRAWINGS		X	
1.09	Surveys				X
1.13	Sleeves and Hangers			X	
1.15	Temporary Heat			X	
1.20	Progress Photographs				X
1.26	Security Guards/Fire Guards on the Site			X	
1.29	Sleeve and Penetration Drawings			X	
1.30	Location of Partitions			X	
1.34	Temporary Services	PART A	X		
		PART B		X	
1.35	Temporary Use, Operation and Maintenance of Elevators during Construction	PART A – For New Buildings Up to 15 Stories		X	
		PART B – For New Buildings Over 15 Stories		X	
		PART C – Existing Buildings		X	

<u>Article No.</u>	<u>Article</u>	<u>Sub-Article or PART</u> (if applicable)	<u>Applies</u>	<u>Does not Apply</u>	<u>Applies as Amended</u>
1.36	General Mechanical Requirements				X
1.37	General Electrical Requirements	PART B – Section A) Temporary Lighting	X		
		PART B – Section B) Site Security Lighting (New Construction)		X	
		PART D – Electrical Conduit System Including Boxes			X
		PART E – Electrical Wiring Devices			X
		PART F – Electrical Conductors and Terminators	X		
		PART G – Circuit Protective Devices	X		
		PART H – Distribution Centers			X
		PART I – Motors	X		
		PART J – Motor Control Equipment			X
1.40	Separation Between Trades			X	
1.42	Specific Requirements	C) BORINGS			X
		E) WORK FENCE ENCLOSURE			X
		G) RESIDENT ENGINEER'S OFFICE			
		1. OFFICE SPACE IN EXISTING BUILDING			X
		2. TRAILER OFFICE		X	
		H) ADDITIONAL EQUIPMENT FOR THE RESIDENT ENGINEER	X		
		I) PUBLIC TELEPHONE	X		
		Q) PROJECT SIGN AND RENDERING			
		PART B – PROJECT RENDERING		X	

COMPUTER WORKSTATIONS

H) Number of Computer Workstations to be provided as outlined in Article 1.42 H, item 4:

AMENDED ARTICLES

The Contractor is advised that the amended Articles set forth below are included in the General Conditions and apply to the Project.

1.09 Surveys

- Delete** Paragraph A
- Modify** Paragraph B – delete “other”
- Delete** Paragraph E. FOUNDATIONS
- Delete** Paragraph F. WALLS
- Delete** Paragraph H and I

1.20 Progress Photographs

Modify Paragraph B second sentence: delete ...”within and on the exterior of the structure”

Add:

Detailed photo documentation or videotape of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities, shall be furnished along with photo key plan.

Provide digital files of all photos/video in addition to specified prints.

1.36 General Mechanical Requirements.

- Delete** all references to “duct work”.
- Delete** ...”of other contracts”
- Delete** Paragraph E. SHOP DRAWING SUBMITTALS.
- Delete** Paragraphs J through M.
- Delete** Paragraphs O through Q.
- Delete** Paragraph T

1.37 General Electrical Requirements.

- Delete** PART D, Paragraph A. CONDUIT TYPES, Sub-paragraph 2.
- Delete** PART D, Paragraph B. INSTALLATIONS AND APPLICATIONS, Sub-paragraph 5.
- Delete** PART E, Paragraph B. RECEPTACLES, Sub-paragraph 2.
- Delete** PART E, Paragraph B. RECEPTACLES, Sub-paragraph 3.
- Delete** PART E, Paragraph C. CLOCK HANGERS.
- Delete** PART H, Paragraph H. MOTOR CONTROL CENTERS.
- Delete** PART J, Paragraph C. TYPES OF STARTERS

1.42 Special Requirements, Paragraph C. BORINGS

Delete sub-paragraph 3,4

1.42 Special Requirements, Paragraph E. Work Fence Enclosure

- Modify** sub-paragraph 1 –delete “wood”; delete ...”enclosing the entire project on all sides.”
- Replace** sub-paragraph 2 with: 2. THE FENCE shall be constructed of materials and in a manner as described: Minimum 2-inch, 0.148-inch- thick, galvanized steel, 2” chain-link fabric fencing; minimum 8 feet high with galvanized steel pipe posts; minimum 2-1/2-inch- OD line posts and 3-inch- OD corner and pull posts , with galvanized wire top strand.
- Modify** sub-paragraph 3 to delete second and third sentences
- Delete** sub-paragraph 4.

1.42 Special Requirements, Paragraph G. Resident Engineers Office,

1. Office Space In Existing Building

- a. **Revise:** The Resident Engineer will arrange for office space (for sole use) using the existing trailer office on site. The Contractor for General Construction Work shall provide and install a lockset for the door to secure the equipment in the room. The Contractor for General Construction Work shall provide two (2) keys to the Resident Engineer. After completion of the project the Contractor for General Construction Work shall replace the original lockset on the door and ensure its proper operation.
- c. (1) DELETE
(2) DELETE
(3) DELETE
(4) DELETE

VI. ADDITIONAL ARTICLES

The Contractor is advised that the additional Articles set forth below are included in the General Conditions and apply to the Project.

Article 1.42 Specific Requirements –Add Article S

Articles S. Queens Botanical Garden Path Project (QBG) Contractors Guidelines

QBG Contacts and General Hours of Operation

Phone: 718-886-3800

Website: www.queensbotanical.org

Hours:

March 31- October 31

Tuesday- Sunday 8:00 AM – 6:00 PM

November 1 – March 30

Tuesday- Sunday 8:00 AM – 4:30 PM

QBG is closed Monday except legal holidays.

QBG Facilities Management

Note: Contact QBG Facilities Manager only if DDC CPM is unavailable

Peter Sansone; Facilities Manager/ Executive Asst; ext. 210 psansone@queensbotanical.org

Susan Lacerte; Executive Director; ext.205 slacerte@queensbotanical.org

Contractor Access

Contractor will access QBG site from entrance on corner of Blossom Ave and Crommelin St. All workers are to sign in at DDC trailer.

Staging Area

Staging area is located on the west side of the Garden north of the path to the College Point entrance (see phasing plan). Haul road shall be constructed from entrance gate to staging area. Contractor to provide staging area enclosure 8' High Chain Link Fence erected as per approved Construction Fence. Fencing shall be stable and free

standing and the Contractor shall install and maintain temporary lighting as approved by QBG and DDC; power source to be coordinated by DDC/QBG.

All existing surfaces including but not limited to concrete pavers, concrete steps, metal railings, doors, stucco wall finishes are to be protected at all times. Existing trees adjacent to haul road are to be protected at all times. Staging area shall be cleaned and kept dust free. Damaged or excess materials shall be removed and disposed of promptly. All tools and equipment stored in staging area shall be stored in lock box(s), QBG/DDC are not responsible for stolen or missing tools and/or materials. Construction trailer shall be located within staging area; Contractor is responsible for all necessary fees and permits

Work Site Responsibilities

Contractor is responsible for documenting existing conditions prior to mobilization and submitting documentation to QBG and DDC for verification. Any damages to any existing conditions are to be repaired by Contractor as directed.

Work site is to be clean, well-organized and compact as possible to minimize disturbance to QBG.

Organic Landscape Practices

In keeping with QBG's mission to remain a Platinum LEED Certified Site using sustainable cultivation practices, the Landscape Contractor must have special experience in Turf and Planting employing organic horticultural practices.

Other Active Projects

Coordination with other on-going projects on-site may be required.

Article 1.42 Specific Requirements – Add Article T

PV272PATH Queens Botanical Garden Path Project (QBG) Phasing Plan

Note: Phasing Plan sequence of work does not specify ancillary work necessary for installation and included in construction contract. Please see Contract Drawings for phasing plan.

Coordinate with QBG and DDC to discuss Garden operation and event schedule.

- 1 PHASE 1. Cherry Circle and Circle Garden: (6 months)
- 2 PHASE 2. Northeast Corner: (6 months)
- 3 PHASE 3. Oak Allee : (3 months)
- 4 PHASE 4. Cultivated Gardens: (4 months)
- 5 PHASE 5. West Gardens: (6 months)

VII. SPECIAL EXPERIENCE REQUIREMENTS FOR THE PROJECT

- (1) **GENERAL:** The following are set forth below: (a) Special Experience Requirements applicable to the contractor or subcontractor that will perform specific areas of work, and (b) Special Experience Requirements applicable to the manufacturer that will provide specific material or equipment.
- (2) **REVISION OF SPECIFICATIONS AND DRAWINGS:** In the event the Specifications and/or the Contract Drawings contain any Special Experience Requirement that is not set forth below, such Special Experience Requirement is deemed deleted, except as otherwise expressly provided in Section VIII of this Addendum.
- (3) **SPECIAL EXPERIENCE REQUIREMENTS FOR SPECIFIC AREAS OF WORK:** The special experience requirements set forth below apply to the contractor or subcontractor that will perform specific areas of work. Compliance with such experience requirements will be evaluated after an award of contract. Within two (2) weeks of such award, the contractor will be required to submit the qualifications of the contractor or subcontractor that will perform these specific areas of work. If the contractor intends to perform these specific areas of work with its own forces, it must demonstrate compliance with the special experience requirements. If the contractor intends to subcontract these specific areas of work, the proposed subcontractor(s) must demonstrate compliance with the special experience requirements. Once approved, no substitution will be permitted, unless the qualifications of the proposed replacement have been approved in writing in advance by the City.
 - (a) **Special Experience Requirement #1:** The contractor or subcontractor performing the work of this section must, within 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. This Special Experience Requirement applies to the contractor or subcontractor that will perform specific areas of work specified in the sections set forth below.

General Construction Work:

- Section 026113: Handling, Transport and Disposal of Contaminated Materials
- Section 321313: Concrete Paving
- Section 321400: Unit Paving
- Section 328000: Irrigation System
- Section 329000: Plants
- Section 329200: Turfs & Grasses
- Section 330121: Well Testing
- Section 332001: Submersible Well Pump

- (b) Special Experience Requirement #2: The manufacturer providing the material or equipment specified in this section must, for the past five (5) years, have been regularly engaged in the manufacture of material or equipment similar in type to that required for this Project. Such similar material or equipment provided by the manufacturer must have been in satisfactory service for not less than five (5) years. This Special Experience Requirement applies to the manufacturer that will provide material or equipment specified in the section(s) set forth below.

General Construction Work:

- Section 328000: Irrigation System
- Section 332001: Submersible Well Pump

VIII. 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 the contract.

REFERENCE	ITEM	REQUIREMENTS	CONTRACT FOR GENERAL CONSTRUCTION
Article 14 Contract	Time of Completion	Consecutive Calendar Days	730 CCDS
Article 15 Contract	Liquidated Damages	For each consecutive calendar day over completion time	\$ 600
Article 17 Contract	Sub- contracts	Not to exceed percent of Contract Price	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	Maintenance & Guaranty	Percent of Contract Price	1%
Article 77 Contract	MWBE Program		See Subcontractor Utilization Plan in the Bid Booklet

SCHEDULE A (FOR PUBLICLY BID PROJECTS)

Relating to Article 22 - Insurance

PART I. 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
<p>■ Commercial General Liability Art. 22.1.1</p>	<p>\$ 1,000,000 per occurrence \$ 2,000,000 aggregate (applicable separately to this Project)</p> <p>Additional Insureds: 1. City of New York, including its officials and employees. 2. Queens Botanical Garden, including its officials and employees.</p>
<p>■ Workers' Compensation Art. 22.1.2</p> <p>■ Disability Benefits Insurance Art. 22.1.2</p> <p>■ Employers' Liability Art. 22.1.3</p> <p><input type="checkbox"/> Jones Act Art. 22.1.4</p> <p><input type="checkbox"/> U.S. Longshoremen's and Harbor Workers Compensation Act Art. 22.1.4</p>	<p>Workers' Compensation: Statutory per New York State law without regard to jurisdiction</p> <p>Disability Benefits Insurance: Statutory per New York State law without regard to jurisdiction</p> <p>Employers' Liability: \$1,000,000 each accident</p>
<p><input type="checkbox"/> Builders' Risk Art 22.1.5</p> <p>■ Installation Floater</p>	<p>Applicable to Builders' Risk or Installation Floater:</p> <p>_____ 100 _____ % of total value of Work</p> <p>City of New York and the Contractor named as Loss Payee for the Work in order of precedence, as their interests may appear.</p> <p><u>Note:</u> Article 22.1.5 is revised by deleting the following sentence: "Such policy shall name as insureds the City, the Contractor, and its Subcontractors". This deletion applies to Builders' Risk and Installation Floater.</p>

SCHEDULE A (FOR PUBLICLY BID PROJECTS)

Relating to Article 22 - Insurance

PART I. 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 checked="" type="checkbox"/> Comprehensive Business Auto Coverage Art. 22.1.6	\$ <u>1,000,000</u> per accident If vehicles are used for transporting hazardous materials, the Contractor shall provide pollution liability broadened coverage for covered autos (endorsement CA 99 48) as well as proof of MCS 90 Additional Insured: 1. City of New York, including its officials and employees
<input type="checkbox"/> Pollution/Environmental Liability Art. 22.1.7	\$ _____ 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. 22.1.8(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 I. 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.

<input type="checkbox"/> Ship Repairers Legal Liability Art. 22.1.8(b)	\$ _____ each occurrence [Contracting agency to fill in total value of City vessels involved]
<input type="checkbox"/> Collision Liability/Towers Liability Art. 22.1.8(c)	\$ _____ 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. 22.1.8(d)	\$ _____ each occurrence Additional Insureds: 1. City of New York, including its officials and employees, and 2. _____ 3. _____
[OTHER] Art. 22.1.9 <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 I. 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. 22.1.9</p> <p><input type="checkbox"/> Asbestos Liability</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. Queens Botanical Garden 3. _____</p>
<p>[OTHER] Art. 22.1.9</p> <p><input type="checkbox"/> Boiler Insurance</p>	<p>\$200,000</p>
<p>[OTHER] Art. 22.1.9</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 \$3,000,000 aggregate</p>

SCHEDULE A (FOR PUBLICLY BID PROJECTS)

Relating to Article 22 - Insurance

PART II. Broker's Certification

[Pursuant to Article 22.3.1(a) of the **Contract**, every Certificate of Insurance must be accompanied by either the following certification by the broker setting forth the following text and required information and signatures or complete copies of all policies referenced in the Certificate of Insurance. In the absence of completed policies, binders are acceptable.]

CERTIFICATION BY BROKER

The undersigned insurance broker represents to the City of New York that the attached Certificate of Insurance is accurate in all material respects, and that the described insurance is effective as of the date of this Certification.

[Name of broker (typewritten)]

[Address of broker (typewritten)]

[Signature of authorized official or broker]

[Name and title of authorized official (typewritten)]

Sworn to before me this
____ day of _____, 201__

NOTARY PUBLIC

SCHEDULE A (FOR PUBLICLY BID PROJECTS)

Relating to Article 22 - Insurance

PART III. 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: Article 1.22 of the 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
133419	Metal Roof	20 years
133419	Fiber Cement Exterior Siding	20 years
133419	Wall & Roofing Waterproofing	15 years
133419	Vapor Shield	20 years
133419	Windows	1 years
133419	Doors	1 years
260221	Motor Controller	2 years
321400	All Concrete Pavers	2 year
328000	Controller	1 year
328000	Controller Enclosure	1 year
328000	Line Decoders	1 year
328000	Flow Sensors	1 year
328000	Hand Held Remote	1 year
328000	Drip Bubblers & Drip Spray Emitters	1 year
328000	Sprinklers	1 year

328000	Spray Heads	1 year
328000	Swing Joints	1 year
328000	Valves	1 year
328000	Valve Boxes	1 year
328000	Rain Sensor	1 year
332001	Submersible Well Pump Components and Assembly	2 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.

SCHEDULE C

Contract Drawings

(Reference: Article 1.04(A) of the General Conditions)

The Schedule set forth below lists all Contract Drawings for the Project.

LANDSCAPE:

T-100.00	Title Sheet
G-100.00	Notes
G-101.00	Phasing Plan
S-100.00	Topographical Survey 1
S-100.10	Topographical Survey 1.10
S-101.00	Topographical Survey 2
S-102.00	Topographical Survey 3
S-103.00	Topographical Survey 4
S-104.00	Topographical Survey 5
S-104.10	Topographical Survey 6
B-100.00	Borings Plan 1
B-101.00	Borings Plan 2
L-100.00	Tree Protection, Erosion Control and Removals Plan 1
L-101.00	Tree Protection, Erosion Control and Removals Plan 2
L-102.00	Tree Protection, Erosion Control and Removals Plan 3
L-103.00	Tree Protection, Erosion Control and Removals Plan 4
L-104.00	Tree Protection, Erosion Control and Removals Plan 5
L-105.00	Tree Protection, Erosion Control and Removals Plan 6
L-200.00	Materials and Layout Plan 1
L-201.00	Materials and Layout Plan 2
L-202.00	Materials and Layout Plan 3
L-203.00	Materials and Layout Plan 4
L-204.00	Materials and Layout Plan 5
L-205.00	Materials and Layout Plan 6
L-300.00	Grading, Drainage and Planting Plan 1
L-301.00	Grading, Drainage and Planting Plan 2
L-302.00	Grading, Drainage and Planting Plan 3
L-303.00	Grading, Drainage and Planting Plan 4
L-304.00	Grading, Drainage and Planting Plan 5
L-305.00	Grading, Drainage and Planting Plan 6
L-400.00	Entry Plaza Enlargement Plans & Details
L-401.00	Paving Enlargement Plans
L-500.00	Site Details 1
L-501.00	Site Details 2
L-502.00	Site Details 3

PLUMBING:

P-100.00	Plumbing Notes and Legend
P-101.00	Plumbing Plan 1
P-102.00	Plumbing Plan 2
P-200.00	West Well House Details
P-201.00	East Well House Details
P-202.00	Plumbing Details

IRRIGATION:

I-201.00	Irrigation Plan 1
I-202.00	Irrigation Plan 2
I-203.00	Irrigation Enlargement Plan 1
I-204.00	Irrigation Enlargement Plan 2
I-501.00	Irrigation Details 1
I-502.00	Irrigation Details 2

ELECTRICAL:

E-100.00	Electrical General Notes, Legend, Abbreviations and One-Line Diagrams
E-101.00	Electrical Site Plan
E-200.00	West Well House Details & Enlarged Plan
E-201.00	East Well House Details
E-202.00	Electrical Details

SCHEDULE D

Electrical Motor Control Equipment

(Reference: Article 1.37, Part K of the General Conditions)

No Text

SCHEDULE E

No Text

SCHEDULE F

Shop Drawing and Material Samples Schedule

(Reference: Article 1.41 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: _____ DATE: _____
 TELEPHONE NUMBER: _____
 DDC PROJECT MANAGER: _____ APPROVED: _____
 TELEPHONE NUMBER: _____ (DDC RESIDENT ENGINEER/CPM)

REPORT DATE	FMS ID #/PROJECT ID #: PV272-PATH CONTRACT REGISTRATION #: PROJECT NAME: Construction of Garden-Wide Pedestrian Pathway System	TRADE: SHOP DRAWING LOG SHEET #										USE SEPARATE SHEET FOR EACH TRADE						
		SUBMITTAL				REQD DEL.	FABRIC. TIME	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION		
SPEC. SECT. #	DESCRIPTION	COORD. WITH CONTR.	SHOP DWG.	REPORTS	SAMPLE	CAT. CUTS	SUB. DATE	REQD DEL.	FABRIC. TIME	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION	REC'D	RET'D	ACTION
015639	TEMP TREE AND PLANT PROTECTION	X			X	X												
024119	SELECTIVE SITE DEMOLITION	X		X														
026113	HANDLING, TRANSPORT AND DISPOSAL OF CONTAMINATED MATERIALS	X		X														
033000	CAST-IN-PLACE CONCRETE	X	X	X		X												

321373	CONCRETE PAVING JOINT SEALANTS	X																X	X			
321400	UNIT PAVING	X			X													X	X			
328000	IRRIGATION SYSTEM	X	X															X	X			
329200	TURF AND GRASSES	X							X									X	X			
329300	PLANTS	X							X									X	X			
329600	TRANSPLANTING	X																X	X			
330121	WELL TESTING	X							X									X	X			
331103	COPPER TUBING AND FITTINGS UNDERGROUND	X																X	X			
331220	GROUND HYDRANTS	X																X	X			
331300	FLUSHING OF WATER UTILITY DISTRIBUTION	X																				
332001	SUBMERSIBLE WELL PUMP	X							X									X	X			
334100	STORM UTILITY DRAINAGE PIPING								X										X	X		

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330121 – WELL TESTING.....

331103 – COPPER TUBING AND FITTINGS UNDERGROUND.....

331220 – GROUND HYDRANTS.....

331300 – FLUSHING OF WATER UTILITY DISTRIBUTION.....

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APPENDIX A – WASTE CHARACTERIZATION REPORT, prepared by Langan

END OF TABLE OF CONTENTS

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CONTRACT # 1
GENERAL CONSTRUCTION WORK

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SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

- A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.
- B. Certified Arborist inspection services before, during and following construction.
- C. Related Sections:
 - 1. Section 311000 "Site Clearing"
 - 2. Section 312500 "Erosion and Sedimentation Controls"
 - 3. Section 329300 "Plants"

1.3 DEFINITIONS

- A. Caliper: Diameter of a trunk measured by a diameter tape at 6 inches above the ground for trees up to, and including, 4-inch size; and 12 inches above the ground for trees larger than 4-inch size.
- B. DBH: Diameter breast height; diameter of a trunk as measured by a diameter tape [at a height 54 inches above the ground line for trees with caliper of 8 inches or greater as measured at a height of 12 inches above the root flair.
- C. Tree Units: Unit of measure used for trees within specified DBH range such that trees with a DBH over 6 inches to 12 inches equals 1 tree unit (base unit). Tree DBH ranges to tree units are as follows:

<u>TREE DBH</u>	<u>TREE UNITS</u>
Over 0" to 6"	0.75
Over 6" to 12"	1.00 (base unit)
Over 12" to 18"	1.25
Over 18" to 24"	1.5
Over 24" to 30"	2.0
Over 30" to 36"	2.5
Over 36" to 42"	3.0
Over 42" to 48"	3.5
Over 48"	4.0

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- D. Tree-Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction and within the drip line of existing trees above six 6" inches in caliper as indicated on Drawings.
- E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Verification: For each type of the following:
 - 1. Organic Mulch: 1-quart volume of organic mulch; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch.
- C. Qualification Data: For ISA Certified Arborist and tree service firm.
- D. Certification: From Certified Arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.
- E. Maintenance Recommendations: From Certified Arborist, written recommendations for care and protection of trees affected by construction during and after completing the Work.
- F. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.
 - 1. Use sufficiently detailed photographs or videotape.
 - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

1.5 QUALITY ASSURANCE

- A. Certified Arborist Qualifications: Certified Arborist-Municipal Specialist as certified by ISA with a minimum of five years working as a certified arborist.
- B. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed temporary tree and plant protection work similar to that required for this Project and that will assign an experienced, qualified Certified Arborist to Project site during execution of the Work.
- C. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review methods and procedures related to temporary tree and plant protection including, but not limited to, the following:
 - a. Construction schedule. Verify availability of materials, personnel, and equipment needed to make progress and avoid delays.

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- b. Enforcing requirements for protection zones.
- c. Certified Arborist's responsibilities.
- d. Field quality control.

1.6 PROJECT CONDITIONS

- A. The following practices are prohibited within protection zones:
 1. Storage of construction materials, debris, or excavated material.
 2. Parking vehicles or equipment.
 3. Foot traffic.
 4. Erection of sheds or structures.
 5. Impoundment of water.
 6. Excavation or other digging unless otherwise indicated.
 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- B. Do not direct vehicle or equipment exhaust toward protection zones.
- C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Temporary Wooden Tree Guards: Lumber shall be Yellow Pine, Douglas Fir or Spruce. Nails shall be galvanized. No paint will be required.
 1. Tree Wrap: Tree wrap shall be snow fencing composed of commercially woven wood slats and wire.
- B. Snow Fencing: Shall be commercially woven wood slats with 'U' shaped, 13 gauge, rustproof steel line posts.
 1. Height: 4 feet.
 2. Line Post Color: Black or Green.
- C. Organic Mulch: Free from deleterious materials and suitable as a top dressing for trees and shrubs, consisting of one of the following:
 1. Type: Wood chips.
 2. Size Range: 3 inches maximum, 1/2 inch minimum.
 3. Color: Natural.
- D. Plywood: New or gently used four (4) foot by eight (8) foot sheets with a minimum thickness of one-half (1/2") inch. CCA treated lumber is not acceptable for this Work. Corrosion resistant steel hardware to fasten plywood sheets.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.
- B. Certified Arborist shall perform a detail site inspection of all plant material to be effected directly or indirectly by construction prior to the onset of each phase. The Certified Arborist will prepare a written report documenting the conditions of existing trees and plant materials. The Certified Arborist will advise the Commissioner on protection and further treatments during construction as deemed necessary.

3.2 PREPARATION

- A. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
- B. Tree-Protection Zones: Place and fasten plywood sheets inside tree-protection zones as necessary to adequately protect root zones and as directed by the Commissioner and apply mulch as directed by the Commissioner.
 - 1. Saw cut and fasten plywood sheets if necessary to fit into tree root areas.
 - 2. Plywood sheets shall remain in place and not be moved or removed until all work that might cause compaction or root damage is complete and not without Certified Arborist's and Commissioner's approval.
 - 3. Apply 6-inch average thickness of organic mulch as directed by Commissioner. Do not place mulch within 6 inches of tree trunks.
 - 4. Plywood sheets, all associated hardware, and mulch shall be removed as necessary to facilitate construction and when they are no longer required on site as determined by the Certified Arborist and as approved by the Commissioner.

3.3 TREE- AND PLANT-PROTECTION

- A. Temporary Wooden Tree Guards: shall be installed where shown on the contract drawings. Posts shall be installed at approximately eight feet on center, unless otherwise noted on the plans or directed by the Commissioner. They shall be installed with wooden rails securely attached with galvanized nails to the wooden posts that are driven 18" into the ground, without damage to existing trees. If any temporary wooden tree guards or wrap are damaged during the course of the work, they shall be immediately repaired, or replaced by a new temporary wooden tree guard or wrap at no additional expense. Temporary wooden tree guards and wrap shall remain in place and not be moved or removed without written permission of the Commissioner until all work which might cause damage or defacement has been completed.
- B. Maintain protection zones free of weeds and trash.

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- C. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Commissioner.
- D. Maintain protection-zone fencing and signage in good condition as acceptable to Commissioner and remove when construction operations are complete and equipment has been removed from the site.
 - 1. Do not remove protection-zone fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
 - 2. Temporary access is permitted subject to preapproval in writing by Certified Arborist if a root buffer effective against soil compaction is constructed as directed by Certified Arborist. Maintain root buffer so long as access is permitted.

3.4 EXCAVATION

- A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Section 312000 "Earth Moving".
- B. Trenching near Trees: Where utility trenches are required within protection zones, hand excavate under or around tree roots or tunnel under the roots by drilling, auger boring, or pipe jacking. Air spading will be allowed as deemed necessary by the Commissioner. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots as required for root pruning.
- C. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches back from new construction and as required for root pruning.
- D. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with compost and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3.5 ROOT PRUNING

- A. Prune roots that are affected by temporary and permanent construction. Prune roots as directed by the Certified Arborist as approved by the Commissioner. Pruning shall proceed as follows:
 - 1. All work shall be performed in a professional manner and in accordance with the most current revision of the American National Standards for Tree Care Operations: Tree, Shrub, and Other Woody Plant Maintenance and Standard Practices, A-300- (Part 1)-2008 Pruning, published by the American National Standards Institute (ANSI).
 - 2. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments designed to cut roots cleanly; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
 - 3. Cut Ends: Do not paint cut root ends.

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4. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
 5. Cover exposed roots with burlap and water regularly.
 6. Backfill as soon as possible according to requirements in Section 312000 "Earth Moving".
- B. Root Pruning at Edge of Protection Zone: As approved by the Commissioner, prune roots flush with the edge of the protection zone, by cleanly cutting all roots to the depth of the required excavation.
- C. Root Pruning within Protection Zone: As approved by the Commissioner, clear and excavate by hand to the depth of the required excavation to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.
- D. All root pruning operations shall be conducted in the presence of, and under the direct supervision of, the Certified Arborist.

3.6 CROWN PRUNING

- A. Prune branches that are affected by temporary and permanent construction. Prune branches as follows:
1. All work shall be performed in a professional manner and in accordance with the most current revision of the American National Standards for Tree Care Operations: Tree, Shrub, and Other Woody Plant Maintenance and Standard Practices, A-300- (Part 1)-2008 Pruning, published by the American National Standards Institute (ANSI).
 2. Prune trees to remain to compensate for root loss caused by damaging or cutting root system. Provide subsequent maintenance during Contract period as recommended by Certified Arborist.
 3. Cut branches with sharp pruning instruments; do not break or chop.
 4. Do not apply pruning paint to wounds.
- B. Chip removed branches and dispose of off-site.
- C. All crown pruning operations shall be conducted in the presence of, and under the direct supervision of a Certified Arborist, and subject to the Commissioner's approval.

3.7 REGRADING

- A. Lowering Grade: Where new finish grade is indicated below existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- B. Lowering Grade within Protection Zone: Where new finish grade is indicated below existing grade around trees, slope grade away from trees as recommended by Certified Arborist unless otherwise indicated.
1. Root Pruning: Prune tree roots exposed by lowering the grade. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots as required for root pruning.

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- C. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone. Maintain existing grades within the protection zone.
- D. Minor Fill within Protection Zone: Where existing grade is 2 inches or less below elevation of finish grade, fill with topsoil. Place topsoil in a single uncompacted layer and hand grade to required finish elevations.

3.8 SITE INSPECTIONS

- A. Site Inspections: Engage a Certified Arborist to direct plant-protection measures in the vicinity of trees, shrubs, and other vegetation indicated to remain and to prepare site inspection reports. Site inspections will be performed on a weekly basis with reports issued to the Commissioner with 48 hours.

3.9 REPAIR AND REPLACEMENT

- A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Commissioner.
 - 1. Submit details of proposed root cutting and tree and shrub repairs.
 - 2. Have Certified Arborist perform the root cutting, branch pruning, and damage repair of trees and shrubs.
 - 3. Treat damaged trunks, limbs, and roots according to Certified Arborist's written instructions.
 - 4. Perform repairs within 24 hours.
 - 5. Replace vegetation that cannot be repaired and restored to full-growth status, as determined by Commissioner.
- B. Trees: Remove and replace trees indicated to remain that are more than 25 percent dead or in an unhealthy condition or are damaged during construction operations that Commissioner determines are incapable of restoring to normal growth pattern.
 - 1. Provide new trees of same size and species as those being replaced for each tree that measures 12 inches or smaller in caliper size.
 - 2. For trees being replaced that measure more than 4 inches in caliper size, the value of the existing tree(s) shall be determined by an independent certified arborist. Quantity and size(s) of replacement tree(s) shall be of a value equivalent to the damaged/removed tree. Replacement tree quantity and size shall be as directed by the Commissioner.
 - a. Species: Species selected by Commissioner.
 - 3. Plant and maintain new trees as specified in Section 329300 "Plants."

3.10 DECOMPACTION

- A. Soil Aeration where directed by Commissioner, aerate surface soil compacted during construction. Aerate 10 feet beyond drip line and no closer than 36 inches to tree trunk. Drill

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2-inch- diameter holes a minimum of 12 inches deep at 24 inches O.C. Backfill holes with an equal mix of augered soil and sand.

3.11 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove excess excavated material, displaced trees, trash and debris, and legally dispose of them off City of New York's property.

END OF SECTION 025639

SECTION 024119 - SELECTIVE SITE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

A. Section Includes:

- 1. Demolition and removal of selected site elements.
- 2. Salvage of existing items to be reused or recycled.
- 3. Remove existing East Well House wood framed building, deep well pump, pump controller, conduit, wiring, receptacles, panel, bladder tank, valves and piping within building to location on site indicated on the drawings. Supply conduit and wire to East Well House from Administration Building to remain, wiring to be de-energized while existing building is removed and new building is installed. New building to be located in order to reuse the existing supply conduit and wiring.

B. Related Requirements:

- 1. Division 31 Section "Site Clearing" for site clearing and removal of above- and below-grade improvements.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to City of New York ready for reuse.
- C. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.
- D. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.
- B. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to City of New York that may be encountered during selective demolition remain City of New York's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to City of New York.

1.5 PREINSTALLATION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.
 - 1. Inspect and discuss condition of construction to be selectively demolished.
 - 2. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 - 3. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 - 4. Review areas where existing construction is to remain and requires protection.

1.6 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection. Indicate proposed locations and construction of barriers.
- B. Schedule of Selective Demolition Activities: Indicate the following:
 - 1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure City of New York's facility manager's and other tenants' on-site operations are uninterrupted to the extent determined by the City of New York.
 - 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 - 3. Coordination for shutoff, capping, and continuation of utility services.
 - 4. Coordination with the City of New York regarding continuing occupancy of portions of existing site.
- C. Inventory: Submit a list of items to be removed and salvaged and deliver to City of New York prior to start of demolition.
- D. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.7 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

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- B. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.8 FIELD CONDITIONS

- A. The City of New York will occupy portions of site immediately adjacent to selective demolition area. Conduct selective demolition so City of New York's operations will not be disrupted.
 - 1. Comply with requirements specified in General Conditions.
- B. Conditions existing at time of inspection for bidding purpose will be maintained by City of New York as far as practical.
- C. Notify Commissioner of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Regulated Materials: Regulated materials are present on site to be selectively remediated. A report on the presence of regulated materials is on file for review and use. Examine report to become aware of locations where materials are present.
 - 1. Regulated material remediation is specified elsewhere in the Contract Documents.
 - 2. Do not disturb regulated materials except under procedures specified elsewhere in the Contract Documents.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
 - 1. Maintain fire-protection facilities in service during selective demolition operations.

PART 2 - PRODUCTS

- A. Not Used.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting selective demolition operations.
- B. Review record documents of existing construction provided by City of New York. City of New York does not guarantee that existing conditions are same as those indicated in record documents.
- C. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Commissioner.
- E. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.
 - 1. Before selective demolition or removal of existing site elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.
 - 1. Comply with requirements for existing services/systems interruptions specified in General Conditions.
- B. Existing Services/Systems to be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
 - 1. City of New York will arrange to shut off indicated services/systems when requested by Contractor.
 - 2. Arrange to shut off indicated utilities with utility companies.
 - 3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
 - 1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.
 - 2. Protect walls, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 - 3. Comply with requirements for temporary enclosures specified in General Conditions.
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

3.4 SELECTIVE DEMOLITION, GENERAL

- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
3. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain fire watch and portable fire-suppression devices during flame-cutting operations.
4. Maintain adequate ventilation when using cutting torches.
5. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
6. Dispose of demolished items and materials promptly.

- B. Removed and Salvaged Items:

1. Salvage items as directed by Commissioner.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to City of New York.
4. Transport items to City of New York's storage area designated by City of New York.
5. Protect items from damage during transport and storage.

- C. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

- D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Commissioner, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

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3.5 DISPOSAL OF DEMOLISHED MATERIALS

- A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain City of New York's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
 - 1. Do not allow demolished materials 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 demolished materials.
- C. Disposal: Transport demolished materials off City of New York property and legally dispose of them.

3.6 CLEANING

- A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 026113 - HANDLING, TRANSPORT AND DISPOSAL OF CONTAMINATED MATERIALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and the Earth Moving Specification (Section 312000) apply to this Section.
- B. Division 31 – EARTHWORK

1.2 SUMMARY

- A. This section applies to the soil/fill that will be impacted for the proposed pedestrian pathway improvements at Queens Botanical Garden (QBG) in Kissena Park Corridor in Queens, New York
- B. This section provides requirements for the excavation, stockpiling, waste characterization, documentation, on-site handling, transport, and disposal of contaminated fill/soil and dust control requirements. Site material may be reused on the site in accordance with 6 NYCRR Part 360; however, reused site material must meet 6 NYCRR Part 375 Restricted Residential Use Soil Cleanup Objectives (SCOs) in the top 1 foot of passive grass lawn areas and in the top 2 feet in areas designated for planting ornamental gardens (not for consumption).
- C. Should reusable soil exist at the Site, it shall be stockpiled separately and used as backfill considering the appropriate criteria are met, as specified herein. Overburden material that is considered unusable, as specified herein, shall be properly disposed off-site. Residual contaminated soil that is left in-place at the Site shall be covered by impervious material (asphalt, concrete, etc.), at least 1 foot of clean cap material in passive grass lawn areas, or at least 2 feet of clean cap material in areas designated for planting ornamental gardens (not for consumption). Clean cap material contains no exceedances of 6 NYCRR Part 375 Restricted Residential Use Soil Cleanup Objectives (SCOs).
- D. Soil designated as hazardous material, if encountered, must be handled and disposed according to USEPA and NYSDEC regulations and the criteria specified herein. Soil designated as regulated (contaminated) non-hazardous soil shall be handled and/or disposed in accordance with state regulations including New York State and the disposal facility state.

1.3 SCOPE OF WORK

- A. General
 - 1. The Contractor shall prepare and adhere to their own Health and Safety Plan (HASP), which addresses contaminants identified at the site. The HASP shall detail the equipment and methods to be utilized to protect on-site workers, the City of New York, and public from physical injury and adverse health effects due to excavation, stockpiling, and removal of contaminated soil and fill materials.

2. The Contractor is responsible for the management of soil during all excavation, grading, and construction work.
3. The Contractor shall furnish all labor and materials, equipment and incidentals required for the proper excavation, stockpiling, characterization, transportation, reuse and disposal of soil.
4. The Contractor shall obtain all necessary permits and approval to complete their work including soil transport and disposal (if required). The Contractor shall provide all necessary plans, notifications and submittals to the Commissioner and City of New York, and New York State (as necessary) before, during, and after performance of the site work.
5. All work shall be performed in accordance with applicable Federal, State, and Local regulations.

B. Waste Characterization

1. The Contractor shall be responsible for the required testing for disposal classification of contaminated materials. The contractor may use existing site data (referenced in Section 1.2) to supplement required testing.
2. The work includes excavation and disposal (if required) of soil/fill exceeding 6 NYCRR Part 375 Unrestricted Use SCOs. If offsite soil/fill disposal is required, the Contractor shall be responsible for sampling in accordance with disposal facility requirements. For disposal purposes, excavated soil/fill that exceeds the Unrestricted Use SCOs is considered regulated solid waste in New York State.
3. Excavated materials shall be handled depending on the following categories:
 - a. Category 1 – Hazardous Material (Not Anticipated Based on Existing Sample Data) – Includes all soil/fill material that exceed regulatory limits for hazardous substances. If encountered, Category 1 materials shall be excavated and stockpiled separately for testing as required by the disposal facility and off-site transport by the Contractor. Alternatively, the Contractor may directly load out these materials, subject to prior written acceptance by the disposal facility and approval from the Commissioner and City of New York. Category 1 material must be handled and managed by personnel who maintain current U.S. Occupational Health and Safety Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) 40-hour certification. Category 1 materials must be transported and disposed in accordance with EPA and NYSDEC protocols, including permitting, notifications, manifesting and reporting.
 - b. Category 2 – Non-Hazardous Contaminated Fill/Soil - Includes the contaminated fill/soil found to exceed the Part 375 Unrestricted Use SCOs but below regulatory limits for hazardous substances. If required, excess Category 2 materials shall be characterized / tested in accordance with disposal facility requirements and transported off-site by the Contractor. Category 2 material may be reused on the site with approval from the Commissioner and City of New York if it shows no signs of impact (e.g., petroleum/solvent staining or odor). If Category 2 material is reused on-site, it must be capped if it exceeds Part 375 Restricted Residential Use SCOs. Acceptable cap includes impervious cover (e.g., asphalt, concrete), at least 1 foot of clean cap material in passive grass lawn areas or at least 2 feet of clean cap material in areas for planting ornamental gardens (not for consumption) with no Part 375

Restricted Residential Use SCOs. Category 2 material shall be handled and managed in accordance with New York State regulation and the disposal facility state regulation.

- c. Category 3 – Unregulated Soil – Includes material that has been shown to have no exceedances of Part 375 Unrestricted Use SCOs. Category 3 materials may be reused on-site if deemed suitable for backfill, considering project requirements. If it is unknown if the material contains no Part 375 Unrestricted Use exceedances, the Contractor shall sample and analyze the material. All results shall be submitted to and reviewed by the Commissioner and City of New York.

C. Soil Excavation and Segregation

1. Each material type (Category 1 through 3) shall be segregated by the contractor and not comingled. As required, the Contractor is responsible for delineating extents of each material type with the work area. Contractor shall collect and analyze additional soil samples where additional delineation is required.
2. The Contractor shall be responsible for any necessary shoring/sheeting required to stabilize the sidewalls of the excavation and other structures, utilities, etc. adjacent to the work area. This shall be done in accordance with applicable federal, state and New York City regulations and standards.
3. The Contractor may prepare segregated stockpile areas adjacent to the contaminated soil location, for storage pending testing by the Contractor and subsequent loading and off-site disposal by the Contractor provided proper erosion controls have been put into place to avoid intermixing of different soil types (i.e. secure polyethylene sheet covering, hay bales, etc).
4. Contractor shall perform any monitoring required to ensure the public and workers are protected.

D. Transportation and Disposal

1. If off-site disposal is required, the Contractor shall be responsible for the transport of excavated materials to appropriate recycling or pre-approved disposal facilities and for obtaining any required permits necessary for transport.
2. Any transporter of hazardous soils or petroleum impacted materials (if encountered) shall be licensed in the state in which handling and transportation shall take place in accordance with all applicable regulations including "Part 364" for transport and disposal of hazardous and or petroleum impacted waste. In addition, for hazardous material (if encountered), USEPA and US Department of Transportation regulations and requirements must be followed. Transport vehicles will require valid permits and placarding.

E. Import Cap Material

1. If import cap material is required, the material shall have no exceedances of 6 NYCRR Part 375 Restricted Residential Use SCOs. Import material samples shall be collected at the facility to document the absence of exceedances. Sample frequency shall be one import material sample per 250 cubic yards of material to be imported. Contractor shall not import soil/fill to the site that exceeds Part 375 Restricted Residential SCOs. The contractor shall survey the land surface prior to and after the placement of import cap material to document appropriate thickness.

1.4 RELATED SECTIONS AND DOCUMENTS

A. References

1. Waste Characterization Report, prepared by Langan, dated September 14, 2011.

B. Regulatory Requirements and Reference Standards

1. The Contractor shall comply with all the laws, ordinances, codes, rules and regulations of the federal, state and local authorities having jurisdiction over any of the work specified herein. If off-site disposal of excavated material is required, the Contractor shall meet USEPA and State Department of Transportation regulations for shipping of regulated substances to off-site disposal facilities, and meet all regulatory requirements imposed by the Treatment, Storage and Disposal Facility. Regulations pertaining to the transport and disposal of regulated substances/materials include, but are not limited to the following:
 - USEPA Regulation 40 CFR Part 280, Underground Storage Tanks: Technical Requirements Final Rule and Office of Emergency and Remedial Response, Standard Safety Guides, PB92-983414.
 - New York City Fire Department, FP Directive 3-73 Division of Fire Protection, NYCAC Title 27, New York City Fire Prevention Code, Chapter 4 et seq., and Rule 21-02 of the City of New York.
 - NYS Uniform Fire Prevention and Building Code (UFPBC) 1164.5.
 - NYSDEC-Subdivision 6 NYCRR Part 613.9 (b) (DEC's Petroleum Bulk Storage (PBS) Regulation.
 - NYSDEC Petroleum Bulk Storage Regulations 6 NYCRR Part 613.9(b).
 - 6 NYCRR Part 360, Solid Waste Management Facilities, July 14, 1985.
 - 6 NYCRR Part 364, Waster Transporter Permits, January 10, 1985.
 - 6 NYCRR Part 371, Identification and List of Hazardous Waste, July 1, 1986.
 - 6 NYCRR Part 375 Environmental Remedial Programs, December 14, 2006.
 - NYSDEC, Ambient Water Quality Standards and Guidance Values.
 - NYSDEC Site Assessment at Bulk Storage Facilities, August 1, 1994, SPOTS Memo No 14.
 - NYSDEC Petroleum-Contaminated Soil Guidance Policy, August 1992, STARS Memo No. 1.
 - NYSDEC DER-10, May 2010
 - Rule 21-02 of the City of New York.
 - The City of New York Building Code.
 - 29 CFR 1910 – Federal Occupational Safety and Health Administration (OSHA) standards.
 - NIOSH Occupational Safety and Health Guidance manual for Hazardous Waste Site Activities.
 - 29 CFR 1926 – Federal Construction Standards.
 - Resource Conservation and Recovery Act, 40 CFR Parts 260-265, Safe Entry and Cleaning of Petroleum Storage Tanks.
 - National Fire Prevention Association, Volume 30, “Flammable and Combustible Liquids Code.”
 - National Fire Prevention Association, Volume 327, “Cleaning or Safeguarding Small Tanks and Containers without Entry.”
 - US Department of Transportation (US DOT) 49 CFR Section 172.500 et seq.

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2. Contractor shall comply with Occupational Safety and Health Administration (OSHA) Standards and Regulations contained in Title 29 CFR Part 1910.120 "Hazardous Waste Operations and Emergency Response."
3. American Society for Testing and Materials (ASTM) -latest edition.
 - D422 Method for Particle Size Analysis of Soils
 - D1557 Test for Moisture-Density Relations of Soils Using 10-lb (4.5 Kg) Hammer and 18-inch (457 mm) Drop (Modified Proctor)
 - D2216 Laboratory Determination of Content of Soil
 - D2487 Classification of Soils for Engineering Purposes
 - D2922 Tests for Density of Soil and Soil- Aggregate in Place by Nuclear Methods (Shallow Depth)
 - D3017 Test for Moisture Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)
 - D4318 Test for Plastic Limit, Liquid Limit, and Plasticity Index of Soils
4. American Association of State Highway and Transportation Officials (AASHTO)- latest edition
 - T88 Mechanical Analysis of Soils
5. New York City Building Code
 - The provisions of the New York City Building Code relating to site earthwork and backfill shall govern the work of this section.

1.5 QUALIFICATIONS

- A. The Contractor shall be approved by the City of New York. The Contractor shall be any person or persons, corporation, or proprietorship deemed competent and experienced to perform work involving the hauling, disposal, transportation, and removal of hazardous and non-hazardous, contaminated materials. For the purposes of this contract, the Contractor shall possess the following:
 1. Access to a valid "Part 364" permit for hazardous material transport and disposal.
 2. Access to facilities to handle, dispose, and remove hazardous or non-hazardous, contaminated material.
 3. Experience directly related to work under this contract.
 4. An adequate understanding of all the regulations and requirements governing this contract.
 5. Any item pertinent to work described in this contract.
- B. If required, personnel handling or managing hazardous materials shall be trained and certified according to Occupational Health and Safety Administration Regulations Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements contained in 29 CFR 1910.120.
- C. The Contractor shall provide the Commissioner with evidence of the successful completion of at least three similar projects in scope and execution within the last five years prior to the bid opening. Verification shall include letters of recommendation, references, City of New Yorks/clients for whom the work was performed, dates, project durations, project cost, experience of personnel, licenses, etc.

- D. When it is necessary for the Contractor to utilize the services of a Subcontractor to perform work, the Contractor shall be responsible for the Subcontractor. The Subcontractor shall meet the requirements of this Section and be submitted for approval by the Commissioner. The Contractor shall provide the Commissioner with evidence of the successful completion of at least three projects similar in scope and execution within the last five years for the Subcontractor(s). Verification shall include letters of recommendation, references, City of New Yorks/clients for whom the work was performed, dates, project durations, project cost, experience of personnel, licenses, certifications, etc.

1.6 SITE DESCRIPTION

- A. The Queens Botanical Garden (QBG) is located in the Kissena Park Corridor of Flushing, Queens and encompasses approximately 39 acres with 71,000 square feet (sq. ft.) of pathways. The site is a historic ash landfill according to the January 2002 Limited Subsurface Investigation Report prepared by Metcalf & Eddy of New York, Inc. The proposed improvements are limited to pedestrian pathways and irrigation/utility trenching. New pathways throughout the garden will be reconstructed and realigned to improve safety, access and pedestrian flow.

1.5 PROJECT CONDITIONS

- A. The asphalt surface cover was generally underlain by dark brown to dark brown-grey fine and medium sand with some silt, wood, and gravel. Groundwater was encountered at depths ranging from 5 to 7 feet below ground surface (bgs).
- B. As documented in the Waste Characterization Report (Refer to Section 1.2), petroleum odors were observed in soil borings B-3 at 1.5 to 2 feet bgs, B-5 at 3.75 to 4 feet bgs, and B-6 at 1.5 to 2 feet bgs. Elevated PID readings were observed in soil borings B-2 through B-6. Elevated PID readings ranged from 0.1 to 124 parts per million, with the maximum reading being detected in B-3 at a depth of 0 to 0.5 feet bgs. Laboratory analytical data shows total petroleum hydrocarbon concentrations from 25.5 to 36.6 milligrams per kilogram and Part 375 Unrestricted Use exceedances of:
 - a. Volatile organic compounds
 - b. Semivolatile organic compounds
 - c. metals
- C. The Contractor, by careful examination, shall inform himself as to the nature and location of the work; the conformation of the ground, the nature of the surface and subsurface conditions; the locations of the groundwater table; the character, quality and quantity of the materials to be encountered; the character of the equipment and facilities needed preliminary to and during the execution of the work; and all other matters which can in any way effect the work.
- D. The Contractor shall be held to have visited the site and to have familiarized himself with the existing conditions of the site, adjoining properties, utilities and buildings.
- E. The Contractor shall investigate the conditions of public thoroughfares and roads as to availability, clearances, loads, limits, restrictions, and other limitations affecting transportation to, ingress and egress of the site of the work. The Contractor shall conform to all federal, state, and New York City regulations in regard to the transportation of materials to and from and at the job site and shall secure in advance such permits as may be required.

- F. The Contractor shall locate existing underground utilities in and beyond the areas of work, and will provide adequate means of support and protection during the work.
 - 1. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult the utility owner immediately for directions. Cooperate with Commissioner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner and City of New York.
- G. The Contractor shall examine drawings to determine sequence of operations, and relation to work of other trades. Start of work shall signify acceptance of field conditions and shall acknowledge coordination with other trades.

1.6 SUBMITTALS

The Contractor shall provide the required submittals during the specific phases of the project as described below.

- A. Pre-Construction Submittals – The Contractor shall submit to the Commissioner the following for review prior to receiving notice to proceed with the work.
 - 1. Confirmation of the Contractor’s qualifications, licenses, permits, and items listed in Articles 1.3(A) and 1.3(B) of this Section.
 - 2. Confirmation of any Subcontractor’s qualifications, licenses, permits, and items listed in Articles 1.3(A) and 1.3(B) of this Section.
 - 3. A detailed project schedule showing sequence of all environmental and earthwork operations.
 - 4. The name and address of the company(ies)/facility(ies) that shall transport and accept the contaminated materials and liquids (decontamination fluids).
 - 5. A pre-approval letter (letter of commitment or application), detailed listing of the facility’s or reclaimer’s required analytical testing documentation (sample frequency and analytical parameters) and copy of facility permits or registrations for acceptance of Site soil to be transported to their facility shall be provided to the Commissioner two weeks prior to initiation of the work.
 - 6. All pertinent information relating to the transport of materials. The information submitted shall include, but not be limited to:
 - a. Name and address of all transporters.
 - b. All local, state and federal permits required for the transport of excavated materials resulting from the performance of the work. The licenses and permits that may apply include, but are not limited to: NYSDEC Part 364 permits, hazardous waste transporter permits issued under 6 NYCRR Part 372.3 (if applicable), vehicle and hauling permits
 - c. USEPA and/or state identification number for the transporter and license expirations date.
 - d. Proof of permit, license or authorization to transport waste in all affected states.
 - 7. Obtain and submit all local, state, and federal permits required for the disposal of all excavated materials resulting from the work performed. This includes information on each USEPA and/or State approved off-site disposal facility that is proposed to receive contaminated materials and hazardous wastes (as required). For each proposed facility, the following information shall be submitted:

- a. Name, address, and location of the facility, including the owners name, address, telephone number, and fax number and the contact person at the facility.
 - b. The USEPA identification number of the recycling or disposal facility.
 - c. Facility testing requirements and acceptance criteria.
 - d. Copies of valid, current, operating permits for the facility from the applicable regulatory agencies.
 - e. A letter from the facility owner granting permission to bring material to the facility through out the life of the Contract
 - f. A listing of the number and types of analytical tests required for initial determinations of the material for each disposal facility. Also to be included are the testing requirements and frequency for testing of the material once the initial characterization has been made.
8. The Contractor shall submit a site-specific HASP that meets the requirements of this specification, to the City of New York or the Commissioner prior to performing work on the contaminated and hazardous material. The HASP will be reviewed prior to the start of work by the City of New York and should include but is not limited to:
- a. Name and certification of Contractor's Health and Safety Officer.
 - b. Copies of all training certificates for the employee proposed for this project that has completed the training and medical requirements required for hazardous waste.
- B. On-going Submittals – The Contractor shall submit the following to the Commissioner promptly after completion of each task:
1. All manifests, bills of lading, weight tickets and analytical data for all soil/fill material exported from the site. Copies of the soil disposal manifests must be submitted to the Commissioner prior to and following the disposal facilities signature. All manifests must contain signatures from the generator (or their designated representative), transporter and the disposal facility. Each manifest shall be accompanied by a facility-issued weight ticket.
 2. For hazardous materials (if encountered), EPA-issued manifests with sequential numbering provided by the EPA must be obtained by the Contractor. For each load of hazardous soil to be removed from the site, a copy of the manifest with only the Generator and Transporter signature must be submitted to the Commissioner, which will then submit the copy to the regulatory agencies. Once the hazardous materials load is disposed at the facility and the facility has signed the manifest, a copy must immediately be sent to the Commissioner.
 3. For import cap material (if required), submit:
 - i. Facility documentation explain the source of the material
 - ii. Analytical data demonstrating no exceedances of Part 375 Restricted Residential Use SCOs.
 - iii. Facility-issued bill of ladings documenting each load of import material.
 4. Air monitoring data logs in Microsoft Excel format and observations of suspended visible dust should be submitted daily with explanations and remedies for any exceedances or elevated readings.
 5. Daily activity reports should be submitted daily and should include work performed onsite, weather conditions, observations pertaining to visible dust and VOC monitoring.

1.7 NOTIFICATION

- A. The Contractor shall notify all utilities prior to the work as necessary, and arrange for mark-outs of underground utilities in accordance with all applicable local, state and federal regulations.
- B. The Contractor shall notify the Commissioner and City of New York whenever contaminated or hazardous materials are being handled, transported or disposed.

1.8 PROTECTION

- A. The Contractor shall furnish signs, lights, barricades, fencing, and other equipment as may be necessary for the safe execution of the work and remove these after completion of the work. This shall include barricades and signs protecting hazardous materials work areas.
- B. The Contractor shall assume full responsibility for the preservation of all public and private property. If any direct or indirect damage is done by or on account of any act, omission, neglect or misconduct in the execution of the work by the Contractor, it shall be restored promptly by the Contractor, at his expense, to a condition equal to that existing before the damage was done. The Contractor may take photographs to document damage which existed prior to work.

PART 2 – MATERIALS

2.1 IMPORT CAP MATERIAL

- A. The material shall have no exceedances of 6 NYCRR Part 375 Restricted Residential Use SCOs. Contractor shall not import soil/fill to the site that exceeds Part 375 Restricted Residential SCOs. The Contractor shall survey the land surface prior to and after the placement of import cap material to document appropriate thickness.

PART 3 – EXECUTION

3.1 GENERAL REQUIREMENTS

- A. Management, characterization and disposal of contaminated soil/fill shall be in accordance with the requirements of this specification and Contract Documents, and shall be the responsibility of the Contractor.
- B. Verify the accuracy and existence of, and abide by applicable codes, ordinances, and other regulations by obtaining and interpreting state, county, city, or local municipality by-laws for hazardous material, fill and solid waste removal and disposal.

3.2 SAFETY

- A. Health and Safety Plan
 - 1. The Contractor's HASP shall address the methods to be utilized for personal protection during excavation, stockpiling, handling, transportation, disposal, and testing of the soil and, if encountered, groundwater on site.
 - 2. The HASP shall address the presently known conditions identified in contract documents, drawings, or previous reports provided by the City of New York.

3. Trade-specific health and safety requirements should be developed by the Contractor based on the anticipated contact with contaminated and hazardous soil. Training, medical surveillance, and exposure monitoring requirements should be addressed.
 4. The HASP shall contain specific methods of providing protection for the Site workers and the general public to prevent all personnel from coming into contact with contaminated materials.
 5. Personnel handling or managing hazardous materials (if encountered) shall be trained and certified according to Occupational Health and Safety Administration Regulations Hazardous Waste Operations and Emergency Response (HAZWOPER) requirements contained in 29 CFR 1910.120.
 6. All Subcontractors to the Contractor shall be required to implement the Contractors HASP. The Contractor shall submit to the City of New York or Commissioner a letter from the Subcontractor indicating knowledge of the HASP requirements prior to the start of the Subcontractor's work.
 7. The Contractor's HASP shall be bound by any and all other pertinent and relevant sections of the Contract Documents including, but not limited to, those included in the General Conditions.
- B. Personnel working inside and in the general vicinity of the work shall be trained and thoroughly familiar with the safety precautions, procedures and equipment required for controlling the potential hazards. Personnel shall use proper protection and safety equipment during work.
 - C. The Contractor shall maintain safe sidewall slopes or shall provide adequate shoring. If applicable, the sheeting/shoring calculations shall be prepared and signed by a New York State licensed Professional Engineer. The excavation shoring shall meet all applicable New York City Department of Building Codes as set forth in Subchapter 19.
 - D. The Contractor shall be responsible for the safety of their operation, and for any damage that may result from the Contractor's work. They shall erect and properly maintain at all times, as required by the conditions and progress of the work, proper safeguards for the protection of workers and the public and shall post danger warnings as required by law or otherwise required by the Contract Documents against hazards created by the Contractor's operation. The Contractor shall furnish, install and remove after completion of the work, all signs, lights, barricades, fencing and other equipment as may be necessary for the safe execution of the work.
 - E. All removal operations shall be conducted in a manner as required to prevent the spread of dust and odor. If deemed necessary by the Commissioner and City of New York, the Contractor shall provide dust control with a water or foam truck, or other means acceptable to the Commissioner and City of New York. Visible dust emissions shall not be allowed by the Contractor in contaminated or hazardous soil areas (if encountered).
 - F. Ambient air monitoring shall be conducted by the Contractor near the excavation area and at the property perimeter to identify visible fugitive dust emissions and organic vapors (where organic vapor impacts are present). Real-time monitoring for VOCs and dust in the designated work area and Site perimeter will be required when excavation activities are in progress or dust or VOC generation is possible. Air monitoring shall be continuous and on-going whenever hazardous materials are exposed. Typical equipment for real-time monitoring of VOCs is a photoionization detector (PID) (MiniRae 2000 or equivalent). If visible dust is identified or VOC readings are unacceptable, the Contractor shall institute measures to minimize dust and/or organic vapors. The measures utilized are subject to the approval of the Commissioner and City

of New York. Reasons for exceedances and remedies for exceedances shall be documented by the Contractor and submitted to the Commissioner and City of New York on a daily basis.

- G. Prior to ending operations on any working day or at any time the Contractor is not on-site, the Contractor shall secure all areas of work in a safe manner in accordance with all regulatory agencies and to the satisfaction of the Commissioner and the City of New York. This shall include, but not be limited to, ensuring that adequate erosion control measures (hay bales, silt fencing, etc) are in-place, ensuring stockpiles are on and covered by plastic sheeting, and ensuring that the site is secure.

3.3 PREPARATION

- A. The Contractor shall perform all necessary site preparation, restoration, security and control including but not limited to temporary fencing, backfilling and shoring as necessary to protect structures, workers and public.

3.4 EXCAVATION, STOCKPILING & EROSION CONTROL

- A. Different soil categories shall be segregated and stockpiled on at least 12 mils (or 2 layers of 6 mil) of plastic sheeting or direct-loaded for disposal off-site. Reusable soil and fill shall be segregated and stockpiled separately from unusable fill, concrete and other debris; the stockpiles shall be kept covered with 6 mil thick plastic sheeting; the plastic sheeting covering the stockpiles shall be anchored firmly in place by weights, stakes, or both; the Contractor shall maintain the plastic sheeting. Stockpiled soil and/or fill may be uncovered when soil is being added or removed.
- B. For soil and fill deemed suitable for reuse by the City of New York and Commissioner as outlined in this specification, the Contractor shall arrange for a segregated stockpiling area for this material to ensure it is not comingled with hazardous or regulated materials for disposal.
- C. The Contractor shall locate stockpiled material, especially contaminated material, in areas away from the site surface drainage features and plan construction to control surface drainage from stockpiles, staging and other work areas and prevent erosion and sedimentation.
- D. The amount of stockpiled soil uncovered and exposed at any one time shall be minimized.
- E. The Contractor shall provide and maintain temporary measures such as silt fences, hay bales, ditches, drains, berms, dikes and other features required to trap and contain sediments to prevent sediment migration and to prevent water flow from stockpiles into stormwater catch basins. Sediment control measures for stockpiled material and any other area of the site where sediment may migrate off-site shall be in place at all times during construction.
- F. The Contractor shall install and maintain silt fence around the perimeter of the work area, as necessary, to control erosion.
- G. The Contractor shall inspect site entrances and exits daily for evidence of off-site sediment tracking. The existing conditions of the adjacent city streets shall be maintained. If necessary, Contractor shall clean adjacent streets within 100 feet of the site entrance/exit as directed by the Commissioner.

3.5 SITE ASSESSMENT

- A. Following excavation, the Contractor shall have equipment and manpower available to assist the

City of New York with the collection of post-excavation soil and groundwater samples, as applicable.

- B. The Contractor shall make provisions for leaving the excavation open until the City of New York or Commissioner deems the work complete. No claims of delay shall be permitted for assisting the City of New York in the collection of soil samples or for keeping the excavation open until the requirements are met.

3.6 WASTE TRANSPORTATION & DISPOSAL

- A. If off-site disposal of excavated material is required, the Contractor shall provide the Commissioner with all waste disposal documentation, including permits, manifests and bills of lading for soil, fill, hazardous material (if encountered) and liquids.
- B. If off-site disposal of excavated material is required, the Contractor shall keep an accurate record (log) of the contaminated material transported off-site and maintain a file of all facility-signed (completed) manifests for all materials leaving the site. The log and manifests shall be submitted to the Commissioner and City of New York daily.
- C. The Contractor shall be responsible for the collection and analysis of all soil, fill, and liquid samples for waste characterization and soil or fill material reuse purposes and as required by the disposal or recycling facility. All lab testing conducted for this project shall be performed by a NYSDOH Environmental Laboratory Accreditation Program (ELAP) certified laboratory. Waste characterization samples shall be analyzed by a laboratory that is certified by the state which the facility is located and shall be collected at a frequency specified by the selected disposal facility. The Contractor shall provide to the Commissioner the testing requirements of the disposal facility(ies) it intends to use.
- D. All transport vehicles shall be inspected, prior to leaving the site, by the Contractor to ensure that no material adheres to the wheels, undercarriage, tailgates, covers or other areas of transport vehicles. All vehicles shall be cleaned as required. Cleaning measures may include washing tires, undercarriage, and any other contaminated parts prior to leaving the site using a high-pressure water and/or steam spray. Contractor shall collect all wash water for treatment and disposal as required.
- E. If off-site disposal of excavated materials is required, the Contractor shall transport and deliver material only to the approved disposal facilities.
- F. The Contractor shall be responsible for appropriate measurement of unit quantity of material removed from the site (if required). The Contractor shall coordinate vehicle inspection and recording of quantities leaving the site. The Contractor shall keep an accurate record (log) of the contaminated material transported off-site and borrow fill imported to the site, and maintain a file of all facility-signed (completed) manifests for all materials leaving the site and documentation for all borrow fill entering the site. These quantities shall be compared to recorded quantities received at the disposal facilities. The Contractor shall immediately resolve any discrepancies that occur and determine the probable cause for the discrepancy. Daily logs shall be submitted to the Commissioner daily. Manifests and borrow fill documentation shall be submitted to the Commissioner when received.
- G. The Contractor shall be solely responsible for any and all actions necessary to remedy situations involving material spilled in transit.
- H. If off-site disposal of excavated material is required, the disposal containers shall be ISO type, dump trailers, or approved equal, constructed of sufficient metal, have watertight bodies and

sealed tailgates equipped with positive locking devices and provisions for control of free liquids. No liquid shall leak from any part of the loaded container or trailer. The Contractor shall furnish and install a metal or tarpaulin cover on each container immediately after the container is full. The cover shall be secured in an approved manner and shall remain in place until the container has reached the disposal facility.

- I. The Contractor shall be responsible for transportation safety if off-site disposal of excavated material is required. All vehicles shall be properly maintained, driven properly, follow all rules and regulations, observe all speed limits, etc. The on-site speed limit shall be five miles per hour. All vehicles shall be inspected before every trip as part of Contractor's preventive maintenance program. The Contractor shall inspect each vehicle to ensure that all doors, covers, etc. are secure and that no material can spill or otherwise be released or leak. Each vehicle shall bear, at a minimum, the name and phone number of the Contractor plainly visible on both cab doors. Each vehicle shall be uniquely numbered in lettering at least four inches high and shall be placarded in accordance with appropriate federal, state, local, and NYS DOT requirements (or other applicable transportation requirements). Likewise, each trailer or container shall be so labeled on both sides and the tailgate if possible.
- J. The Contractor shall submit a copy of the completed manifest and scale tickets for each container to document the proper transportation of disposed material to an approved permitted facility by permitted vehicles if off-site disposal of excavated material is required. No payments shall be made until copies have been furnished.
- K. All trucks leaving the site containing solid material for off-site disposal (if required) will be covered with tight-fitting covers, and will be checked to ensure that the cargo is not leaking. Excavated soil supersaturated with water will be dried, dewatered or mixed with a drying compound (e.g. quick lime) prior to loading into a transport vehicle for off-site disposal.

3.7 DECONTAMINATION OF EQUIPMENT AND MATERIALS

- A. All decontamination procedures for equipment and materials shall conform to the requirements of applicable USEPA and NYSDEC regulations, as appropriate.
- B. All recoverable equipment and materials that have been in contact with excavated soil shall be decontaminated prior to removal from the site. As used herein "recoverable" shall mean all items which are non-absorptive in nature and which can be successfully decontaminated. All items for which decontamination is difficult or uncertain shall be considered non-recoverable, as determined by the Commissioner.
- C. The Contractor shall use an approved biodegradable cleaning solution, to clean all residual material and soil from the interior and exterior surfaces of the equipment. (Note that solutions containing chlorinated solvents or volatile organic compounds are not acceptable. The Contractor shall submit applicable MSDS sheets to the Commissioner and obtain approval for the cleaning solution in advance.).
- D. Cleaning shall be done in an area specifically set up by the Contractor for that purpose, curbed, and lined with an impermeable membrane, to contain the used cleaning solution, including any overspray, and any contaminated debris removed during the cleaning process. All cleaning related materials and operations, and disposal of used cleaning solution and associated contaminated debris, shall be provided and performed by the Contractor at no additional cost to the Commissioner.
- E. Deposit non-liquid, non-recoverable materials into USDOT containers as directed by the Commissioner and dispose off-site properly.

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- F. Mark and placard drummed decontamination materials and place in the contaminated stockpile area. The waste shall be sampled and classified by the Contractor in accordance with the approved disposal facilities' requirements. Once classified and accepted by the approved facility in accordance with all federal, state, and local requirements, the Contractor shall provide the Commissioner and City of New York with a photocopy of any required manifests.

END OF SECTION 026113

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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 apply to this Section.

1.2 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
 - 1. Shed slabs and footings.
 - 2. Site curbs, step ramps risers and walls.
 - 3. Miscellaneous cast-in-place concrete.
- B. Related Sections:
 - 1. Section 321313 "Concrete Paving" for concrete pavement and walks.
 - 2. Section 312000 "Earth Moving" for drainage fill under slabs-on-grade.

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 ACTION 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.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer manufacturer testing agency.
- B. Welding certificates.
- C. 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. Curing compounds.
 - 6. Bonding agents.
 - 7. Adhesives.
 - 8. Semirigid joint filler.
 - 9. Joint-filler strips.
 - 10. Repair materials.
- D. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
 - 1. Aggregates.
- E. Field quality-control reports.

1.6 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.
 - 1. 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 single source, and obtain admixtures from single source from single manufacturer.

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- E. Welding Qualifications: Qualify procedures and personnel according to AWS D1.4/D 1.4M, "Structural Welding Code - Reinforcing Steel."
- F. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:
 - 1. ACI 301, "Specifications for Structural Concrete," Sections 1 through 5.
 - 2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- G. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.
- H. Mockups: Cast concrete step ramp step to demonstrate typical joints, surface finish, texture, tolerances, and standard of workmanship.
 - 1. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- I. Preinstallation Conference: Conduct conference at Project site.
 - 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. Concrete subcontractor.
 - 2. Review 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, steel reinforcement installation, slab flatness and levelness measurement, concrete repair procedures, and concrete protection.

PART 2 - PRODUCTS

2.1 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. 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.

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- C. Forms for Cylindrical Columns, Pedestals, and Supports: Metal, glass-fiber-reinforced plastic, paper, or fiber tubes that will produce surfaces with gradual or abrupt irregularities not exceeding specified formwork surface class. Provide units with sufficient wall thickness to resist plastic concrete loads without detrimental deformation.
- D. Void Forms: Biodegradable paper surface, treated for moisture resistance, structurally sufficient to support weight of plastic concrete and other superimposed loads.
- 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 form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.
 - 1. Furnish ties that, when removed, will leave holes 3/4 inch in diameter on concrete surface.

2.2 STEEL REINFORCEMENT

- A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- B. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.
- C. Plain-Steel Welded Wire Reinforcement: ASTM A 185/A 185M, plain, fabricated from as-drawn steel wire into flat sheets.

2.3 REINFORCEMENT ACCESSORIES

- A. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60, plain-steel bars, cut true to length with ends square and free of burrs.
- B. 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:

2.4 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 for balance of concrete, supplement with the following:

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- a. Fly Ash: ASTM C 618, Class C.
- B. Normal-Weight Aggregates: ASTM C 33, Class 3S coarse aggregate or better, graded. Provide aggregates from a single source with documented service record data of at least 3 years' satisfactory service in similar applications and service conditions using similar aggregates and cementitious materials.
 1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: ASTM C 94/C 94M and potable.
- D. Color Pigment: ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.
 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Davis Colors.
 - b. Scofield, L. M. Company.
 - c. Solomon Colors, Inc.
 - d. Approved equal.
 2. Color: As selected by the Commissioner from manufacturer's full range of colors including "non-standard" colors.

2.5 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 and Retarding Admixture: ASTM C 494/C 494M, Type D.

2.6 CURING MATERIALS

- A. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.

2.7 RELATED MATERIALS

- A. Expansion- and Isolation-Joint-Filler Strips: Pre-molded closed-cell expanded polyethylene foam.
- B. Bonding Agent: ASTM C 1059/C 1059M, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- C. Single-Component, Nonsag, Urethane Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Sika Corporation, Construction Products Division; Sikaflex - 15LM.
 - b. Tremco Incorporated; Vulkem 921
 - c. Approved Equal

2.8 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.
- C. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.
- D. Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing 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, and concrete with a water-cementitious materials ratio below 0.50.

2.9 CONCRETE MIXTURES FOR SITE ELEMENTS

- A. 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, plus or minus 1 inch.

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4. Air Content: 6 percent, plus or minus 1.5 percent at point of delivery for 1-inch nominal maximum aggregate size.

B. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.

2.10 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.11 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M, 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 347 as abrupt or gradual, as follows:

1. Class A, 1/8 inch for smooth-formed finished surfaces.

D. Construct forms tight enough to prevent loss of concrete.

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.

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- 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. Bullnose 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.

3.3 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of walls 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 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.
- 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.

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- B. 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 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. Lace overlaps with wire.

3.6 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. Space vertical joints in walls as indicated.
 - 4. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Contraction Joints: Form weakened-plane contraction joints true to line with faces perpendicular to surface plane of cast-in-place concrete so strength and appearance of concrete are not impaired, at locations indicated or as approved by Commissioner.
- D. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete walls, structures, other fixed objects, and where indicated.
 - 1. Curbs: Locate expansion joints at intervals of 20 feet unless otherwise indicated or as directed by Commissioner.
 - 2. Extend joint fillers full width and depth of joint.

3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
 4. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
 5. During concrete placement, protect top edge of joint filler.
- 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.

3.7 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.
- C. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.
1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.
- D. 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.
- 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.

3.8 FINISHING FORMED SURFACES

- A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched for footings and other unexposed surfaces. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
- 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 for curbs, walls, steps, and other structures with exposed faces and as indicated. Repair and patch tie holes and defects as approved by Commissioner. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
- C. Rubbed Finish: Apply the following to smooth-formed finished as-cast concrete to step ramp wall and as 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.
- D. Fine Broom Finish: Apply a fine broom finish to exterior step ramp steps, shed slab, 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.
- E. 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.

3.9 MISCELLANEOUS CONCRETE ITEMS

- A. Curbs: Provide monolithic finish to 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.

3.10 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. 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.
- 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.

3.11 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of sealant backings.
 - 2. Do not stretch, twist, puncture, or tear sealant backings.
 - 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

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- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 - 1. Remove excess sealant from surfaces adjacent to joints.
 - 2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 - 3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
 - 4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.
 - 5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.
 - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

3.12 CONCRETE SURFACE REPAIRS, PROTECTION AND CLEANING

- A. Repair and cure damaged finished surfaces of cast-in-place concrete when approved by Commissioner. Match repairs to color, texture, and uniformity of surrounding surfaces and to repairs on approved mockups.
 - 1. Remove and replace cast-in-place concrete that cannot be repaired and cured 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. Perform as directed by Commissioner.
 - 1. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Commissioner.
- D. Repair materials and installation not specified above may be used, subject to Commissioner's approval.

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- E. Protect corners, edges, and surfaces of cast-in-place concrete from damage; use guards and barricades.
- F. Protect cast-in-place concrete from staining, laitance, and contamination during remainder of construction period.
- G. Clean cast-in-place concrete surfaces after finish treatment to remove stains, markings, dust, and debris.
- H. Wash and rinse surfaces according to concrete finish applicator's written instructions. Protect other Work from staining or damage due to cleaning operations.
 - 1. Do not use cleaning materials or processes that could change the appearance of cast-in-place concrete finishes.

END OF SECTION 033000

SECTION 055213 - PIPE AND TUBE RAILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Steel pipe railings.

- B. Related Sections:

- 1. Section 033000 "Cast-In-Place Concrete" for concrete ramp stairs.
- 2. Section 099113 "Exterior Painting" for painting.

1.3 PERFORMANCE REQUIREMENTS

- A. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.

- 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

- B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1.4 ACTION SUBMITTALS

- A. Product Data: For the following:

- 1. Grout, anchoring cement, and paint products.

- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

- C. Samples for Verification: For each type of exposed finish required.

- 1. Two (2) Twelve (12) inch length of each size of pipe rail and post with final specified finish.

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1.5 INFORMATIONAL SUBMITTALS

- A. Welding certificates.
- B. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers certifying that shop primers are compatible with topcoats.

1.6 QUALITY ASSURANCE

- A. Source Limitations: Obtain each type of railing from single source from single manufacturer.
- B. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- C. Welding Qualifications: Qualify procedures and personnel according to the following:
 - 1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."

1.7 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls, steps and other construction contiguous with and to receive metal fabrications by field measurements before fabrication.

1.8 COORDINATION AND SCHEDULING

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of anchorages for railings. 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.
- C. Schedule installation of railings such that installation occurs following completion of walls, steps and other adjacent or contiguous construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Steel Pipe Railings:
 - a. Westfield Sheet Metal Works, Inc.

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North 8th Street & Monroe Ave. Kenilworth, NJ 07033, (908) 276-5500

- b. Atlas Fence & Railing Co., Inc.,
151-49 th Ave., Whitestone, NY 11357, (718) 767-2200
- c. A & T Ironworks
25 Cliff St., New Rochelle, NY 10801, 914-632-8992
- d. V.L.K Construction, Inc.
1841 Steinway Street, Astoria, NY 11105-1010, (718) 361-8608
- e. Approved equal.

2.2 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

2.3 STEEL AND IRON

- A. Pipe: ASTM A 53/A 53M, Type F or Type S, Grade A, Standard Weight (Schedule 40), unless another grade and weight are required by structural loads.
 - 1. Provide galvanized finish for exterior installations and where indicated.

2.4 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Etching Cleaner for Galvanized Metal: Complying with MPI#25.
- C. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- A. Shop Primers: Provide primers that comply with Division 09 painting Sections.
- B. Intermediate Coats and Topcoats: Provide products that comply with Division 09 painting Sections.
- C. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.5 FABRICATION

- A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage.
- B. Assemble railings in the 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 reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

- C. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- D. Form work true to line and level with accurate angles and surfaces.
- E. Fabricate connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- F. Connections: Fabricate railings with welded connections unless otherwise indicated.
- G. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove flux immediately.
 - 4. At exposed connections, finish exposed surfaces smooth and blended so no roughness shows after finishing and welded surface matches contours of adjoining surfaces.
- H. Bend members in jigs to produce uniform curvature for each configuration required; maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.
- I. For railing posts set in concrete, provide steel sleeves with inside dimensions not less than 1/2 inch greater than outside dimensions of post, with metal plate forming bottom closure.

2.6 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

2.7 STEEL AND IRON FINISHES

- A. Galvanized Railings:
 - 1. Hot-dip galvanize exterior steel railings after fabrication.
 - 2. Comply with ASTM A 123/A 123M for hot-dip galvanized railings.
 - 3. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.
 - 4. Fill vent and drain holes that will be exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.
- B. For galvanized railings, provide hot-dip galvanized fittings, sleeves, and other ferrous components.

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- C. Preparing Galvanized Railings for Shop Priming: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with etching cleaner.
- D. Primer Application: Apply shop primer to prepared surfaces of railings unless otherwise indicated. Comply with requirements in SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting. Primer need not be applied to surfaces to be embedded in concrete or masonry.
 - 1. Shop prime uncoated railings with primers specified in Section 099113 "Exterior Painting" unless indicated.
- E. Shop-Painted Finish: Comply with Section 099113 "Exterior Painting."
 - 1. Color: black.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Fit exposed connections together to form tight, hairline joints.
- B. Set railings accurately in location, alignment, and elevation; measured from established lines and levels and free of rack.
 - 1. Do not weld, cut, or abrade surfaces of railing components that have been coated or finished after fabrication.
 - 2. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
 - 3. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.
- C. Fastening to In-Place Construction: Use anchorage devices where necessary for securing railings and for properly transferring loads to in-place construction.

3.2 RAILING CONNECTIONS

- A. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in "Fabrication" Article whether welding is performed in the shop or in the field.
- B. Expansion Joints: Install expansion joints at locations indicated but not farther apart than required to accommodate thermal movement. Provide slip-joint internal sleeve extending 2 inches beyond joint on either side, fasten internal sleeve securely to one side, and locate joint within 6 inches of post.

3.3 ANCHORING POSTS

- A. Use metal sleeves preset and anchored into concrete for installing posts. After posts have been inserted into sleeves, fill annular space between post and sleeve with nonshrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions.
- B. Form or core-drill holes not less than 1'-0" deep and 3/4 inch larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout, mixed and placed to comply with anchoring material manufacturer's written instructions.
- C. Leave anchorage joint exposed with 1/8-inch buildup, sloped away from post.

3.4 ADJUSTING AND CLEANING

- A. Touchup Painting: Cleaning and touchup painting of field welds and abraded areas of shop paint are specified in Section 099113 "Exterior Painting".
- B. Galvanized Surfaces: Clean field welds and abraded areas and repair galvanizing to comply with ASTM A 780.

3.5 PROTECTION

- A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.

END OF SECTION 055213

SECTION 099113 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

- A. Section includes surface preparation and the application of paint systems on the following exterior substrates:
 - 1. Galvanized metal.
- B. Related Requirements:
 - 1. Division 05 Sections for shop priming of metal substrates with primers specified in this Section.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product. Include preparation requirements and application instructions.
- B. Samples for Verification: For each type of paint system and each color and gloss of topcoat.
 - 1. Submit Samples on rigid backing, 8 inches square.
 - 2. Step coats on Samples to show each coat required for system.
 - 3. Label each coat of each Sample.
 - 4. Label each Sample for location and application area.
- C. Product List: For each product indicated, include the following:
 - 1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
 - 2. VOC content.

1.4 CLOSEOUT SUBMITTALS

- A. Touch-Up Paint: Furnish touch-up paint for each paint product and color in air tight containers identified with labels describing contents, paint manufacturer, site element applied to, and color.
 - 1. Furnish not less than 1 gal. of each paint type and color.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
 - 1. Maintain containers in clean condition, free of foreign materials and residue.
 - 2. Remove rags and waste from storage areas daily.

1.6 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Benjamin Moore & Co.
 - 2. Sherwin-Williams Company (The).
 - 3. Devoe Coatings.
 - 4. Approved equal.

2.2 PAINT, GENERAL

- A. Material Compatibility:
 - 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- B. VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.
- C. Colors:
 - 1. Pipe and Tube Railings: Black.

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2.3 METAL PRIMERS

A. Primer, Rust Prohibitive, Acrylic for Galvanized Metal:

1. Sherwin Williams # Pro-Cryl® Universal Primer, B66-310, Red Oxide, rust prohibitive acrylic primer for galvanized steel as manufactured by Sherwin Williams Company, Woodside, NY or an approved equivalent manufactured by Benjamin Moore & Co. or Devoe Coatings. Primer is a fast drying, 53% \pm 2% weight solids, VOC compliant, corrosion resistant with a dry film thickness of 2-4 mils. Performance shall meet or exceed the standards of Federal Specification TT-P-86H, Type III and IV, and TT-P-664D.

2.4 SOLVENT-BASED PAINTS

A. Topcoat, Alkyd, Exterior Gloss:

1. Second and Third Coat: Sherwin Williams Steel Master 9500 30% Silicone Alkyd, as manufactured by Sherwin Williams Company, Woodside, NY or an approved equivalent manufactured by Benjamin Moore & Co. or Devoe Coatings.; color Black. Topcoat is a silicon alkyd, high gloss coating having a dry film thickness of 2-4 mils.

2.5 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Commissioner reserves the right to invoke the following procedure:

1. Commissioner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. Commissioner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove non-complying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- B. Proceed with coating application only after unsatisfactory conditions have been corrected.
 1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Galvanized-Metal Substrates: Immediately prior to painting, clean all surfaces thoroughly in accordance with SP-1, Solvent Cleaning. Remove grease and oil residue from galvanized steel to produce clean surfaces that promote adhesion of subsequently applied paints.

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions.
 - 1. Use applicators and techniques suited for paint and substrate indicated.
 - 2. Primers specified may be omitted on items that are factory primed or finished if acceptable to topcoat manufacturers.
- B. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- C. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections.

3.4 FIELD QUALITY CONTROL

- A. Dry Film Thickness Testing: City of New York may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.
 - 1. Contractor shall touch up and restore painted surfaces damaged by testing.
 - 2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

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3.5 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Commissioner, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 EXTERIOR PAINTING SCHEDULE

- A. Galvanized Steel Substrates:
 - 1. Alkyd System:
 - a. Prime Coat: Primer, rust prohibitive, self cross-linking acrylic primer for galvanized steel.
 - b. Intermediate Coat: Exterior silicone alkyd matching topcoat.
 - c. Topcoat: Exterior silicone alkyd, high gloss.

END OF SECTION 099113

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SECTION 129300 - SITE FURNISHINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:

- 1. Remove, Salvage and Relocate Existing Donor Benches.
- 2. Remove, Store and Reinstall Garden Signs & Bike Rack.

- B. Related Sections include the following:

- 1. Section 033000 "Cast in Place Concrete"
- 2. Section 312000 "Earth Moving"
- 3. Section 321216 "Asphalt Paving"
- 4. Section 321313 "Concrete Paving"
- 5. Section 321400 "Unit Paving"

- C. Products furnished, but not installed under this Section, include anchor bolts to be cast in concrete footings and installed in paving.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Product Schedule: For site furnishings. Use same designations indicated on Drawings.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Anchors, Fasteners, Fittings, and Hardware: Stainless steel; commercial quality, tamperproof, vandal and theft resistant.

2.2 SITE FURNISHINGS

- A. Existing donor benches, garden signs and bike rack to be removed, stored and reinstalled as indicated on the contract documents.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions prior to the removal of site furnishings, with the Commissioner present, and document conditions for compliance with requirements for correct and level finished grade, mounting surfaces, installation tolerances, and other conditions affecting performance. Notify the Commissioner in writing of any conditions that will impact the final installation.

3.2 STORAGE

- A. Site furnishings will be stored on site in an approved location(s) approved by the Commissioner. Area(s) will be secured with construction fencing and it shall be the Contractor's responsible that all furnishings are stored and protected from damage. Damaged site furnishings shall be replaced at the Contractor's expense.

3.3 INSTALLATION, GENERAL

- A. Comply with manufacturer's written installation instructions unless more stringent requirements are indicated. Complete field assembly of site furnishings where required and install in accordance with the contract documents.
- B. Unless otherwise indicated, install site furnishings after landscaping and paving have been completed.
- C. Install site furnishings level, plumb, true, and securely anchored at locations indicated on Drawings.

3.4 CLEANING

- A. After completing site furnishing installation, inspect components. Remove spots, dirt, and debris. Repair damaged finishes to match original finish or replace component.

END OF SECTION 129300

SECTION 133419 - PREFABRICATED SHED

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Prefabricated Shed
- B. Related Sections:
 - 1. Section 033000 "Cast-In-Place Concrete."

1.3 ACTION SUBMITTALS

- A. Product Data: Manufacturer's specification and data for each shed system component. Include construction details, material descriptions, dimensions of individual components and profiles, manufacturer's installation/assembly instructions, and finishes for the following:
 - 1. Wood-framing system.
 - 2. Roof sheathing.
 - 3. Roofing material.
 - 4. Wall sheathing.
 - 5. Insulation and vapor retarder facings.
 - 6. Exterior siding.
 - 7. Flashing and trim.
 - 8. Doors.
 - 9. Door hardware.
 - 10. Windows.
 - 11. Accessories.
 - 12. Paint.
- B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work. All drawings must be signed and sealed by a NYS Licensed Professional Architect or Engineer.
 - 1. Anchor-Bolt Plans: Submit anchor-bolt plans and templates before foundation work begins. Include location, diameter, and projection of anchor bolts required to attach shed to foundation.



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2. Framing Drawings: Show complete fabrication of primary and secondary framing; include provisions for openings and removable wall sections. Indicate connections, distinguishing between shop and field applications. Include transverse cross-sections.
 3. Roof and Wall Panel Layout Drawings: Show layouts of panels including methods of support. Include details of edge conditions, joints, panel profiles, corners, anchorages, trim, flashings, closures, and special details including removable wall sections and fastening details. Distinguish between factory- and field-assembled work; show locations of exposed fasteners.
 - a. Show roof-mounted items.
 - b. Show wall-mounted items including doors, windows, and louvers.
- C. Samples for Initial Selection: For units with factory-applied color finish.
1. Roofing
 2. Siding
 3. Window trim
 4. Exterior & Interior Paint
- D. Samples for Verification: For each type of exposed finish required, prepared on Samples of material; sizes indicated below:
1. Metal Roof: Nominal 12 inches x 12 inches. Include fasteners, closures, and other exposed panel accessories.
 2. Exterior Wall Siding: Nominal 12 inches x 12 inches. Include fasteners, closures, and other exposed panel accessories.
 3. Flashing and Trim: Nominal 12 inches long. Include fasteners and other exposed accessories.
- E. Door Hardware Schedule: For doors and frames.
1. Door Hardware Schedule: Include installation details of door hardware. Organize schedule into door hardware sets indicating complete designations of every item required for each door or opening.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified manufacturer and installer.
- B. System Certificates: For each type of shed system, from manufacturer.
1. Letter of Design Certification Include the following:
 - a. Name and location of Project.
 - b. Order number.
 - c. Name of Manufacturer.
 - d. Name of Contractor.
 - e. Building dimensions including width, length, height, and roof slope.
- C. Manufacturer Certificates: For each product, from manufacturer.



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- D. Warranties: Sample of each component product warranty and assembled shed special warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Touch-Up Paint: Furnish touch-up paint for each paint product and color applied at the factory in air tight containers identified with labels describing contents, paint manufacturer, applicable shed component and color.
1. Furnish not less than 1 quart of each paint type and color.

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer with a minimum of five (3) years experience in producing prefabricated shed systems and components.
- B. Installer Qualifications: An experienced installer with a minimum of three (3) years experience in erecting and installing work similar in material, design, and extent to that indicated for this Project and who is acceptable to manufacturer.
- C. Source Limitations: Obtain prefabricated shed from single source from single manufacturer.
- D. Preinstallation Conference: Conduct conference at Project site.
1. Review methods and procedures related to prefabricated shed including, but not limited to, the following:
- a. Condition of foundations and other preparatory work performed by other trades.
 - b. Structural load limitations.
 - c. Construction schedule. Verify availability of materials and erector's personnel, equipment, and facilities needed to make progress and avoid delays.
 - d. Compliance and coordination with requirements for electrical, plumbing and irrigation systems.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components and other manufactured items so as not to be damaged or deformed. Package components for protection during transportation and handling.
- B. Unload, store, and erect components in a manner to prevent bending, warping, twisting, and surface damage.

1.8 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when weather conditions permit installation according to manufacturers' written instructions and warranty requirements.



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1.9 COORDINATION

- A. Coordinate sizes and locations of concrete slab and casting of anchor-bolt inserts into foundation slab. Concrete, reinforcement, and formwork requirements are specified in Section 033000 - Cast-in-Place Concrete.
- B. Coordinate with all utilities provided for in shed as specified in Division 22 Plumbing, Division 26 Electrical, Division 33 Utilities, and Section 32800 Irrigation System.

1.10 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of the shed that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Structural failures.
 - b. Deterioration of finishes, and other materials beyond normal weathering.
 - 2. Warranty Period: One year from date of Substantial Completion.
- B. Product Warranties: provide all manufacturer warranties for:
 - 1. Metal Roof: Twenty year
 - 2. Fiber Cement Exterior Siding: Twenty year
 - 3. Wall & Roofing Waterproofing: Fifteen years
 - 4. Vapor Shield: Twenty years
 - 5. Windows: One year
 - 6. Doors: One year

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide prefabricated shed as per Classic: 6'x6'(interior dimension), customized as indicated on the Drawings; as manufactured by Modern Shed 4755 Colorado Ave S (Suite A), Seattle, WA 98134; Craig LaDuke Regional Manager / Dealer, 810-364-5600; craigl@ladukeconstruction.com or Approved Equal. The salient characteristics of the shed to be provided are set forth in Sections 2.2 and 2.3.

2.2 GENERAL

- A. Description: Provide a shed capable of withstanding structural and other loads, and exposure to weather without failure or infiltration of water into building interior.



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- B. Frame Type: timber framed.
- C. Wall & Roof Construction: Manufacturer's standard, consisting of load-bearing walls and rafters. The shed shall be designed so that two walls and the roof can be removed and reassembled as required for maintenance for the well head.

2.3 SYSTEM PERFORMANCE

- A. Structural Performance: Shed shall withstand the effects of gravity loads and other loads, stresses and requirements in conformance to Building Code of New York City (2008).

2.4 COMPONENTS

- A. Timber Framing: Manufacturer's standard system, designed to withstand required loads and specified requirements as stated in 2.3.
- B. Roofing System: Manufacturer's standard system, factory painted metal roof with waterproofing and vapor shield, sheathing, R30 rigid insulation, timber framing with plywood ceiling. Roofing system shall be delivered preassembled with the metal roof and hatch requiring field assembly. All materials and attachments shall be provided by the manufacturer for installation by the Contractor.
- C. Wall System: Manufacturer's standard system, fiber cement 'open-joint' factory painted smooth finish siding, vapor shield, moisture resistant sheathing, R-13 Denim insulation, timber framing and factory painted marine plywood interior walls. Walls system shall be delivered preassembled with siding requiring field assembly. Manufacturer shall provide siding pre-drilled and pre-cut with all attachments for installation by the Contractor. Wall system design shall provide for removable walls as indicated in contract drawings.
- D. Doors and Frames: Doors and frames shall be a commercial grade steel with stainless steel hardware and clear anodized aluminum louver with insect screens as provided by the manufacturer.
- E. Door Hardware: All hardware shall be stainless steel and include but not be limited to the following:
 - 1. Hinges.
 - 2. Threshold.
 - 3. Lockset: Mortise style lockset with L-shaped handle entry function and keyed deadbolt lock as a single piece assembly shall be provided by the manufacturer.
 - 4. Door Closer: Automatic door closer with set angle hold open for one door per door set.
 - 5. Locking Slide Bolt: Stainless steel slide bolt with hasp to secure door in open and closed position for one door per door set.
- F. Transom Windows: Manufacturer's standard, fixed dual glazed with clear anodized aluminum finish as indicated on the Contract Drawings.
- G. Sealants and Caulking: provided by the manufacturer.



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- H. Fasteners and Hardware: stainless steel or galvanized as provided by the manufacturer.
- I. Anchor Bolts: Provided by the Contractor as approved by the manufacturer, shall be hot-dip galvanized and of the sizes indicated on the approved shop drawings.

2.5 FABRICATION

- A. General: Design components and field connections required for erection to permit easy assembly.
 - 1. Mark each piece and part of the assembly to correspond with previously prepared erection drawings, diagrams, and instruction manuals.
 - 2. Fabricate and finish panels at the factory to greatest extent possible, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with erector present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Before erection proceeds, survey elevations and locations of concrete slab and locations of anchor bolts, bearing plates, and other embedments to receive framing for compliance with requirements and manufacturer's tolerances.
- C. Proceed with erection only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural framing secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural framing, connections, and bracing are in place unless otherwise indicated.

3.3 INSTALLATION

- A. Erect shed according to manufacturer's written erection instructions and erection drawings.
- B. Do not field cut, drill, or alter structural members without written approval from the manufacturer.
- C. Set structural framing accurately in locations and to elevations indicated. Maintain structural stability of frame during erection.



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- D. Walls and Roof Installation: system components shall be installed in strict accordance with manufacturer's written instructions.
- E. Door and Frame Installation: Install doors and frames plumb, rigid, properly aligned, and securely fastened in place according to manufacturers' written instructions. Coordinate installation with wall flashings and other components. Water seal perimeter of each door frame in accordance with manufacturer approved method.
- F. Window Installation: Install windows plumb, rigid, properly aligned, without warp or rack of frames or sash, and securely fasten in place according to manufacturer's written instructions. Coordinate installation with wall flashings and other components. Seal perimeter of each window in accordance with manufacturer approved method.

3.4 ADJUSTING

- A. Doors: After completing installation, test and adjust doors to operate easily, free of warp, twist, or distortion.
- B. Door Hardware: Adjust and check each operating item of door hardware and each door to ensure proper operation and function of every unit. Replace units that cannot be adjusted to operate as intended.

3.5 CLEANING AND PROTECTION

- A. Repair damaged finishes to manufacturer's written instructions and to Commissioner's satisfaction.
- B. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.
- C. Walls and Roof Panels: Remove temporary protective coverings and strippable films, if any, as panels are installed. On completion of panel installation, clean finished surfaces as recommended by panel manufacturer. Maintain in a clean condition during construction.
- D. Doors and Frames: Immediately after installation, sand rusted or damaged areas of paint until smooth and apply factory finish touch-up paint.
 - 1. Immediately before final inspection, remove protective wrappings from doors and frames.
- E. Windows: Clean surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.

END OF SECTION 133419

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SECTION 220523 – VALVES, IRRIGATION FILTER AND VALVE BOXES

PART 1 GENERAL

1.01 SUMMARY

- A. Extent of valve work is indicated on the drawings and by the requirements of this specification.

1.02 RELATED DOCUMENTS

- A. Copper Tubing and Fittings: Section 331103
- B. Pipe and Valve Identifications: Section 220553

1.03 ABBREVIATIONS

- A. WOG: Water, oil, gas.
- B. WSP: Working steam pressure.

1.04 SUBMITTALS

- A. Product Data: Manufacturer's catalog sheets and specifications for each valve type.
- B. Valve Schedule: List type of valve, manufacturer's model number, and size for each service application.

1.05 MAINTENANCE

- A. Special Tools:
 - 1. One wrench for each type and size wrench operated plug valve.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver valves properly protected, and undamaged.
- B. Properly protect all valves so as to prevent damage to the valve or the introduction of foreign material into the valve.
- C. Examine all valves before installation. Do not install any valve that is found to be defective.

PART 2 PRODUCTS

2.01 VALVES - GENERAL

VALVES, IRRIGATION FILTER AND VALVE BOXES

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- A. Valve Standardization: Valves from one or more manufacturers may be used, however valves supplied for each specific valve type shall be the product of one manufacturer.
- B. Valves shall be first quality, free from all imperfections and defects, with body markings indicating manufacturer and rating.
- C. Valve parts of same manufacturer, size and type shall be interchangeable.
- D. Manually operated gate, globe and angle valves shall be of rising stem type, unless otherwise specified.
- E. Valves which use packing shall be capable of being packed when wide open and under full working pressure.
- F. Size valves the same size as the piping in which they are installed, unless specified otherwise.

2.02 GATE VALVES

- A. 125 psig WSP, 200 psig WOG, bronze body, union bonnet, solid wedge disc, and threaded ends. Acceptable Valves: Crane428UB, Hammond IB617, Jenkins 47CU, Milwaukee 1152, Nibco T13, and Stockham B105 or approved equal.
- B. 125 psig WSP, 200 psig WOG, bronze body, threaded bonnet, solid wedge disc, and solder ends. Acceptable Valves: Crane 1330, Hammond IB635, Jenkins 991AJ, Milwaukee 149, Nibco S111, and Stockham B108 or approved equal.

2.03 PLUG VALVES

- A. 200 psig WOG, lubricated type with standard port opening, cast iron or semi-steel body, sealed lubrication system with lubricant fitting and dial indicator, cylindrical plug or teflon tapered plug, lubricant grooves in body or plug, threaded or flanged ends depending on size, and capable of lubrication with valve under pressure and plug in any position.
 - 1. Acceptable Valves:
 - a. 1/2 inch to 3 inch size: Homestead 611 & 612, Resun R1430 & R1431, and Rockwell 142 & 143 or approved equal.
 - 2. Operators:
 - a. 6 inch size and Less: Wrench operator.

2.04 BALL VALVES

- A. 150 psig WSP, 600 psig WOG, 2 piece bronze body, solid blow-out proof stem, teflon seats, chrome plated brass ball, teflon seals, corrosion resistant steel lever handles with vinyl grips, balancing stop, and threaded or solder ends.

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Acceptable Manufacturers: Conbraco, Hammond, Milwaukee, Nibco, and Watts or approved equal.

2.05 CHECK VALVES

- A. 125 psig WSP, 200 psig WOG, bronze body, brass or bronze trim, horizontal swing, renewable and regrindable disc, and threaded ends. Face discs for cold water service with teflon. Acceptable Valves: Crane 37, Hammond IB940, Jenkins 4092, Milwaukee 509, Nibco T413Y, and Stockham B319Y.

2.06 DRAIN/HOSE BIBB VALVE

- A. Cast brass body with renewable units, hose bibb vacuum breaker (ASSE 1011) with drainage feature, and removable cast iron handwheel with vandal resistant fastener.
 - 1. Valve must be completely assembled to make hose connection.
 - 2. Connections: 1/2 or 3/4 inch threaded or solder end inlet, and 3/4 inch hose bibb outlet.

2.07 VALVE BOX

- A. Box: 5 1/4" diameter valve boxes shall be Bingham & Taylor Fig. No. 4908 with a Fig No. 4904-L locking cover, or Equivalent by Clow, Alhambra Foundary or approved equal. The cover shall have the designation "WATER" cast thereon. The boxes shall extend within the limits called for on the plans.
- B. Brick: The brick shall be made from clay or shale, well burned, of a quality approved by the commissioner. The mortar shall be composed of one part Portland Cement and two parts sand.
- C. Drainage Stone: The drainage stone shall be clean broken traprock, or other approved stone, all of which shall pass a one-inch square opening screen and retained on a 5/8 inch square opening screen.

2.08 POLYMER CONCRETE VAULT

- A. Vault and cover constructed pre-cast polymer concrete.
- B. Furnish boxes, rings and lids that meet all the requirements of ANSI/SCTE 77 2007, including Tier 22 loading (H20)
- C. Vault and cover shall be manufactured by Hubbell / Quazite, Highline, New Balance, Armorcast, Carson or approved equal.
- D. Manufacturer lids with the following markings in the logo area, in 1-inch recessed letters.

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1. "Sprinkler Control" when the junction box contains sprinkler piping.
- E. Lid Access Points: recessed steel pull slots to allow removal of cover with a hook or lever.
- F. Bolts: stainless steel recessed hex head bolts with washer.

2.09 AIR RELEASE VALVE

- A. Valve body rated to 200 PSI WOG, tested to 300 PSI, float tested to 1,000 PSI.
- B. Working pressure: 10 – 150 PSI with 3/32" orifice.
- C. Minimum venting rated at 150 PSI with 3/32" orifice = 14.7 SCFM
- D. Cast iron A126 class B body, float operated, valve size 3/4" NPT inlet and 1/4" NPT outlet.
- E. Manufacturers: GA Industries, Mini-Matic, Fig. 905 pressure type air vent; Val-Matic, Model No. 15A.2; Dezurik, APCO air release valves or approved equal.

2.10 IRRIGATION FILTER

- A. General: Irrigation filter should be plastic body, stainless steel perforated screen.
- B. Maximum flow rate 220 GPM, inlet/outlet = 3", filtration degrees = 500 micron, max. working pressure 145 PSIG, maximum working temperature 140°F.
- C. Manufacturer: AMIAD, Model No. 3" TL or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

- A. General: Install valves at locations noted on the drawings or specified.
- B. Setting: The valve boxes shall be set plumb, as shown on the plans, on a footing or brick laid in cement mortar, supported on a foundation of broken stone. The entire area surrounding the valve box shall be fully compacted after setting.

END OF SECTION 220523

SECTION 220553 - PIPE AND VALVE IDENTIFICATION

PART 1 GENERAL

1.01 SUMMARY

- A. Work of this section includes the following:
 - 1. Tags
 - 2. Charts and Frames
 - 3. Pipe Line Identification

1.02 REFERENCES

- A. ANSI A13.1 - Scheme for Identification of Piping Systems.

1.03 SUBMITTALS

- A. Product Data: Catalog sheets, specifications and installation instructions for each item specified.

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. W.H. Brady Co., Milwaukee, WI.
- B. Emed Co., Buffalo, NY.
- C. Panduit Corp., Tinley Park, IL.
- D. Seton Nameplate Corp., New Haven, CT.
- E. Approved Equal.

2.02 PIPE MARKERS AND ACCESSORIES

- A. Snap-on Marker: One piece wrap around type constructed of precoiled acrylic plastic with clear polyester coating, integral flow arrows, legend printed in alternating directions, 3/4 inch adhesive strip on inside edge, and 360 degree visibility.
- B. Pipe Size Labels: Pressure sensitive adhesive backed type constructed of vinyl with clear polyester coating, vertical reading pipe size in inches, and legend size matching adjacent pipe marker.

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2.03 PIPE SERVICE IDENTIFICATION TAGS

- A. Type: No. 19 B & S gage brass, with 1/4 inch high pipe service abbreviated legend on one line, over 1/2 inch high pipe size legend in inches, both deep stamped and black filled; and 3/16 inch top hole for fastener.
- B. Size: 2 inch square tag.
- C. Fasteners: Brass "S" hook or brass jack chain of size as required for pipe to which tag is attached.

2.04 VALVE SERVICE IDENTIFICATION TAGS

- A. Type: No. 19 B & S gage brass, with 1/4 inch high valve service abbreviated lettering on one line over 1/2 inch high valve service chart number, both deep stamped and black filled; and with 3/16 inch top hole for fastener.
- B. Sizes:
 - 1. Plumbing Use: 1-1/2 inch hexagon.
- C. Fasteners: Brass "S" hook or brass jack chain of size as required for valve stem or handle to which tag is attached.

2.05 VALVE SERVICE IDENTIFICATION CHART FRAMES

- A. Type: Satin finished extruded aluminum frame with rigid clear plastic glazing, size to fit 8-1/2 x 11 inches valve chart.

PART 3 EXECUTION

3.01 PREPARATION

- A. Complete testing, insulation and finish painting work prior to completing the Work of this Section.
- B. Clean pipe surfaces with cleaning solvents prior to installing piping identification.

3.02 INSTALLATION

- A. Install the Work of this Section in accordance with the manufacturer's printed installation instructions, unless otherwise specified.
- B. Pipe Size Labels: Install labels adjacent to each pipe marker and upstream from flow arrow. Install a minimum of 2 pipe size labels at each specified location, 90 degrees apart on visible side of pipe.

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- C. Pipe Service Identification Tags: Attach tags to piping being identified with "S" hooks or jack chains.

3.03 PIPING IDENTIFICATION SCHEDULE

- A. Piping Identification Types:
 - 1. Piping: Snap-on marker or stick-on marker.

3.04 VALVE IDENTIFICATION SCHEDULE

- A. Valve Service Identification Tags:
 - 1. Tag control valves, except valves at equipment, with a brass tag fastened to the valve handle or stem, marked to indicate service and numbered in sequence for the following applications:
 - a. Domestic water valves controlling mains, risers and branch runouts.
- B. Valve Service Identification Charts:
 - 1. Provide 2 framed valve charts for each piping system specified to be provided with valve identification tags. Type charts on 8-1/2 x 11 inches heavy white bond paper, indicating valve number, service and location.
 - 2. Hang framed charts at locations as directed.

END OF SECTION 220553

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SECTION 221100 - PLUMBING PIPING

PART 1 GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. Valves and Valve Boxes: Section 220523.
- B. Pipe and Valve Identification: Section 220553.

1.02 SUBMITTALS

- A. Product Data:
 - 1. Catalog sheets and specifications indicating manufacturer name, type, applicable reference standard, schedule, or class for specified pipe and fittings.
 - 2. Material Schedule: Itemize pipe and fitting materials for each specified application in Pipe and Fittings Schedule in Part 3 of this Section. Where optional materials are specified indicate option selected.
- B. Quality Control Submittals
 - 1. Brazer Qualification Data: Copies of certification; include names, home addresses and social security numbers of brazers.

1.03 QUALITY ASSURANCE

- A. Qualification of Brazers: Comply with the following:
 - 1. The persons performing the brazing and their supervisors shall be personally experienced in brazing procedures.

PART 2 PRODUCTS

2.01 STEEL PIPE AND FITTINGS

- A. Steel Pipe for Threading: Standard weight, Schedule 40, black or galvanized; ASTM A 53 or ASTM A 135.
- B. Cast Iron Fittings:
 - 1. Flanged Fittings and Threaded Flanges: ASME B16.1.
 - a. Standard Weight: Class 125.
 - b. Extra Heavy: Class 250.
- C. Unions: Malleable iron, 250 lb class, brass to iron or brass to brass seats.
- D. Couplings: Same material and pressure rating as adjoining pipe, conforming to standards for fittings in such pipe. Use taper tapped threaded type in screwed pipe systems operating in excess of 15 psig.

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- E. Nipples: Same material and strength as adjoining pipe, except nipples having a length of less than one inch between threads shall be extra heavy.

2.02 COPPER AND BRASS PIPE, TUBING AND FITTINGS

- A. Copper Tube, Type L: ASTM B 88.
- B. Wrot Copper Tube Fittings, Solder Joint: ASME B16.22.
- C. Cast Copper Alloy Tube Fittings, Solder Joint: ASME B16.18.
- D. Flanges: Conform to the Standards for fittings used in systems.
 - 1. Brazing Flanges: ASME B16.24, hubs modified for brazing ends.

2.03 DIELECTRIC CONNECTORS

- A. Dielectric Fitting: Bronze ball valve with end connections and pressure rating to match associated piping.
 - 1. Nipples with inert non-corrosive thermoplastic linings are not acceptable.
- B. Flange Electrical Insulation Kit: Consisting of dielectric sleeves and washers, and dielectric gasket.
 - 1. Rated 150 psi at 250 degrees F: ANSI Class 150, full faced neoprene gasket with bolt holes, double phenolic washers, and mylar sleeves; Model 150 by APS, Lafayette, LA 70596, (337) 233-6116.

2.04 PIPE SLEEVES

- A. Type A: Schedule 40 steel pipe.

2.05 FLOOR PLATES

- A. Cast Iron or Malleable Iron: Solid type, galvanized finish, with set screw:
 - 1. Model 395 by Anvil International, Portsmouth, NH 03802, (603) 422-8000.
 - 2. Model 900-016XX by Landsdale International, Westville, NJ 08093, (800) 908-0523.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install piping at approximate locations indicated, and at maximum height.
- B. Install piping clear of door swings, and above sash heads.
- C. Make allowances for expansion and contraction.

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- D. Allow for a minimum of one inch free air space around pipe or pipe covering, unless otherwise specified.
- E. Install horizontal piping with a constant pitch, and without sags or humps.
 - 1. Water Piping: Pitch 1/4 inch per 10 feet upward in direction of flow, unless otherwise noted. If it is not possible to maintain constant pitch, establish a new low point and continue. At the low point, provide a 1/2 inch drip leg and gate valve with a hose bibb end. Provide an air vent at the high point.
- F. Install vertical piping plumb.
- G. Use fittings for offsets and direction changes, except for Type L soft annealed copper temper water tube.
- H. Cut pipe and tubing ends square; ream before joining.
- I. Threading: Use American Standard Taper Pipe Thread Dies.
 - 1. Thread brass pipe with special brass threading dies.

3.02 WATER PIPING SYSTEM

- A. Connect runouts to the upper quadrant of the main, and run upward at not less than 45 degrees before extending laterally.

3.03 PIPE JOINT MAKE-UP

- A. Threaded Joint: Make up joint with a pipe thread compound applied in accordance with manufacturer's printed application instructions for the intended service.
- B. Soldered Joint: Thoroughly clean tube end and inside of fitting with emery cloth, sand cloth, or wire brush. Apply flux to the pre-cleaned surfaces. Install fitting, heat to soldering temperature, and join the metals with type solder specified. Remove residue.
- C. Flanged Pipe Joint:
 - 1. Provide a gasket for each joint.
 - 2. Coat bolt threads and nuts with anti-seize lubricant before making up joint.
- D. Brazed Joint: Thoroughly clean tube end and inside of fitting with emery cloth, sand cloth, or wire brush. Apply flux to the pre-cleaned surfaces. Install fitting, heat to brazing temperature, and join the metals with brazing alloy. Remove residue.
- E. Dissimilar Pipe Joint:

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1. Joining Dissimilar Threaded Piping: Make up connection with a threaded coupling or with companion flanges.
2. Joining Dissimilar Non-Threaded Piping: Make up connection with adapters recommended by the manufacturers of the piping to be joined.
3. Joining Galvanized Steel Pipe and Copper Tubing: Make up connection with a dielectric connector.

3.04 FLOOR PLATES

- A. Install plates for exposed uninsulated piping passing thru floors, walls, ceilings, and exterior concrete slabs as follows:
 1. Unfinished Spaces (Including Exterior Concrete Slabs): Solid, unplated cast iron.
 2. Fasten plates with set screws.
 3. Plates are not required in pipe shafts or furred spaces.

3.05 PIPE AND FITTING SCHEDULE

- A. Where options are given, choose only one option for each piping service. No deviations from the selected option will be allowed.
- B. Water (Above Ground):
 1. 3 inch and Under: Type L hard drawn copper tube, with cast copper alloy or wrought copper solder type fittings, and joints made up with Type 3 solder.

END OF SECTION 221100

SECTION 260221 - MOTOR CONTROLLERS

PART 1 GENERAL

1.01 REFERENCES

- A. NEMA MG-1 - Motors and Generators.
- B. NEMA ICS - General Standards for Industrial Control and Systems.
- C. UL508 - Electric Industrial Control Equipment.
- D. IEEE 519 - Recommended Practices and Requirements for Harmonic Control in Electric Power Systems.

1.02 SUBMITTALS

- A. Submittal Package: Submit the product data, and quality control submittals specified below at the same time as a package.
- B. Product Data:
 - 1. Motor Controllers: Catalog sheets, specifications, and installation instructions. Submit product data for motor controllers simultaneously with product data required for motors.
 - a. Identify each controller for use with corresponding motor.
 - b. Describe overload devices being supplied with each motor controller (include equipment manufacturer's recommendations).
 - c. Enumerate and describe all accessories being supplied with each motor controller.
 - 2. All Motors:
 - a. Catalog sheets, specifications and installation instructions.
 - b. Data proving that voltage rating of each motor is in accordance with specified NEMA standard motor voltage.
 - c. Data proving that the service factor and temperature rise for the motor's insulation system conforms to NEMA standards for each motor's specific application.
 - d. Data proving that the motor efficiency rating conforms to NEMA testing and marking standards MG1-12.54 and 12.55.
 - 3. Additional Data for Motors Controlled by Solid State or Adjustable Speed Motor Controllers:
 - a. Data proving that the motor has been designed for use with associated controller.
 - b. Data proving that the motor has been designed for use with DC injection braking.
- C. Quality Control Submittals:
 - 1. Harmonic analysis report.

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2. Company Field Advisor Data: Include:
 - a. Name, business address and telephone number of Company Field Advisor secured for the required services.
 - b. Certified statement from the Company listing the qualifications of the Company Field Advisor.
 - c. Services and each product for which authorization is given by the Company listed specifically for this project.

- D. Contract Closeout Submittals:
 1. System acceptance test report.
 2. Certificate: Affidavit, signed by the Company Field Advisor and notarized, certifying that the system meets the contract requirements and is operating properly.
 3. Operation and Maintenance Data: Deliver 2 copies, covering the installed products, to the Commissioner's Representative.

1.03 START UP AND TRAINING

- A. Company Field Advisor: Secure the services of a Company Field Advisor from the Company providing the solid state controllers and the adjustable speed controllers for a minimum of 8 working hours for the following:
 1. Render advice regarding installation, programming, final adjustment, and testing.
 2. Witness final system test and then certify with an affidavit that the motor controllers are installed in accordance with the contract documents and are operating properly.
 3. Train facility personnel on the operation and maintenance of the motor controllers (minimum of two 1 hour sessions).
 4. Explain available service programs to facility supervisory personnel for their consideration.
- B. Service Availability: A fully equipped service organization shall be available to service the completed Work.

1.04 WARRANTY

- A. Manufacturer's standard form in which manufacturer agrees to repair or replace components or entire motor controller that fail in materials or workmanship within specified warranty period.
 1. Warranty Period: Two years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MOTORS

- A. Classification:

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1. Classification According to Application: Comply with NEMA standards for general-purpose alternating-current squirrel-cage induction motors, except:
 - a. Furnish NEMA definite-purpose or special-purpose motors when required to suit the application.
 - b. Furnish NEMA type other than squirrel-cage construction when required to suit the application.
 2. Classification According to Environmental Protection and Methods of Cooling: Comply with NEMA requirements for a dripproof machine unless otherwise specified or indicated on the drawings, or required to suit the application.
- B. Efficiency: Motors shall be stamped with a NEMA nominal efficiency rating in accordance with NEMA testing and marking standards MG1-12.54 and 12.55.
1. Nominal full-load three phase motor efficiency:

OPEN MOTORS			
RPM	1200	1800	3600
HP			
1.0	80.0	82.5	
1.5	84.0	84.0	82.5
2.0	86.5	84.0	84.0
3.0	86.5	86.5	84.0
5.0	88.5	87.5	85.5
7.5	89.5	88.5	87.5
10	90.2	89.5	88.5
15	91.0	90.2	89.5
20	90.2	91.0	90.2
25	91.7	92.4	91.0
30	92.4	93.0	92.4
40	93.0	93.0	92.4
50	92.4	94.1	92.4
60	93.0	93.6	93.0
75	93.6	94.1	93.6
100	93.6	94.1	93.6
125	94.1	94.1	93.6
150	94.5	94.5	94.5
200	94.5	95.0	95.4

CLOSED MOTORS			
RPM	1200	1800	3600
HP			
1.0	81.5	84.0	
1.5	85.5	85.0	84.0

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CLOSED MOTORS			
RPM	1200	1800	3600
HP			
2.0	86.5	84.0	85.5
3.0	88.5	88.5	86.5
5.0	88.5	88.5	87.5
7.5	89.5	91.0	88.5
10	89.5	91.0	89.5
15	90.2	91.0	89.5
20	91.0	91.7	90.2
25	91.7	92.4	90.2
30	92.4	93.6	91.0
40	93.0	93.0	91.0
50	93.6	93.6	92.4
60	93.6	94.1	94.1
75	94.1	94.5	94.1
100	94.1	95.0	94.1
125	94.1	95.0	94.1
150	95.0	95.0	94.1
200	95.0	95.8	95.01

2. Furnish motors having an efficiency higher than that indicated above where specified to comply with utility company energy efficiency rebate program requirements.

C. Motor (Nameplate) Voltage:

1. 120/208 V, Three Phase, 4W, Premises Wiring Systems:
- Motors Less Than 1 hp: NEMA standard motor voltage 115 V, single phase, 60 Hz.
 - Motors 1 hp and Larger: NEMA standard motor voltage 200 V, three phase, 60 Hz. 208 V, 208-230 V, 220 V, or 230 V motors are not acceptable.

D. Horsepower Capacity:

- Each motor shall not be overloaded by the apparatus it operates under every condition of operation.
- The horsepower capacity shall be the continuous rating based on the nameplate horsepower rating. (The motor may not be overloaded up to the horsepower obtained by multiplying the rated horsepower by the service factor shown on the nameplate).
- Where a minimum horsepower capacity is listed, furnish a motor larger than the minimum, if required in a particular case.

- E. Bearings: Equip motors 1/2 hp and larger with ball bearings unless otherwise specified or indicated on the drawings.

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- F. Speed: As required and approved to meet the requirements of the service for which motors are intended.
- G. Motor Winding Protection: Where indicated, equip motors with imbedded temperature measuring detectors in the windings (thermocouples or resistance thermometers) with control unit and accessories for direct reading of stator temperatures. Alarm shall sound and motor controller trip at temperature recommended by motor manufacturer.
- H. Additional Requirements For Motors Used With Solid State and Adjustable Speed Motor Controllers:
 - 1. Designed specifically for use with type of controller required.

2.02 ADJUSTABLE SPEED MOTOR CONTROLLERS

- A. Microprocessor based, sine-coded pulse-width-modulation design variable frequency/variable voltage adjustable speed motor controller:
 - 1. Companies and Models: Furnish the Company's model which meets the requirements of the motor and driven equipment combination, suits the electrical system parameters, and accommodates the operating features and accessories:
 - a. Allen-Bradley Co. Inc.'s 1333 (3/4-50 hp/230 V, 1-5 hp/460 V), 1336 (1-100 hp/230 V, 1-500 hp/460 V), 1352 (25-1400 hp/460 V).
 - b. Asea Brown Boveri's ACH500 (2-25 hp/230 V, 3-400 hp/460 V), ACS 200 (2-3 hp/230 V, 1-5 hp/460 V), SAMI STAR 30-1300 hp/460 V).
 - c. Eaton Corp.'s AF-1500 (1-20 hp/230 V, 1-30 hp/460 V, IS5000+ (5-600 hp/460 V).
 - d. Furnas Electric Co.'s Micro 7000 (2-25 hp/230 V, 2-60 hp/460 V), Super 7000+ (75-200 hp/460 V).
 - e. General Electric Co.'s AF-300B (3/4-30 hp/230 V, 1/4-300 hp/460 V).
 - f. Reliance Electric Co.'s GP2000 (1/4-50 hp/230 V, 1/4-100 hp/460 V).
 - g. Southcon Industrial Controls Inc.'s Magnum PWM (1/4-200 hp/230 V, 1/4 to 400 hp/460 V).
 - h. Square D Co.'s Class 8804 Omegapak (1-150 hp/230 V, 1-300 hp/460 V).
 - i. Westinghouse Electric Corp.'s Accutrol 110 (1-75 hp/230 V, 2-20 hp/460 V).
 - j. Approved Equal.
 - 2. Operating Features And Accessories:
 - a. Suitable for variable torque load.
 - b. Soft start: Adjustable time range of 2 to 600 seconds.
 - c. Not used.
 - d. Ground fault protection.

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- e. Ambient operating temperature range 0 to 40 degrees C.
Maximum humidity 95 percent.
- f. Digital display showing operational functions:
 - 1) Speed.
 - 2) Output voltage.
 - 3) Output current.
 - 4) Elapsed time.
- g. Digital display, or LED's showing diagnostic functions, including:
 - 1) Overcurrent.
 - 2) Overvoltage.
 - 3) Undervoltage.
 - 4) Overtemperature.
 - 5) Ground fault.
 - 6) Overload.
- h. Input voltage: Suitable for use on 208 V ac 3 phase circuit.
- i. Output voltage 0 to 208 V ac, 3 phase.
- j. Frequency:
 - 1) Input: 60 Hz.
 - 2) Selectable Output: 3 to 60 Hz, with separately adjustable min/max frequency limits and capability to lock these limits so that they cannot be exceeded.
 - 3) Frequency Reject: Programmable (both the width and the midpoint of up to 3 bands, or end points) to reject operation within the selected bands.
 - 4) Output regulation: + .06 percent.
- k. 100 percent continuous current rating, 150 percent for one minute every 10 minutes.
- l. Local control panel for manual operation:
 - 1) Start-stop pushbuttons.
 - 2) Hand-Off-Automatic selector switch.
 - 3) Hand-Automatic selector switch, and start-stop pushbuttons.
 - 4) Power on light.
 - 5) Run light.
- m. Local programming panel for:
 - 1) Acceleration rate.
 - 2) Deceleration rate.
 - 3) Start torque (boost).
 - 4) Maximum frequency.
 - 5) Volts/Hz pattern.
 - 6) Restart Mode: Automatic restart upon return of input power, manual reset/restart on overload.
 - 7) Restart Mode: Manual reset/restart upon return of input power or overload.
 - 8) Start and direction, local or remote.
 - 9) Stop mode, ramp or coast.

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- n. Interface Input For Automatic Speed Control: Isolated, direct proportional automatic speed follower which responds to an externally supplied signal from the speed reference signal source for automatic motor speed control when the controller is in the automatic mode of operation.
 - 1) 0-10 V dc.
 - 2) 4-20mA dc.
 - 3) Variable resistance.
 - 4) 3 to 15 psi pneumatic/electric transducer.
- o. Electronic overload device that monitors the motor function to provide motor overload protection at all speeds. Manual or automatic reset as specified under local programming panel.
- p. Motor winding protection, responsive to the motors' imbedded temperature measuring detectors.
- q. NEMA 12 enclosure.
- r. Input fusible disconnect switch with external operator.

2.03 NAMEPLATES

- A. General: Precision engrave letters and numbers with uniform margins, character size minimum 3/16 inch high.
 - 1. Phenolic: Two color laminated engraver's stock, 1/16 inch minimum thickness, machine engraved to expose inner core color (white).

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install the Work of this Section in accordance with the manufacturer's printed instructions.
- B. Nameplates: Identify each remote control station, indicating motor controlled. Identify each interlock switch, indicating purpose of switch:
 - 1. NEMA 1 Enclosures: Rivet or bolt nameplate to the cover.
 - 2. NEMA 12 Enclosures: Rivet or bolt and gasket nameplate to the cover.
 - 3. NEMA 3R, 4, 4X, 7, or 9 Enclosures: Attach nameplates to the cover using adhesive specifically designed for the purpose, or mount nameplate on wall or other conspicuous location adjacent to switch. Do not penetrate enclosure with fasteners.

3.02 FIELD QUALITY CONTROL

- A. Preliminary System Test:
 - 1. Preparation: Have the Company Field Advisor program and adjust the completed solid state and adjustable speed motor controllers and then operate them long enough to assure that they are performing properly.
 - 2. Run a preliminary test for the purpose of:

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- a. Determining whether motor controllers are in a suitable condition to conduct an acceptance test.
 - b. Checking instruments and equipment.
 - c. Training facility personnel.
- B. System Acceptance Test:
- 1. Preparation: Notify the Commissioner's Representative at least 3 working days prior to the test so arrangements can be made prior to the test to have a Facility Representative witness the test.
 - 2. Make the following tests:
 - a. Demonstrate that each solid state and adjustable speed motor controller performs its intended function.
 - b. Use the harmonics meter to determine the total harmonic distortion caused by the adjustable speed motor controllers.
 - 1) While the motors are running, measure the total harmonic distortion at the transformer serving the building.
 - 2) While the motors are running, measure the total harmonic distortion at the distribution transformer supplying the controllers.
 - 3) If total harmonic distortion caused by the adjustable speed motor controllers exceeds specified limit, install additional equipment as necessary to keep the total harmonic distortion caused by the adjustable speed motor controllers under the specified limit.
 - 3. Supply all equipment necessary for system adjustment and testing.
 - 4. Submit written report of test results signed by the Company Field Advisor and the Commissioner's Representative. Mount a copy of the final report in a plexiglass enclosed frame assembly in a conspicuous location on or adjacent to each motor controller.

END OF SECTION 260221

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SECTION 260519- WIRING, GENERAL - 600 VOLTS AND UNDER

PART 1 GENERAL

1.01 SUBMITTALS

- A. Product Data: Catalog sheets, specifications and installation instructions.

1.02 PRODUCT DELIVERY

- A. Mark and tag insulated conductors and cables for delivery to the site. Include:
1. Contractor's name.
 2. Project title and number.
 3. Date of manufacture (month & year).
 4. Manufacturer's name.
 5. Data which explains the meaning of coded identification (UL assigned electrical reference numbers, UL assigned combination of color marker threads, etc.).
 6. Environmental suitability information (listed or marked "sunlight resistant" where exposed to direct rays of sun; wet locations listed/marked for use in wet locations; other applications listed/marked suitable for the applications).

PART 2 PRODUCTS

2.01 INSULATED CONDUCTORS AND CABLES

- A. Date of Manufacture: No insulated conductor more than one year old when delivered to the site will be acceptable.
- B. Acceptable Companies: American Insulated Wire Corp., BICC General Cable Industries Inc., Cerro Wire & Cable Co. Inc., Pirelli Cable Corp., Rome Cable Corp., Southwire Co. or approved equal.
- C. Conductors: Annealed uncoated copper or annealed coated copper in conformance with the applicable standards for the type of insulation to be applied on the conductor. Conductor sizes No. 8 and larger shall be stranded.
- D. Types:
1. Electric Light and Power Wiring:
 - a. General: Rated 600V, NFPA 70 Type FEP, THHN, THW, THW-2, THWN, THWN-2, XHH, XHHW, XHHW-2.
 - b. THWN Gasoline and Oil Resistant: Polyvinylchloride insulation rated 600 V with nylon jacket conforming to UL requirements for type THWN insulation, with the words "GASOLINE AND OIL RESISTANT II" marked thereon.

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- c. USE, USE-2: Dual rated heat and moisture resistant insulation rated 600 V with jacket or dual purpose insulation/protective covering conforming to UL requirements for type USE service entrance cables.

2.02 ELECTRICAL CIRCUIT PROTECTIVE SYSTEM

- A. Minimum 1-Hour Fire Rating: A system listed in UL Building Materials Directory, product category Electrical Circuit Protective Systems (FHIT).

2.03 CONNECTORS

A. General:

1. Connectors specified are part of a system. Furnish connectors and components, and use specific tools and methods as recommended by connector manufacturer to form complete connector system.
2. Connectors shall be UL 486 A listed, or UL 486 B listed for combination dual rated copper/aluminum connectors (marked AL7CU for 75 degrees C rated circuits and AL9CU for 90 degrees C rated circuits).

B. Splices:

1. Spring Type:
 - a. Rated 105° C, 600V; Buchanan/Ideal Industries Inc.'s B-Cap, Electrical Products Div./3M's Scotchlok Type Y, R, G, B, O/B+, R/Y+, or B/G+, or Ideal Industries Inc.'s Wing Nuts or Wire Nuts.
 - b. Rated 150° C, 600V; Ideal Industries Inc.'s High Temperature Wire-Nut Model 73B, 59B or approved equal.
2. Indent Type with Insulating Jacket:
 - a. Rated 105° C, 600V; Buchanan/Ideal Industries Inc.'s Crimp Connectors, Ideal Industries Inc.'s Crimp Connectors, Penn-Union Corp.'s Penn-Crimps, or Thomas & Betts Corp.'s STA-KON or approved equal.
3. Indent Type (Uninsulated): Anderson/Hubbell's Versa-Crimp, VERSAtile, Blackburn/T&B Corp.'s Color-Coded Compression Connectors, Electrical Products Div./3M's Scotchlok 10000, 11000 Series, Framatome Connectors/Burndy's Hydent, Penn-Union Corp.'s BCU, BBCU Series, or Thomas & Betts Corp.'s Compression Connectors or approved equal.
4. Connector Blocks: NIS Industires Inc.'s Polaris System, or Thomas & Betts Corp.'s Blackburn AMT Series or approved equal.
5. Resin Splice Kits: Electrical Products Div./3M's Scotchcast Brand Kit Nos. 82A Series, 82-B1 or 90-B1, or Scotchcast Brand Resin Pressure Splicing Method or approved equal.

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6. Heat Shrinkable Splices: Electrical Products Div./3M's ITC SN, Raychem Corp.'s Thermofit Type WCS, or Thomas & Betts Corp.'s SHRINK-KON Insulators or approved equal.
 7. Cold Shrink Splices: Electrical Products Div./3M's 8420 Series or approved equal.
- C. Gutter Taps: Anderson/Hubbell's GP/GT with GTC Series Covers, Blackburn/T&B Corp.'s H-Tap Type CF with Type C Covers, Framatome Connectors/Burndy's Polytap KPU-AC, H-Crimpit Type YH with CF-FR Series Covers, ILSCO's GTA Series with GTC Series Covers, Ideal Industries Inc.'s Power-Connect GP, GT Series with GIC covers, NSI Industries Inc.'s Polaris System, OZ/Gedney Co.'s PMX or PT with PMXC, PTC Covers, Penn-Union Corp.'s CDT Series, Thomas & Betts Corp.'s Color-Keyed H Tap CHT with HTC Covers or approved equal.
- D. Terminals: Nylon insulated pressure terminal connectors by Amp-Tyco/Electronics, Electrical Products Div./3M, Framatome Connectors/Burndy, Ideal Industries Inc., Panduit Corp., Penn-Union Corp., Thomas & Betts Corp., Wiremold Co or approved equal.
- E. Lugs:
1. Single Cable (Compression Type Lugs): Copper, one or 2 hole style (to suit conditions), long barrel; Anderson/Hubbell's VERSAtile VHCL, Blackburn/T&B Corp.'s Color-Coded CTL, LCN, Framatome Connectors/Burndy's Hylug YA, Electrical Products Div./3M Scotchlok 31036 or 31145 Series, Ideal Industries Inc.'s CCB or CCBL, NSI Industries Inc.'s L, LN Series, Penn-Union Corp.'s BBLU Series, or Thomas & Betts Corp.'s 54930BE, 54850BE Series or approved equal.
 2. Single Cable (Mechanical Type Lugs): Copper, one or 2 hole style (to suit conditions); Blackburn/T&B Corp.'s Color-Keyed Locktite Series, Framatome Connectors/Burndy's Qiklug Series, NSI Industries Inc.'s Type TL, Penn-Union Corp.'s VI-TITE Terminal Lug Series, Thomas & Betts Corp.'s Locktite Series or approved equal.
 3. Multiple Cable (Mechanical Type Lugs): Copper, configuration to suit conditions; Framatome Connectors/Burndy's Qiklug Series, NSI Industries Inc.'s Type TL, Penn-Union Corp.'s VI-TITE Terminal Lug Series, Thomas & Betts Corp.'s Color-Keyed Locktite Series or approved equal.

2.04 TAPES

- A. Insulation Tapes:
1. Plastic Tape: Electrical Products Div./3M's Scotch Super 33+, Scotch 88, Plymouth Rubber Co.'s Plymouth/ Bishop Premium 85CW or approved equal.
 2. Rubber Tape: Electrical Products Div./3M's Scotch 130C, Plymouth Rubber Co.'s Plymouth/Bishop W963 Plysafe or approved equal.

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- B. Moisture Sealing Tape: Electrical Products Div./3M's Scotch 2200 or 2210, Plymouth Rubber Co.'s Plymouth/Bishop 4000 Plyseal-V or approved equal.
- C. Electrical Filler Tape: Electrical Products Div./3M's Scotchfil, Plymouth Rubber Co.'s Plymouth/Bishop 125 Electrical Filler Tape or approved equal.
- D. Color Coding Tape: Electrical Products Div./3M's Scotch 35, Plymouth Rubber Co.'s Plymouth/Bishop Premium 37 Color Coding or approved equal.
- E. Arc Proofing Tapes:
 - 1. Arc Proofing Tape: Electrical Products Div./3M's Scotch 77, Mac Products Inc.'s AP Series, Plymouth Rubber Co.'s Plymouth/Bishop 53 Plyarc or approved equal.
 - 2. Glass Cloth Tape: Electrical Products Div./3M's Scotch 27/Scotch 69, Mac Products Inc.'s TAPGLA 5066, Plymouth Rubber Co.'s Plymouth/Bishop 77 Plyglas or approved equal.
 - 3. Glass-Fiber Cord: Mac Products Inc.'s MAC 0527 or approved equal.

2.05 WIRE-PULLING COMPOUNDS

- A. To suit type of insulation; American Polywater Corp.'s Polywater Series, Electric Products Div./3M's WL, WLX, or WLW, Greenlee Textron Inc.'s Y-ER-EAS, Cable Cream, Cable Gel, Winter Gel, Ideal Industries Inc.'s Yellow 77, Aqua-Gel II, Agua-Gel CW, or Thomas & Betts Corp.'s Series 15-230 Cable Pulling Lubricants, Series 15-631 Wire Slick or approved equal.

2.06 TAGS

- A. Precision engrave letters and numbers with uniform margins, character size minimum 3/16 inches high.
 - 1. Phenolic: Two color laminated engraver's stock, 1/16 inch minimum thickness, machine engraved to expose inner core color (white).
 - 2. Aluminum: Standard aluminum alloy plate stock, minimum .032 inches thick, engraved areas enamel filled or background enameled with natural aluminum engraved characters.

2.07 WIRE MANAGEMENT PRODUCTS

- A. Cable Clamps and Clips, Cable Ties, Spiral Wraps, etc: Catamount/T&B Corp., Ideal Industries Inc. or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install conductors in raceways after the raceway system is completed.

3.02 CIRCUITING

- A. Do not change, group or combine circuits other than as indicated on the drawings.

3.03 COMMON NEUTRAL CONDUCTOR

- A. A common neutral may be used for 2 or 3 branch circuits where the circuits are indicated on the drawings to be enclosed within the same raceway, provided each branch circuit is connected to different phase busses in the panelboard.

- B. Exceptions - The following circuits shall have a separate neutral:

1. Circuits containing ground fault circuit interrupter devices.
2. Circuits containing solid state dimmers.
3. Circuits recommended by equipment manufacturers to have separate neutrals.

3.04 CONDUCTOR SIZE

- A. Conductor Size:

1. For Electric Light and Power Branch Circuits: Install conductors of size shown on drawings. Where size is not indicated, the minimum size allowed is No. 12 AWG.
2. For Class 1 Circuits:
 - a. No. 18 and No. 16 AWG may be used provided they supply loads that do not exceed 6 amps (No. 18 AWG), or 8 amps (No. 16 AWG).
 - b. Larger than No. 16 AWG: Use to supply loads not greater than the ampacities given in NFPA 70 Section 310-15.
3. For Class 2 Circuits: Any size to suit application.
4. For Class 3 Circuits: Minimum No. 18 AWG.

3.05 COLOR CODING

- A. Color Coding for 120/208 Volt Electric Light and Power Wiring:

1. Color Code:
 - a. 2 wire circuit - black, white.
 - b. 3 wire circuit - black, red, white.
 - c. 4 wire circuit - black, red, blue, white.
2. White to be used only for an insulated grounded conductor (neutral). If neutral is not required use black and red, or black, red and blue for phase to phase circuits.

- a. "White" for Sizes No. 6 AWG or Smaller:
 - 1) Continuous white outer finish, or:
 - 2) Three continuous white stripes on other than green insulation along its continuous length.

- b. "White" for Sizes Larger Than No. 6 AWG:
 - 1) Continuous white outer finish, or:
 - 2) Three continuous white stripes on other than green insulation along its continuous length, or:
 - 3) Distinctive white markings (color coding tape) encircling the conductor, installed on the conductor at time of its installation. Install white color coding tape at terminations, and at 1' 0" intervals in gutters, pullboxes, and manholes.

- 3. Colors (Black, Red, Blue):
 - a. For Branch Circuits: Continuous color outer finish.
 - b. For Feeders:
 - 1) Continuous color outer finish, or:
 - 2) Color coding tapes encircling the conductors, installed on the conductors at time of their installation. Install color coding tapes at terminations, and at 1' 0" intervals in gutter, pullboxes, and manholes.

- B. Color Coding For 277/480 Volt Electric Light and Power Wiring:
 - 1. Color Code:
 - a. 2 wire circuit – brown, gray.
 - b. 3 wire circuit – brown, yellow, gray.
 - c. 4 wire circuit – brown, yellow, orange, gray.

 - 2. Gray to be used only for an insulated grounded conductor (neutral). If neutral is not required use brown and yellow, or brown, yellow and orange for phase to phase circuits.
 - a. "Gray" For Sizes No. 6 AWG or Smaller.
 - 1) Continuous gray outer finish.

 - b. "Gray" For Sizes Larger Than No. 6 AWG:
 - 1) Distinctive gray markings (color coding tape) encircling the conductor, installed on the conductor at time of its

installation. Install gray color coding tape at terminations, and at 1' 0" intervals in gutters, pullboxes, and manholes.

- c. Colors (Brown, Yellow, Orange):
- d. For Branch Circuits: Continuous color outer finish.
- e. For Feeders:
 - 1) Continuous color outer finish, or:
 - 2) Color coding tapes encircling the conductors, installed on the conductors at the time of their installation. Install color coding tapes at terminations, and at 1' 0" intervals in gutters, pullboxes, and manholes.
- C. More Than One Nominal Voltage System Within A building: Permanently post the color coding scheme at each branch-circuit panelboard.
- D. Existing Color Coding Scheme: Where an existing color coding scheme is in use, match the existing color coding if it is in accordance with the requirements of NFPA 70.
- E. Color Code For Wiring Other Than Electric Light and Power: In accordance with ICEA/NEMA WC-30 "Color Coding of Wires and Cables". Other coding methods may be used, as approved.

3.06 IDENTIFICATION

- A. Identification Tags: Use tags to identify feeders and designated circuits. Install tags so that they are easily read without moving adjacent feeders or requiring removal of arc proofing tapes. Attach tags with non-ferrous wire or brass chain.
 - 1. Interior Feeders: Identify each feeder in pullboxes and gutters. Identify by feeder number and size.
 - 2. Exterior Feeders: Identify each feeder in manholes and in interior pullboxes and gutters. Identify by feeder number and size, and also indicate building number and panel designation from which feeder originates.
 - 3. Street and Grounds Lighting Circuits: Identify each circuit in manholes and lighting standard bases. Identify by circuit number and size, and also indicate building number and panel designation from which circuit originates.
- B. Identification Plaque: Where a building or structure is supplied by more than one service, or has any combination of feeders, branch circuits, or services passing through it, install a permanent plaque or directory at each service, feeder and branch circuit disconnect location denoting all other services, feeders, or branch circuits supplying that building or structure or passing through that building or structure and the area served by each.

3.07 WIRE MANAGEMENT

- A. Use wire management products to bundle, route, and support wiring in junction boxes, pullboxes, wireways, gutters, channels, and other locations where wiring is accessible.

3.08 EQUIPMENT GROUNDING CONDUCTOR

- A. Install equipment grounding conductor:
 - 1. Where specified in other Sections or indicated on the drawings.
 - 2. In conjunction with circuits recommended by equipment manufacturers to have equipment grounding conductor.
- B. Equipment grounding conductor is not intended as a current carrying conductor under normal operating circumstances.
- C. Color Coding For Equipment Grounding Conductor:
 - 1. Color Code: Green.
 - 2. "Green" For sizes No. 6 AWG or Smaller:
 - a. Continuous green outer finish, or:
 - b. Continuous green outer finish with one or more yellow stripes, or:
 - c. Bare copper (see exception below).
 - 3. "Green" For Sizes Larger Than No. 6:
 - a. Stripping the insulation or covering from the entire exposed length (see exception below).
 - b. Marking the exposed insulation or covering with green color coding tapes.
 - c. Identify at each end and at every point where the equipment grounding conductor is accessible.
 - 4. Exception For use of Bare Copper: Not allowed for use where NFPA 70 specifically requires equipment grounding conductor to be insulated, or where specified in other Sections or indicated on the drawings to be insulated.

3.09 SPECIAL GROUNDING CONDUCTORS

- A. Technical Power System Grounding (Equipment grounding conductor isolated from the premises grounded conductor except at a single grounded termination point): Install an insulated grounding conductor running with the circuit conductors for isolated receptacles or utilization equipment requiring an isolated ground:
 - 1. Color Code: Green.
 - 2. "Green" For Isolated Grounding Conductor:

- a. Continuous green outer finish, or:
 - b. Continuous green outer finish with one or more yellow stripes, and:
 - c. Different than the "green" used for the equipment grounding conductor run with the circuit (where required).
3. Install label at every point where the conductor is accessible, identifying it as an "Isolated Grounding Conductor".

3.10 ARC PROOFING

- A. Arc proof feeders installed in a common pullbox or manhole as follows:
1. Arc proof new feeders.
 2. Arc proof existing feeders that are spliced to new feeders.
 3. Arc proof each feeder as a unit (except feeders consisting of multiple sets of conductors).
 4. Arc proof feeders consisting of multiple sets of conductors by arc proofing each set of conductors as a unit.
 5. Arc proof feeders with half-lapped layer of 55 mils thick arc proofing tape and random wrapped or laced with glass cloth tape or glass-fiber cord. For arc proofing tape less than 55 mils thick, add layers to equivalent of 55 mils thick arc proofing tape.

3.11 INSULATED CONDUCTOR AND CABLE SCHEDULE - TYPES AND USE

- A. Electric Light and Power Circuits:
1. FEP, THHN, THW, THW-2, THWN, THWN-2, XHH, XHHW, or XHHW-2: Wiring in dry or damp locations (except where special type insulation is required).
 2. THWN, THWN-2, XHHW, XHHW-2, USE, or USE-2: Wiring in wet locations (except where type USE or USE-2 insulated conductors are specifically required, or special type insulation is required).
 3. THHN, THWN or THWN-2: Wiring installed in existing raceway systems (except where special type insulation is required).
 4. THHN, THW-2, THWN-2, XHHW, or XHHW-2: Wiring for electric discharge lighting circuits (fluorescent, HID), except where fixture listing requires wiring rated higher than 90° C.
 5. THWN Marked "Gasoline and Oil Resistant": Wiring to gasoline and fuel oil pumps.
 6. USE, or USE-2.

3.12 CONNECTOR SCHEDULE - TYPES AND USE

- A. Temperature Rating: Use connectors that have a temperature rating, equal to, or greater than the temperature rating of the conductors to which they are connected.

B. Splices:

1. Dry Locations:

- a. For Conductors No. 8 AWG or Smaller: Use spring type pressure connectors, indent type pressure connectors with insulating jackets, or connector blocks (except where special type splices are required).
- b. For Conductors No. 6 AWG or Larger: Use connector blocks or uninsulated indent type pressure connectors. Fill indentions in uninsulated connectors with electrical filler tape and apply insulation tape to insulation equivalent of the conductor, or insulate with heat shrinkable splices or cold shrink splices.
- c. Gutter Taps in Panelboards: For uninsulated type gutter taps fill indentions with electrical filler tape and apply insulation tape to insulation equivalent of the conductor, or insulate with gutter tap cover.

2. Damp Locations: As specified for dry locations, except apply moisture sealing tape over the entire insulated connection (moisture sealing tape not required if heat shrinkable splices or cold shrink splices are used).

3. Wet Locations: Use uninsulated indent type pressure connectors and insulate with resin splice kits, cold shrink splices or heat shrinkable splices. Exception: Splices above ground which are totally enclosed and protected in NEMA 3R, 4, 4X enclosures may be spliced as specified for damp locations.

C. Terminations:

1. For Conductors No. 10 AWG or Smaller: Use terminals for:

- a. Connecting wiring to equipment designed for use with terminals.

2. For Conductors No. 8 AWG or Larger: Use compression or mechanical type lugs for:

- a. Connecting cables to flat bus bars.
- b. Connecting cables to equipment designed for use with lugs.

3. For Conductor Sizes Larger Than Terminal Capacity On Equipment: Reduce the larger conductor to the maximum conductor size that terminal can accommodate (reduced section not longer than one foot). Use compression or mechanical type connectors suitable for reducing connection.

END OF SECTION 260519

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SECTION 260526 - GROUNDING AND BONDING

PART 1 GENERAL

1.01 SUBMITTALS

- A. Product Data: Catalog sheets, specifications and installation instructions.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Ground Clamps (Cable to Pipe): Blackburn/T&B Corp.'s GUV, Framatome Connectors/Burndy Corp.'s GAR, GD, GP, GK, OZ/Gedney Co.'s ABG, CG or approved equal.
- B. Ground Clamps (Cable to Rod): Blackburn/T&B Corp.'s GG, GGH, JAB, JABH, GUV, Dossert Corp.'s GN, GPC, Framatome Connectors/Burndy Corp.'s GP, GX, GRC, OZ/Gedney Co.'s ABG or approved equal.
- C. Ground Lugs: Copper, one or 2 hole style (to suit conditions), long barrel; Anderson/Hubbell's VERSAtile VHCL, Blackburn/T&B Corp.'s Color-Coded CTL, LCN, Framatome Connectors/Burndy's Hylug YA, Electrical Products Div./3M Scotchlok 31036 or 31145 Series, Ideal Industries Inc.'s CCB or CCBL, Thomas & Betts Corp.'s 54930BE or 54850BE Series or approved equal.
- D. Exothermic Type Weld: Erico Inc.'s Cadweld Process, Furseweld/T&B Corp.'s Exothermic Welding System or approved equal.
- E. Compression Connectors: Amp Inc.'s Ampact Copper Grounding System, Burndy Corp.'s Hyground System or approved equal.
- F. Rod Electrodes: Copper clad (minimum .010 jacket) ground rods minimum 5/8 inches diameter by 8'-0" long or approved equal.
- G. Plate Electrodes: Copper plates minimum 0.06 inches thick by 2'-0" square feet of surface area or approved equal.
- H. Grounding Electrode Conductors and Bonding Conductors: Copper conductors, bare or insulated with THW, THW-2, XHHW, XHHW-2, THWN, THWN-2 or THHN insulation, or approved equal.
- I. Hardware: Silicon-bronze bolts, nuts, flat and lock washers etc. as manufactured by Dossert Corp., Framatome Connectors/Burndy Corp., OZ/Gedney Co. or approved equal.

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PART 3 EXECUTION

3.01 INSTALLATION

A. Connections:

1. Make grounding and bonding connections, except buried connections, with silicon-bronze hardware and ground clamps, ground lugs or compression connectors, to suit job conditions.
2. For buried connections use exothermic type weld connectors.

END OF SECTION 260526

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SECTION 260531 - CONDUIT

PART 1 GENERAL

1.01 REFERENCES

- A. NEMA, ANSI, and UL.

1.02 SUBMITTALS

- A. Product Data: Catalog sheets, specifications and installation instructions.

1.03 MAINTENANCE

- A. Spare Parts: Furnish the following items in the manufacturer's original containers labeled with the names of the items and locations where the items would be used. Store them at the site where directed:
 - 1. Touch up coating compound for plastic coated rigid metal conduit (one spray type can and one non-spray can with brush top).

PART 2 PRODUCTS

2.01 RACEWAYS

- A. Rigid Ferrous Metal Conduit: Steel, hot dipped galvanized on the outside and inside UL categorized as Rigid Ferrous Metal Conduit (identified on UL Listing Mark as Rigid Metal Conduit - Steel, or Rigid Steel Conduit), by Allied Tube & Conduit Corp., LTV Copperweld, or Wheatland Tube Co or approved equal.
- B. Liquid-tight Flexible Metal Conduit: UL categorized as liquid-tight flexible metal conduit (identified on UL Listing Mark as Liquid-Tight Flexible Metal Conduit, also specifically marked with temperature and environment application data), by AFC Cable Systems Inc., Anamet Electrical Inc., Electri-Flex Co., or Universal Metal Hose Co or approved equal.
- C. Plastic Coated Rigid Metal Conduit, Fittings, and Accessories: Rigid ferrous metal conduit, fittings and accessories coated with 40 mils thick polyvinylchloride coating; Ocal/T&B Corp.'s Ocal-Blue System, PCD Inc.'s KorKap, KorKap XL, or Robroy Industries' Plastibond or Perma-Cote System or approved equal.

2.02 FITTINGS AND ACCESSORIES

- A. Connectors and Couplings:
 - 1. Couplings (For Rigid Metal Conduit): Standard threaded couplings as furnished by conduit manufacturer.
 - 2. Watertight Conduit Hubs: Cooper/Crouse Hinds' Myers Hubs (stainless steel), OZ/Gedney Co.'s Type CH-T (hot dipped galvanized finish) or approved equal.

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3. Liquid-tight Flexible Metal Conduit Connectors: OZ/Gedney Co.'s 4Q-TG Series (hot-dip/mechanically galvanized), or Thomas & Betts Corp.'s 3322 Series (PVC coated) or approved equal.
- B. Conduit Bodies (Threaded): Malleable iron or cast iron alloy bodies and covers with hot dipped galvanized or other specified corrosion resistant finish; Cooper/Crouse-Hinds' Condulets (Corro-free epoxy powder coat), Thomas & Betts Corp.'s Conduit Bodies (hot dipped galvanized), or OZ/Gedney Co.'s Conduit Bodies (hot dipped galvanized) or approved equal. Stainless steel cover screws, covers gasketed to suit application.
- C. Expansion Fittings: Cooper/Crouse-Hinds XJG (Corro-free epoxy powder coat), OZ Gedney Co.'s AX, EXE (end type, hot dipped galvanized), or Thomas & Betts Corp.'s XJG (hot dipped galvanized) or approved equal.
- D. Deflection Fittings: Ductile iron couplings with hot dipped galvanized finish, neoprene sleeve, and stainless steel bands, Appleton Electric Co.'s CF; or bronze couplings, neoprene sleeve, and stainless steel bands, OZ/Gedney Co.'s Type DX.
- E. Sealing Fittings: Malleable iron body with hot dipped/mechanically galvanized finish, neoprene sleeve, and stainless steel bands, Appleton electric Co.'s CF; or bronze couplings, neoprene sleeve, and stainless steel bands, OZ/Gedney Co.'s Type DX.
 1. Horizontal: Cooper/Crouse-Hinds' EYS with Chico A sealing compound and Chico X filler, OZ/Gedney Co.'s EYD with EYC sealing compound and EYF damming fiber, or Thomas & Betts Corp.'s. EYS w/Chico A sealing compound and Chico X filler or approved equal.
 2. Vertical (with Drain): Cooper/Crouse-Hinds with Chico A sealing compound and Chico X filler, OZ/Gedney Co.'s EY, EYA with EYC sealing compound and EYF damming fiber, or Thomas & Betts Corp.'s. w/Chico A sealing compound and Chico X filler or approved equal.
 3. Other Type Fittings. As required to suit installation requirements, by Cooper/Crouse-Hinds, OZ/Gedney Co., or Thomas & Betts Corp. with hot dipped/mechanically galvanized finish or epoxy powder coat or approved equal.
- F. Service Entrance Caps/Heads: Hot dipped/mechanically galvanized finish; OZ/Gedney Co.'s 17-50G Series or approved equal.
- G. Vertical Conductor Supports: Kellems/Hubbell Inc.'s Conduit Riser Grips (stainless steel or tin coated bronze), or OZ/Gedney Co.'s hot dipped galvanized finish Type CMT or Type W or approved equal.
- H. Conduit Clamps and Back Spacers: Malleable iron, hot dipped/mechanically galvanized finish; Cooper/Crouse-Hinds' 510 and CB1 Series, OZ/Gedney Co.'s 14-G and 141G Series, or Thomas & Betts Corp.'s 1275 and 1350 Series or approved equal.

- I. Drains and Breathers: Stainless steel; Appleton Electric Co.'s ECBD, Cooper/Crouse-Hinds' ECD, OZ/Gedney Co.'s Type DB, or Thomas & Betts Corp.'s Type ECD or approved equal.

PART 3 EXECUTION

3.01 RACEWAY INSTALLATION - GENERAL

- A. Number of Raceways: Do not change number of raceways to less than the number indicated on the drawings.
 - 1. Each raceway shall enclose one circuit unless otherwise indicated on the drawings.
- B. Conduit Size: Not smaller than 1/2 inch electrical trade size. Where type THWN, THWN-2, XHHW, or XHHW-2 conductors are specified for use under Section 260519, the minimum allowable conduit size for new Work shall be based on Type THW conductors.
- C. Conduit Bends: For 1/2 and 3/4 inch conduits, bends may be made with manual benders. For all conduit sizes larger than 3/4 inch, manufactured or field fabricated offsets or bends may be used. Make field fabricated offsets or bends with an approved hydraulic bender.
- D. Conduit Exposed In Indoor Wet Locations: Install entire wiring system including conduit, boxes, and fittings so that there is a 1/4 inch air space between it and the wall or supporting surface.
- E. Conduit in Hazardous Areas: Install Work in hazardous areas in accordance with NFPA 70. The hazardous areas and the degree of hazard for each area are indicated on the drawings.

3.02 RACEWAY SCHEDULE - TYPES & USE

- A. Rigid Ferrous Metal Conduit: Install in all indoor locations unless otherwise specified or indicated on the drawings.
- B. Liquid-tight Flexible Metal Conduit: Install equipment grounding conductor in liquid-tight flexible metal conduit and bond at each box or equipment to which conduit is connected:
 - 1. Use 1 to 3 feet of liquid-tight flexible metal conduit (UL listed and marked for the installation's temperature and environmental conditions) for final conduit connection to:
 - a. Motors with weather-protected or totally enclosed housings.
 - b. Equipment subject to vibration.
 - c. Equipment requiring flexible connection for adjustment or alignment.
- C. Plastic Coated Rigid Metal Conduit: Use at all underground and exposed outdoor locations.

3.03 FITTINGS AND ACCESSORIES SCHEDULE

A. General:

1. Use malleable iron or cast iron alloy fittings and accessories having hot dipped/mechanically galvanized finish or other specified corrosion resistant finish in conjunction with ferrous raceways unless otherwise specified or indicated on the drawings.
2. Use caps or plugs to seal ends of conduits until wiring is installed (to exclude foreign material).
3. Use expansion fittings:
 - a. Where raceways cross expansion joints.
 - b. At intervals not exceeding 75 feet in straight runs (outside installations).
 - c. Between fixed equipment (outside installations).
4. Use deflection fittings where raceways cross expansion joints that move in more than one plane.
5. Use watertight hub on end of each conduit entering cabinets or boxes that are not constructed with integral threaded hubs.
6. Use back spacers behind each conduit clamp to keep raceway off surface to which it is attached and arranged to allow raceway to move due to expansion and contraction (outside installations).
7. Use drains in low points of the system to drain condensation, keeping interior of raceway system free of moisture. Also use breather at high point of the system for outside installations.

B. For Rigid Metal Conduit: Use threaded fittings.

C. For Liquid-tight Flexible Metal Conduit: Use liquid-tight connectors.

D. For Plastic Coated Rigid Metal Conduit: Use conduit manufacturer's PVC coated fittings and accessories.

END OF SECTION 260531

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SECTION 260534 - OUTLET, JUNCTION, AND PULL BOXES

PART 1 GENERAL

1.01 REFERENCES

- A. NEMA, and UL.

1.02 SUBMITTALS

- A. Product Data: Catalog sheets, specifications and installation instructions.
 - 1. For fire rated construction, prove that materials and installation methods proposed for use are in accordance with the listing requirements of the classified construction.

PART 2 PRODUCTS

2.01 GALVANIZED STEEL JUNCTION AND PULL BOXES

- A. Code gauge, galvanized steel screw cover boxes by Delta Metal Products Inc., Hoffman Enclosures Inc., Hubbell Wiegmann, Lee Products Co., or Rittal/Electromate or approved equal.

2.02 THREADED TYPE BOXES:

- A. Outlet Boxes:
 - 1. For Dry, Damp Locations: Zinc electroplate malleable iron or cast iron alloy boxes by Appleton Electric Co., Cooper/Crouse-Hinds Co., OZ/Gedney Co., with zinc electroplate steel covers to suit application or approved equal.
- B. Junction And Pull Boxes:
 - 1. For Dry, Damp Locations: Zinc electroplate cast iron boxes by Appleton Electric Co., Cooper/Crouse-Hinds, OZ/Gedney Co., with zinc electroplate steel or cast iron cover or approved equal.
- C. Conduit Bodies, Threaded (Provided with a Volume Marking):
 - 1. For Dry, Damp Location: Zinc electroplate malleable iron or cast iron alloy bodies with zinc electroplate steel covers; Appleton Electric Co.'s Unilets, Cooper/Crouse-Hinds' Condulets, OZ/Gedney Co.'s Conduit Bodies or approved equal.

2.03 SITE PULLBOXES

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- A. Concrete pullboxes with roadway type cast iron frame and cover. Box to be 30" x 18" in accordance with NYC DOT Drawing No. J3179-B.

2.04 FINISHING COLLAR OR COMBINATION FINISHING COLLAR/OUTLET BOX (SURFACE MOUNTED EQUIPMENT USED WITH EXPOSED RACEWAY):

- A. Finishing Collar: Same finish and peripheral dimensions as the equipment base, including provisions for mounting, slots to fit over raceway and of depth to cover outlet box and extend back to ceiling or wall.
- B. Combination Finishing Collar/Outlet Box: Same finish and peripheral dimensions as the equipment base, gauge or thickness of metal as required by National Electrical Code, including provisions for mounting, and knockouts or threaded bosses for entrance of raceway.

PART 3 EXECUTION

3.01 PREPARATION

- A. Before proceeding with the installation of junction and pull boxes, check the locations with the Commissioner and have same approved.

3.02 INSTALLATION

- A. Mounting Position of Wall Outlets For Wiring Devices: Unless otherwise indicated, install boxes so that the long axis of each wiring device will be vertical.
- B. Height of Wall Outlets: Unless otherwise indicated, locate outlet boxes with their center lines at the following elevations above finished floor:

Lighting Fixtures	6'-0"
Switches	4'-0"
Single & Duplex Receptacles	1'-6"

- C. Supplementary Junction and Pull Boxes: In addition to junction and pull boxes indicated on the drawings and required by NFPA 70, provide supplementary junction and pull boxes as follows:
 - 1. When required to facilitate installation of wiring.
 - 2. At every third 90 degree turn in conjunction with raceway sizes over 1 inch.
 - 3. At intervals not exceeding 100 feet in conjunction with raceway sizes over 1 inch.

3.03 OUTLET, JUNCTION, AND PULL BOX SCHEDULE

- A. Boxes For Exposed Conduit System:

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1. Dry and Damp Locations: Use zinc electroplate or hot dipped galvanized threaded type malleable iron or cast iron alloy outlet, junction, and pullboxes or conduit bodies provided with a volume marking in conjunction with ferrous raceways unless otherwise specified or indicated on the drawings.
 - a. Galvanized steel boxes may be used in conjunction with conduit sizes over 1 inch in non-hazardous dry and damp locations.
 2. Finishing Collar or Combination Finishing Collar/Outlet Box (Surface Mounted Equipment Used With Exposed Raceway):
 - a. Use finishing collar where surface mounted equipment is installed on an exposed raceway outlet box and the equipment base is larger than the outlet box.
 - b. Use combination finishing collar/outlet box where surface mounted equipment is not indicated to be installed on an exposed raceway outlet box, but raceway cannot be run directly into equipment body due to equipment design.
- B. Specific Purpose Outlet Boxes: Use to mount equipment when available and suitable for job conditions. Unless otherwise specified, use threaded type boxes with finish as specified for exposed conduit system.

END OF SECTION 260534

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SECTION 262416 - PANELBOARDS

PART 1 - GENERAL

1.01 SUMMARY

- A. Section includes Circuit breaker panelboard.

1.02 SUBMITTALS

- A. Product Data: For each type of product indicated.

1.03 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. Comply with NEMA PB 1.
- C. Comply with NFPA 70.

PART 2 - PRODUCTS

2.01 GENERAL REQUIREMENTS FOR PANELBOARDS

- A. Enclosures: Surface mounted cabinets.
 - 1. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.
 - 2. Directory Card: Inside panelboard door, mounted in transparent card holder.
- B. Phase, Neutral, and Ground Buses: Copper
- C. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.
- D. Finishes:
 - a. Panels and Trim: 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: Code gauge galvanized steel

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2.02 PANELBOARDS

- A. Manufacturers:
 - 1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 - 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
 - 3. Siemens Energy & Automation, Inc.
 - 4. Square D; a brand of Schneider Electric.
 - 5. Approved equal.
- B. Panelboards: NEMA PB 1.
- C. Mains: lugs only
- D. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.
- E. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Receive, inspect, handle, store and install panelboards and accessories according to NEMA PB 1.1
- B. Install filler plates in unused spaces.
- C. Comply with NECA 1.

3.02 IDENTIFICATION

- A. Identify field-installed conductors, interconnecting wiring, and components.
- B. Create a directory neatly typed or printed to indicate installed circuit loads
- C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification
- D. Device Nameplates: Label each branch circuit device in distribution panelboards with number distinctly engraved

END OF SECTION 262416

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SECTION 262726 - WIRING DEVICES

PART 1 GENERAL

1.01 SUBMITTALS

- A. Product Data: Catalog sheets, specifications and installation instructions.

PART 2 PRODUCTS

2.01 RECEPTACLES

- A. Specification Grade Receptacles:

- 1. Duplex receptacle, NEMA 5-20R (20A, 125 V, 2P, 3W); Bryant's 5362, Crouse-Hinds/AH's 5352/5342, General Electric's GE5352-1, Hubbell's 5352, Leviton's 5352, Pass & Seymour's 5352 or approved equal.

- B. Ground Fault Interrupter Receptacles:

- 1. Duplex receptacle rated 20A (NEMA 5-20R), circuit ampacity 20A; Bryant's GFR53FT, Crouse-Hind/AH's GF5342, General Electric's GF5342, Hubbell's GF 5352, Leviton's 6899, Pass & Seymour's 2091S, Daniel Woodheads 5352GF or approved equal.

2.02 WALL PLATES

- A. Stainless Steel Wall Plates: Type 302 stainless steel with satin finish; Bryant's 93 Series, Crouse-Hinds/AH's 93 Series, General Electric's 93 Series, Hubbell's 93 Series, Leviton's 910-40 Series, or Pass & Seymour's 93 Series or approved equal.

- B. Weatherproof Covers: Crouse-Hinds WLRS, WLRD, Hubbell's 52, 74 Series, or Pass & Seymour's 45 Series or approved equal.

- C. Covers for Threaded Type Boxes: Stamped sheet steel, gasketed device covers as produced by Crouse-Hinds Co., or OZ/Gedney Co or approved equal.

2.03 NAMEPLATES

- A. Phenolic Type: Standard phenolic nameplates with 3/16 inch minimum size lettering engraved thereon.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install wiring devices in outlet boxes.

WIRING DEVICES

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B. Local Switches:

1. Install local switches rated 15A, 120/277 V ac for switches unless otherwise shown on the drawings or specified.
2. Install switches indicated Sa, Sb, Sc, etc, for control of outlets, with corresponding letters on the same circuit.
3. Where more than one switch occurs at same location in a 120 volt system, arrange switches in gangs and cover with one face plate.
4. Install switches in a 277 volt system in separate single boxes if voltage between exposed live metal parts of adjacent switches exceeds 300 volts.
5. Install single and double pole switches so that switch handle is up when switch is in the "On" position.

C. Receptacles:

1. Install Specification Grade receptacles, NEMA 5-15R, 15A, 125 V, 2P, 3W, for duplex receptacles and single receptacles unless otherwise shown on the drawings or specified.
2. Install receptacles with ground pole in the down position.

D. Wall Plates:

1. Install wall plates on all wiring devices in dry locations, with finish to match hardware in each area.
2. Install blank wall plates on outlet boxes which are for future equipment except telephone outlets.

E. Weatherproof Covers: Install weatherproof covers on wiring devices in damp and wet locations.

F. Nameplates: Provide phenolic or embossed aluminum nameplate for each special purpose receptacle indicating phase, ampere and voltage rating of the circuit. Attach nameplate with rivets or tamperproof fasteners to wall plate or to wall above receptacle. Wall plates may be engraved with required data in lieu of separate nameplates.

END OF SECTION 262726

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SECTION 265110 - FLUORESCENT FIXTURES

PART 1 GENERAL

1.01 SUBMITTALS

- A. Product Data: Catalog sheets, specifications and installation instructions, including:
 - 1. Technical information for each fixture that proves that its ballast meets specified requirements. Include data which proves proposed lamp and ballast combinations do not exceed specified total harmonic distortion.
 - 2. Candlepower distribution curves for each type fixture if different from Company or catalog number specified.
- B. Samples: One of each product if requested.
- C. Quality Control Submittals:
 - 1. List of Installations for Electronic Ballasts: If brand names other than those specified are proposed for use, furnish the name, address, and telephone number of at least 3 comparable installations which can prove the proposed products have operated satisfactorily for 1 year. The installations shall present a grand total of at least 5000 ballasts.

1.02 MAINTENANCE

- A. Special Tools:
 - 1. Two tools to remove and install each type and size of fasteners on fixtures equipped with vandal resistant fasteners.

PART 2 PRODUCTS

2.01 COMPONENT DESCRIPTIONS

- A. Ballasts:
 - 1. Electronic Ballasts: Dedicated, rapid start for 31W and 32W, T-8 lamps, high power factor, Class P, UL listed; Advance Transformer Co.'s RIC-132-TP, RIC-2S32-TP, RIC-3S32-TP, VIC-132-TP, VIC-2S32-TP and VIC-3S32-TP, Electronic Ballast Technology, Inc.'s SSBI-(120)(277)-2/32LH, SSBI-(120)(277)-3/32LH, Motorola Lighting Inc.'s M1-RN-T8-1LL, M2-RN-T8-1LL, M3-RN-T8-1LL, M1-RN-T8-1LL (17w), M2-RN-T8-1LL (17w) or Valmont Electric's E232SR120G01 and E232SR277G01 or approved equal.

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- a. Total harmonic distortion not greater than 20 percent. Ballast and lamp combination shall match so that total harmonic distortion remains below specified percentage.
 - b. RFI and EMI in accordance with FCC Regulation CFR47 Part 18.
 - c. Reduced light output ballasts are unacceptable.
 - d. For lamp types for which electronic ballasts are not manufactured, furnish UL listed, high power factor, Class P ballasts to suit lamps and installation conditions; by Advance Transformer Co., Universal Mfg. Corp., or Valmont Electric Inc or approved equal.
- 2. 0 Degrees F Ballast: High power factor, Class P ballasts to suit lamps and installation conditions, UL listed, to start and operate lamps to 0 degrees F; by Advance Transformer Co., Universal Mfg. Corp., or Valmont Electric Inc or approved equal.
 - 3. -20 Degrees F Ballast: UL listed, high power factor, Class P ballasts to suit lamps and installation conditions, to start and operate lamps to -20 degrees F; by Advance Transformer Co., Universal Mfg. Corp., or Valmont Electric Inc or approved equal.
 - 4. Specific Purpose Ballasts: UL listed, thermally protected, high power factor, to suit lamps and installation conditions; by Advance Transformer Co., Universal Mfg. Corp., or Valmont Electric Inc or approved equal.
 - 5. Voltage rating to suit branch circuit voltage.
- B. Lamps: By General Electric Co., GTE/Sylvania, or Philips Lighting Co. Note: Unless otherwise indicated lamp designations in fixture descriptions are GTE/Sylvania lamp ordering abbreviations.

GTE/Sylvania	GE	Philips
F032/41K	F32T8/SP41/RS	F32T8/TL741
FB031/41K	-	-
F8T5/CW	F8T5/CW	F8T5/CW
F017/41K	F17T8/SP41/RS	F17T8/TL741
FC8T9/CW/RS	FC8T9/CW	FC8T9/CW
FC12T9/CW/RS	FC12T9/CW	FC12T9/CW
F5TT/27K	F5BX/SPX27	PL5/27
F7TT/27K	F7BX/SPX27	PL7/27
F9TT/27K	F9BX/SPX27	PL9/27
F13TT/27K	F13BX/SPX27	PL13/27
F18DTT/27K	F18DBX/SPX27	PLC18/27
F26DTT/27K	F26DBX/SPX27	PLC26/27

- C. Labels: Equip each fixture with a label, located conspicuously inside of fixture, which states the type of lamps required for the fixture.

- D. Additional Components: Equip fixtures with the following additional components, as applicable:

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1. End caps for individually mounted fixtures and end of continuous row fixtures.
2. Finishing collar or combination finishing collar/outlet box for surface mounted fixture used with exposed raceway:
 - a. Finishing Collar: Same finish and peripheral dimensions as the fixture base, including provisions for mounting, slots to fit over raceway and of depth to cover outlet box and extend back to ceiling or wall.
 - b. Combination Finishing Collar/Outlet Box: Same finish and peripheral dimensions as the fixture base, gage or thickness of metal as required by National Electrical Code, including provisions for mounting and knockouts or threaded bosses for entrance of raceway.

2.02 WELL HOUSE FLUORESCENT FIXTURES

- A. Wall mounted, enclosed gasketed fixture with guard suitable for wet location. Appleton V-51 JBWF28-2-12G-SL or approved equal.

PART 3 EXECUTION

3.01 INSTALLATION

- A. General: Install fixtures at locations indicated on the drawings.
- B. Finishing Collar or Combination Finishing Collar/Outlet Box (Surface Mounted Fixture Used With Exposed Raceway):
 1. Provide finishing collar where surface mounted fixture is installed on an exposed raceway outlet box and the fixture base is larger than the outlet box.
 2. Provide combination finishing collar/outlet box where surface mounted fixture is not indicated to be installed on an exposed raceway outlet box, but raceway cannot be run directly into fixture body due to fixture design.

END OF SECTION 265110

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SECTION 311000 - SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Turf Removal.
5. Removal of above-ground and below-ground Site Elements; see Contract Drawings.

B. Related Sections:

1. Section 015639 "Temporary Tree and Plant Protection"
2. Section 312000 "Earth Moving"
3. Section 312500 "Erosion and Sedimentation Controls"
4. Section 329200 "Turf and Grasses"
5. Section 329300 "Plants"

1.3 DEFINITIONS

- A. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- B. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.
- C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil and is the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of subsoil and weeds, roots, toxic materials, or other non-soil materials.
- D. Plant-Protection Zone: Area surrounding individual trees or groups of trees within the drip line and specimen plant materials to be protected during construction as indicated on Drawings.
- E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 MATERIAL OWNERSHIP

- A. Except for stripped topsoil and other materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.5 INFORMATIONAL SUBMITTALS

- A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.
 - 1. Use sufficiently detailed photographs or videotape.
 - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.
- B. As-Built Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 QUALITY ASSURANCE

- A. Preinstallation Conference: Conduct conference at Project site.

1.7 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, adjacent portions of the Garden and other occupied or used facilities during site-clearing operations.
 - 1. Do not close or obstruct garden pathways without permission from the Commissioner
 - 2. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from City of New York and authorities having jurisdiction.
 - 3. Provide alternate routes around closed or obstructed traffic ways if required by City of New York or authorities having jurisdiction.
- B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on premises as directed by the Commissioner.
- C. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.
- D. The following practices are prohibited within protection zones:
 - 1. Storage of construction materials, debris, or excavated material.
 - 2. Parking vehicles or equipment.
 - 3. Foot traffic.
 - 4. Erection of sheds or structures.
 - 5. Impoundment of water.

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6. Excavation or other digging unless otherwise indicated.
 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- E. Do not direct vehicle or equipment exhaust towards protection zones.
 - F. Prohibit heat sources, flames and ignition sources within or near protection zones.
 - G. No smoking within construction zone or anywhere on Garden property.
 - H. Soil Stripping, Handling, and Stockpiling: Perform only when the topsoil is dry or slightly moist.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 312000 "Earth Moving."
- B. Satisfactory Topsoil Material: Requirements for satisfactory topsoil material are specified in Section 329200 "Turf and Grasses" and Section 329300 "Plants"

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Protect existing site improvements to remain with acceptable temporary barriers or fencing from damage during construction.
 1. Restore damaged improvements to their original condition, as acceptable to Commissioner.

3.2 TREE AND PLANT PROTECTION

- A. General: Protect trees and plants to remain according to requirements in Section 015639 "Temporary Tree and Plant Protection."
- B. Replace trees, shrubs, and other vegetation indicated to remain that are damaged by construction operations, in a manner approved by Commissioner.

3.3 EXISTING UTILITIES

- A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.
 - 1. Arrange with utility companies to shut off indicated utilities.
- B. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by City of New York or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Commissioner not less than 48 hours in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without Commissioner written permission.

3.4 CLEARING AND GRUBBING

- A. Remove obstructions, shrubs, and other vegetation to permit installation of new construction.
 - 1. Do not remove trees, shrubs, and other vegetation indicated to remain.
 - 2. Grind down stumps and remove roots, obstructions, and debris to a depth of 18 inches below exposed subgrade.
 - 3. Use only hand methods for grubbing within protection zones.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil or topsoil unless further excavation or earthwork is indicated.
 - 1. Place satisfactory soil or topsoil in horizontal layers not exceeding a loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.

3.5 TURF REMOVAL

- A. Remove existing turf in its entirety using mechanical means & methods approved by the Commissioner. Exercise extreme caution within the driplines of existing trees to prevent damage to tree roots. No exposed soil areas will be allowed for more than 48 hours following the removal of turf. In the event that this is not possible the Contractor shall cover areas of turf removal with 4 mil black plastic sheeting to prevent erosion and weed germination. Plastic sheeting shall be properly secured with ballast as deemed appropriate by the Commissioner.

3.6 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.
- B. Remove slabs, paving, curbs, gutters, and aggregate base if encountered; locations as indicated on Contract Drawings.

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1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.

3.7 DISPOSAL OR HANDLING OF SURPLUS AND WASTE MATERIALS

- A. Remove demolished materials, and waste materials including trash and debris, and legally dispose of them off property.
- B. Refer to 312000 "Earth Moving" for existing soil handling.

END OF SECTION 311000

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SECTION 312000 - EARTH MOVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

A. Section Includes:

- 1. Preparing subgrades for walks, pavements, curbs, turf and grasses and plants.
- 2. Base course for concrete walks and pavements.
- 3. Base course for asphalt paving.
- 4. Excavating and placing of soil.
- 5. Excavating and backfilling trenches for utilities and pits for buried utility structures.

B. Related Sections:

- 1. Section 026113 Soil Management Specification – “Handling, Transport, and Disposal of Contaminated Materials”
- 2. Section 311000 "Site Clearing" for grubbing, stripping and stockpiling topsoil, and removal of above- and below-grade improvements and utilities.
- 3. Section 329200 "Turf and Grasses" for finish grading in turf and grass areas, including preparing and placing planting soil for turf areas.
- 4. Section 329300 "Plants" for finish grading in planting areas and tree and shrub pit excavation and planting.
- 5. Section 329600 "Transplanting" for finish grading in planting areas and tree pit excavation and planting.

1.3 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

- 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
- 2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subgrade and hot-mix asphalt or concrete paving.

C. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by the Commissioner. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
 2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
 3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by the Commissioner. Unauthorized excavation, as well as remedial work directed by Commissioner, shall be without additional compensation.
- D. Fill: Soil materials used to raise existing grades.
- E. Rock: Rock material in beds, ledges, unstratified masses, conglomerate deposits, and boulders of rock material that exceed 1 cu. yd. for bulk excavation or 3/4 cu. yd. for footing, trench, and pit excavation that cannot be removed by rock excavating equipment equivalent to the following in size and performance ratings, without systematic drilling, ram hammering, ripping, or blasting, when permitted:
1. Excavation of Footings, Trenches, and Pits: Late-model, track-mounted hydraulic excavator; equipped with a 42-inch- wide, maximum, short-tip-radius rock bucket; rated at not less than 138-hp flywheel power with bucket-curling force of not less than 28,700 lbf and stick-crowd force of not less than 18,400 lbf with extra-long reach boom; measured according to SAE J-1179.
 2. Bulk Excavation: Late-model, track-mounted loader; rated at not less than 230-hp flywheel power and developing a minimum of 47,992-lbf breakout force with a general-purpose bare bucket; measured according to SAE J-732.
- F. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- G. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- H. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as services within buildings.
- I. Structural Soils: An engineered soil mix of aggregate, clay loam and potassium propenoate-propenamamide copolymer hydrogel placed between the subgrade and hot-mix asphalt or concrete paving.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of the following manufactured products required:
1. Geotextiles.
 2. Warning tapes.
- B. Samples for Verification: For the following products, in sizes indicated below:

1. Geotextile: 12 by 12 inches.
2. Warning Tape: 12 inches long; of each color.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified testing agency.
- B. Material Test Reports: For each on-site and borrow soil material proposed for fill and backfill as follows:
 1. Classification according to ASTM D 2487.
 2. Laboratory compaction curve according to ASTM D 698.
- C. Preexcavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by earth moving operations. Submit before earth moving begins.

1.6 QUALITY ASSURANCE

- A. Preexcavation Conference: Conduct conference at Project site.
- B. Testing Laboratory: for testing indicated.

1.7 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, adjacent portions of the Garden and other occupied or used facilities during site-clearing operations.
 1. Do not close or obstruct garden pathways without permission from the Commissioner
 2. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from City of New York and authorities having jurisdiction.
 3. Provide alternate routes around closed or obstructed traffic ways if required by City of New York or authorities having jurisdiction.
- B. Do not commence earth moving operations until temporary erosion- and sedimentation-control measures, specified in Section 312500 "Erosion and Sedimentation Controls," are in place.
- C. Do not commence earth moving operations until plant-protection measures specified in Section 015639 "Temporary Tree and Plant Protection" are in place.
- D. The following practices are prohibited within protection zones:
 1. Storage of construction materials, debris, or excavated material.
 2. Parking vehicles or equipment.
 3. Foot traffic.
 4. Erection of sheds or structures.
 5. Impoundment of water.

- 6. Excavation or other digging unless otherwise indicated.
- 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

- E. Do not direct vehicle or equipment exhaust towards protection zones.

- F. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. General Fill: On-site excavated fill material may be reused for pavement base material in accordance with Section 026113 "Handling, Transport and Disposal of Contaminated Materials". In addition to Section 026113 requirements, reused fill material must be free of organic material, bricks, ashes, wood (fill), dumped fill, cinders, old concrete and rubber/brick foundations, frozen material and free of rock or gravel larger than 4 inches in any dimension.

- B. Unsatisfactory Soils: Soil Classification [Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487], or a combination of these groups.
 - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.

- C. Aggregate Base: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM C33. Coarse aggregate shall be graded within the following limits:

Passing Sieve (Dry Analysis)	Percent by Weight
2"	100
1/4"	30-65
No. 40	5-40
No. 200	0-10

***No recycled material shall be permitted.**

- D. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.

- E. Broken Stone: AASHTO M43 #6 (3/8" to 3/4") clean uniformly graded crushed stone.

- F. Sand: ASTM C 33; fine aggregate.

2.2 STRUCTURAL SOIL

A. Structural Soil Mix shall conform with "CU Soil", as patented by Cornell University, Patent #5,849,069. The product shall be obtained from a licensed producer and proof of such licensing shall be submitted to the Commissioner prior to delivery to the site. Licensed providers include:

1. East Coast Mine, Quogue, NY
2. Tully Environmental Co. d/b/a Evergreen Recycling of Corona, NY
3. Approved equal

B. Structural Soil shall have the following composition:

1. A moisture content of 10% (AASHTO T-99 optimum moisture) between 5.5 and 6.0
2. Gradation:
 - a. The structural soil material shall consist of three components mixed in the following proportions by weight:
 - i. Crushed Stone: 100 parts
 - ii. Clay Loam: 20 parts
 - iii. Hydrogel: 0.03 parts
 - b. Crushed Stone: granite or sandstone (no limestone shall be used) narrowly graded from 3/4-inch to 1-1/2 inches, highly angular with no fines and in the following proportions:

Sieve Size Percent Passing by Weight

1-1/2"	90 to 100%
1"	20 to 55%
3/4"	10%

- c. Submit representative samples of crushed stone to a Testing Laboratory approved by the Commissioner. Following testing, Contractor shall submit a sealed 3 pound bag of crushed stone with a test report from the Testing Laboratory to the Commissioner for approval. The testing report shall include the following tests and recommendations:
 - i. Particle size
 - ii. Losses and rodded unit weight
 - iii. Bulk specific gravity
 - iv. Soundness
 - v. Absorbance
 - vi. Stone dimensions as per ASTM D4791 for crushed stone

C. Clay Loam:

1. Not less than 25% or more than 30% of the clay loam by weight shall be sand. 100% of the sand fraction shall pass the 1/16-inch sieve and 100% shall be retained by the 50 µm sieve.

2. Not less than 20% or more than 40% of the clay loam by weight shall be silt. The particle size distribution for the silt shall be 2 µm to 50 µm.
3. Not less than 25% or more than 40% of the clay loam by weight shall be clay. The particle size distribution for the clay shall include all particles smaller than 2 µm.
4. Not less than 2.75% or more than 5% of the clay loam by weight shall be decayed organic matter (humus) as determined by ASTM F-1647. If organic amendments are needed to obtain the specific organic matter content of the topsoil, the organic matter source shall be peat, composted leaves (leaf mold) or other approved organic amendments. Peat shall be sphagnum peat having ash content not exceeding 15%, as determined by ASTM D-2974. Leaf mold must be substantially free of sticks, stones, roots, plastic, glass, metal and other debris. One-hundred (100%) percent of the leaf mold must pass a ½-inch screen. The leaf mold chemical analysis shall conform to the following:
 - a. The soluble salt content (conductivity) must be less than 150 MHOS per cubic meter for a 1:5 leaf mold to water ratio.
 - b. The pH shall not exceed 6.8.
 - c. The carbon/nitrogen ratio shall fall between 12:1 and 25:1
 - d. A fertility analysis (nitrate, phosphate, potassium, calcium and magnesium levels) must be provided for each batch of leaf mold as well as a trace nutrient content analysis with the following requirements:

TRACE NUTRIENT CONTENT

	ACETATE EXTRACT	HCL EXTRACT
	Iron 0.5-5 ppm	> 5 ppm
	Manganese 0.5-8 ppm	< 15.4 ppm
	Molybdenum 0.5-1 ppm	> 1 ppm
Zinc 0.1-1 ppm	> 4.4 ppm	
	Aluminum 0.1-2 ppm	> 2 ppm
Boron 0.1-1 ppm	> 1.7 ppm	
	Copper 0.1-1 ppm	> 1 ppm

5. Submit representative samples to Testing Laboratory acceptable to the Commissioner. Submit a sealed 5 pound bag of clay loam with a testing report from the Testing Laboratory to the Commissioner for approval. As directed by the Commissioner following review of the testing agency report correct deficiencies in the Clay Loam prior to mixing of the Structural Soil Mix proportions. Testing reports shall include the following tests and recommendations:
 - a. Particle size analysis of the clay loam as determined by ASTM F-1632 shall be performed and compared to the USDA Soil Classification System.
 - b. Percent (%) organic matter shall be determined by Loss on Ignition.
 - c. Saturated hydraulic conductivity shall be tested and reported in mm per hour.
 - d. Total porosity, capillary porosity and aeration porosity shall be measured.
 - e. Chemical analysis shall be undertaken for Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, cation exchange capacity, base saturation, percentages micro-nutrients, soluble salts and acidity (pH).

- f. Soil analysis tests shall show recommendations for soil additives or fertilizers to correct soil deficiencies as necessary.
- D. The Hydrogel/Wetting Agent: potassium propenoate-propenamide copolymer hydrogel such as:
- 1. Gelscape, Amereq Corporation, NY
 - 2. Soilmoist, JRM Chemical Inc., Cleveland, OH
 - 3. Supersorb, Aquatrols Corporation, Cherry Hill, NJ
 - 4. Or approved equal.
- E. Water: comply with ASSHTO T26.
- F. Quality Control for Structural Soil:
- 1. All Structural Soil shall be mixed by a licensed provider using appropriate soil measuring, mixing, and shredding equipment of sufficient capacity and capability to assure proper quality control and consistent mix ratios. Samples of the Structural Soil Mix scheduled to be brought to the site must be approved by the Commissioner prior to delivery.
 - 2. Structural Soil shall not be mixed or transported when rain is expected. Structural Soil components and finished mixtures shall be protected from excess water absorption and erosion at all times.
 - 3. The sufficient quantities of material shall be mixed in advance of the time needed on site to allow adequate time for quality control testing. Structural Soil shall be stored in piles less than 400 cubic yards, and shall be protected from rain and potential erosion with plastic covering.
 - 4. Mixing:
 - a. The hydrogel is added in a small amount to act as a tackifier, preventing separation of the stone and soil during mixing and installation. Mixing shall be done on a paved surface using front-end loaders. The stone shall be spread in a layer, the dry hydrogel is spread evenly on top and the screened moist clay loam is the top layer. The entire pile is turned and mixed until a uniform blend is produced. During the mixing process, the Contractor shall take two (1) cubic foot quality control sample per maximum 400 cubic yards of mixed structural soil. Each sample will be tested by an approved Soil Testing Laboratory. Sealed sample and test results shall be submitted to the Commissioner for approval. The structural soil is then placed and compacted in 6 inch lifts.
 - b. Crushed stone, soil, hydrogel, organic material, water, and any amendments necessary to meet the requirements of this specification shall be mixed prior to placement. Soil and leaf-mold shall be furnished by one supplier each or the same supplier. On-site work and off-site mixing shall be performed only during suitable weather conditions. Soil shall not be worked when frozen, excessively wet, or under otherwise unsatisfactory conditions.

2.3 GEOTEXTILES

- A. Subsurface Drainage Geotextile: Nonwoven needle-punched geotextile, manufactured for subsurface drainage applications, made from polyolefins or polyesters; with elongation greater than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
 - 1. Grab Tensile Strength: 157 lbf; ASTM D 4632.
 - 2. Sewn Seam Strength: 142 lbf; ASTM D 4632.
 - 3. Tear Strength: 56 lbf; ASTM D 4533.
 - 4. Puncture Strength: 56 lbf; ASTM D 4833.
 - 5. Apparent Opening Size: No. 60 sieve, maximum; ASTM D 4751.
 - 6. Permittivity: 0.2 per second, minimum; ASTM D 4491.
 - 7. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.

2.4 ACCESSORIES

- A. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored as follows:
 - 1. Red: Electric.
 - 2. Yellow: Gas, oil, steam, and dangerous materials.
 - 3. Orange: Telephone and other communications.
 - 4. Blue: Water systems.
 - 5. Green: Sewer systems.
- B. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored as follows:
 - 1. Red: Electric.
 - 2. Yellow: Gas, oil, steam, and dangerous materials.
 - 3. Orange: Telephone and other communications.
 - 4. Blue: Water systems.
 - 5. Green: Sewer systems.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, plant material and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.

- B. Protect and maintain erosion and sedimentation controls during earth moving operations.
- C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 DEWATERING

- A. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
 - 1. Reroute surface water runoff away from excavated areas. Do not allow water to accumulate in excavations. Do not use excavated trenches as temporary drainage ditches.

3.3 EXCAVATION, GENERAL

- A. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as earth and rock. Do not excavate rock until it has been classified and cross sectioned by Commissioner. Changes in the Contract Time may be authorized for rock excavation.
 - 1. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock or unauthorized excavation.
 - a. Intermittent drilling; ram hammering; or ripping of material not classified as rock excavation is earth excavation.
 - 2. Rock excavation includes removal and disposal of rock. Remove rock to lines and subgrade elevations indicated to permit installation of permanent construction without exceeding the following dimensions:
 - a. 12 inches outside of concrete forms at footings.
 - b. 6 inches outside of minimum required dimensions of concrete cast against grade.
 - c. 6 inches beneath bottom of concrete slabs-on-grade.
 - d. 6 inches beneath pipe in trenches, and the greater of 24 inches wider than pipe.

3.4 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
2. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended as bearing surfaces.

B. Excavations at Edges of Tree- and Plant-Protection Zones:

1. Excavate by hand to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Cut and protect roots according to requirements in Section 025639 "Temporary Tree and Plant Protection."

3.5 EXCAVATION FOR WALKS AND PAVEMENTS FOR REPLACEMENT

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.
- B. Stockpile excavated soil according to Section 026113 "Soil Management specification – Handling, Transport and Disposal of Contaminated Material", paragraph 3.4

3.6 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.
 1. Clearance: 12 inches each side of pipe or conduit or as indicated.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.
 1. For pipes and conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.
 2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.
 3. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.
 4. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material to allow for bedding course.

D. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Pneumatic Air Spade Excavation shall be permissible in lieu of hand excavation and when deemed appropriate by the Commissioner. Prior to beginning work, the area to be trenched/excavated shall be thoroughly wetted, 24 hours in advance, to minimize dust to the greatest extent possible. Trenching/Excavation shall be accomplished with a pneumatic device. The Contractor shall provide a compressor unit for operating the pneumatic excavator rated at one hundred fifty standard cubic feet per minute (150 scfm) at ninety pounds per square foot gauge (90 psfg). All pneumatic excavation shall be as minimal as possible in width and depth, thereby minimizing the impact on tree roots and other areas where the Commissioner determines that conventional machine excavation may be detrimental. Different nozzles may be used on the air spade to expedite the work or minimize the amount of airborne material. Depth shall be as indicated on Contract Drawings or as directed by the Commissioner. Depths greater than 18" shall require removal of soil by hand shovel, or other appropriate means. Where a pneumatic device is used, care shall be taken to avoid rocks being scattered and inadvertently damaging private or public property. In addition, operators must be equipped with adequate protective clothing and gear, in accordance with manufacturers recommendations. All tree roots exposed by the pneumatic operation must be kept constantly moist with burlap covered with white plastic and checked a minimum of two (2) times a day, once in the morning and once in the afternoon, for a maximum of forty-eight (48) hours, until backfill is complete as directed by the Commissioner. If directed, soaker hoses shall be installed to facilitate properly moist conditions.
3. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.
4. Cut and protect roots according to requirements in Section 025639 "Temporary Tree and Plant Protection."

3.7 SUBGRADE INSPECTION

- A. Notify Commissioner when excavations have reached required subgrade.
- B. If Commissioner determines that unsatisfactory soil is present, continue excavation and replace with compacted fill material as directed.
- C. Proof-roll subgrade below pavements with a vibratory roller weighing not less than 10 tons making a minimum of six (6) passes. Do not proof-roll wet or saturated subgrades.
 1. Completely proof-roll subgrade in one direction. Limit vehicle speed to 3 mph.
 2. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Commissioner, and replace with compacted backfill or fill as directed.

*Provide in place density testing as per ASTM to confirm compaction requires approximately every 200'. Testing will be performed by a qualified independent laboratory.

- D. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
- E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Commissioner, without additional compensation.

3.8 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavations under construction, pipe, or conduit as directed by Commissioner.

3.9 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:
 - 1. Construction below finish grade.
 - 2. Surveying locations of underground utilities for Record Documents.
 - 3. Testing and inspecting underground utilities.
 - 4. Removing concrete formwork.
 - 5. Removing trash and debris.
 - 6. Removing temporary shoring and bracing, and sheeting.
- B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.10 UTILITY TRENCH BACKFILL

- A. Place backfill on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- C. Backfill voids with satisfactory soil while removing shoring and bracing.
- D. Place and compact initial backfill of satisfactory soil, free of particles larger than 1 inch in any dimension, to a height of 12 inches over the pipe or conduit.
 - 1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
- E. Place and compact final backfill of satisfactory soil to final subgrade elevation.
- F. Install warning tape directly above utilities, 12 inches below finished grade, except 6 inches below subgrade under pavements and slabs.

3.11 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
 - 1. Under grass and planted areas, use on-site soil & clean topsoil material.
 - 2. Under walks and pavements, use on-site soil material.
 - 3. Under steps and ramps, use on-site fill.
- C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.12 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
 - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.
 - 2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.13 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 1557:
 - 1. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 95 percent.
 - 2. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
 - 3. For utility trenches, compact each layer of initial and final backfill soil material at 85 percent in landscape areas and 95 percent under pavements.

3.14 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between adjacent existing grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 - 1. Turf or Unpaved Areas: Plus or minus 3/4 inch in 10' feet
 - 2. Walks: Plus or minus 1/2 inch in 10' feet

3.15 AGGREGATE BASE UNDER PAVEMENTS AND WALKS

- A. Place base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place base course under pavements and walks as follows:
 - 1. Place base course material under hot-mix asphalt pavement.
 - 2. Place base course 6 inches or less in compacted thickness in a single layer.
 - 3. Place base course That exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
 - 4. Compact base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

3.16 STRUCTURAL SOIL PLACEMENT

- A. The soil mix shall not be installed until analyzed and approved by the Commissioner. When placing structural soil material, it must be free of clods and must be protected from drying out. The mixture must not be over mixed causing the material to become pelletized.
- B. Properly place the geotextile fabric without holes or tears so it overlaps adjacent pieces by a minimum of one foot.
- C. Prior to placing pavement over structural soil, the Commissioner shall check the consistency of the placed Structural Soil against the approved sample supplied by the Contractor. In the event that the material supplied varies significantly from the approved sample, the Commissioner may request the Contractor test the installed structural soil. Any mix that varies significantly from the approved testing results, as determined by the Commissioner, shall be removed and new Structural Soil shall be installed that meets the specifications. When the Commissioner determines density tests are necessary and as required below, the Contractor shall provide any assistance required facilitate such tests. Such assistance shall include, but will not be limited to, excavation and backfill of test holes. This work shall be considered to be incidental. Where

placed under pavers, sidewalks, walkways, structural soil mix shall be compacted to a minimum 95% Standard Proctor Maximum Density.

3.17 FIELD QUALITY CONTROL

- A. Special Inspections: The City of New York will engage a qualified special inspector to perform the following special inspections:
 - 1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
 - 2. Determine that fill material and maximum lift thickness comply with requirements.
 - 3. Determine, at the required frequency, that in-place density of compacted fill complies with requirements.
- B. Testing Agency: The City of New York will engage a qualified geotechnical engineering testing agency to perform tests and inspections.
- C. Testing agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
 - 1. Paved Areas: At subgrade and at each compacted fill and backfill layer, at least one test for approximately every 200 linear foot of pathway.
- D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.18 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
 - 1. Scarify or remove and replace soil material to depth as directed by Commissioner; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
 - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

END OF SECTION 312000

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SECTION 312500 - EROSION AND SEDIMENTATION CONTROLS

PART 1 – GENERAL

1.1 SUMMARY

- A. General: Provide erosion and sediment controls in accordance with the requirements of the Contract Documents.
- B. Related Work Specified Elsewhere
 - 1. Section 312000 “Earth Moving”
 - 2. Section 311000 “Site Clearing”
 - 3. NYSDEC Standards and Specifications for Erosion and Sediment Control, Latest Revision
 - 4. United States Environmental Protection Agency (EPA), 832-R-92-005, “Storm Water Management for Construction Activities”, latest revision.
 - 5. The Contract Documents apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other Documents, such as pertinent Local, State and Federal laws.

1.2 ENVIRONMENTAL REQUIREMENTS

- A. Protect adjacent properties and water resources from erosion and sediment damage throughout construction in accordance with NYSDEC and New York City Department of Environmental Protection. (NYCDEP)
- B. Discharge from dewatering operations shall not be directed to public sewers without a Contractor obtained dewatering permit from the NYCDEP.

1.3 SUBMITTALS

- A. Materials sourcing and reporting - Submit a materials report, including the names of suppliers
- B. Materials shall be provided from the same source throughout the Work. Change of source requires approval from the City of New York.
- C. Report all materials, seed mixtures (if applicable), and hydroseed mixtures (if applicable) with rates of application and dates.

PART 2 - PRODUCTS

2.1 MATERIALS

Construction of Garden-Wide Pedestrian Pathway System

43-50 Main Street, Flushing NY 11355

FMS Project ID # PV272-PATH

- A. Filter Stone: AASHTO No. 57 crushed stone
- B. Stabilized Construction Access and Haul Road:
 - 1. Stone aggregate: 1-inch to 4-inch clean stone or reclaimed or recycled concrete
 - 2. Geotextile: woven or non-woven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be inert to commonly encountered chemicals, hydro-carbons, mildew, rot resistant, and conform to the fabric properties shown:
 - a.) Light duty roads: Area sites that have been graded to subgrade and where most travel would be single axle vehicles and an occasional multi-axle truck. Acceptable materials are Trivera Spunbound 1115, Mirafi 100X, Typar 3401, or approved equivalent.
 - b.) Heavy duty roads: Area sites with only rough grading, and where most travel would be multi-axle vehicles. Acceptable materials are Trevira Spunbound 1135, Mirafi 600X or approved equivalent.

<u>PROPERTY</u>	<u>UNIT</u>	<u>TEST METHOD</u>	<u>Light duty* Haul Roads rough graded</u>	<u>Heavy duty** haul roads rough graded</u>
Grab Tensile Strength	lbs.	ASTM D 1682	200	220
Elongation at Failure	%	ASTM D 1682	50	60
Puncture Strength	lbs.	ASTM D 751	40	125
Mullen Burst Strength	PSI	ASTM D 3786	190	430
Equivalent Opening Size		US std. sieve CW-02215	40-80	40-80
Aggregate Depth	(inches)	-	6	10

Table B: Geotextile Properties

- C. Temporary Seeding: All types of grass seed shall be fresh, recleaned seed of the latest crop mixed in the following proportions by weight and meeting the following standards of pure live seed content. The tolerance for PLS (purity x germination) shall be those listed.

The seed listed below is available from Ernst Conservation Seeds, Meadville, PA or approved equal. Check seed lots on all species to exclude crown vetch or other unspecified species.

All Seed shall be delivered in sealed standard size bags of the vendor, showing weight, analysis and name of vendor. It shall be stored as directed by the Commissioner in such a manner that its effectiveness will not be impaired. The Commissioner reserves the right to reject, on or after delivery, any material which does not, in their opinion, meet these specifications.

Mycorrhizal Fungi Inoculant: Powder MycoApply Micronized Endo as manufactured by Mycorrhizal Applications, Inc., Oregon or approved equal, shall be mixed with the Seeds

at a ratio of ten (10) pounds of Micronized Endo per quantity of seed for one (1) acre. The Micronized Endo and Seed Mix shall be mixed on site in a CLEAN portable cement mixer or similar type mixer so that the powder evenly covers all of the seed.

SEED		Time of Year	Minimum Seeding Temperature	Rate per acre
<i>Secale cereale</i>	<i>cereal rye</i>	Fall: Sept. – Nov. Spring: March, April	38- 41° Fahrenheit	50 lbs.
<i>Avena sativa</i>	common oats	Fall: September, October Spring: March, April	38- 41° Fahrenheit	128 lbs.
<i>Lolium multiflorum</i>	annual ryegrass	Fall: August – October Spring: March, April, May	38- 41° Fahrenheit	50 lbs.
<i>Fagopyrum esculentum</i>	buckwheat	Summer: June 15 – July 5	-----	50 lbs.

1. SECALE CEREALE – CEREAL RYE

The time of seeding shall be as follows:

Seed shall be sown in the Fall during September thru November or in the Spring during March and April or at such other times as are approved by the Commissioner. All seeding is to be done in moderately dry to moist (not wet) soil and at a time when the wind does not exceed a velocity of five (5) miles per hour.

The temperature of seeding shall be as follows:

The minimal germination temperature 3-5 degrees Celcius (38- 41 degrees Fahrenheit)

The optimum temperature is 16 to 22 degrees Celsius (60 to 72 degrees Fahrenheit).

The rate of seeding shall be as follows:

Temporary Cover Crop – fifty (50 lbs.) pounds per acre

Secale Cereale shall be combined with one of more of the following (depending on season):

2. AVENA SATIVA – COMMON OATS

The time of seeding shall be as follows:

Seed shall be sown in the Fall during September and October or in the Spring during March and April or at such other times as are approved by the Commissioner. All seeding is to be done in moderately dry to moist (not wet) soil and at a time when the wind does not exceed a velocity of five (5) miles per hour.

The temperature of seeding shall be as follows:

The minimal germination temperature is between 3 to 5 degrees Celsius (38 to 41 degrees Fahrenheit). The optimum temperature is 16 to 22 degrees Celsius (60 to 72 degrees Fahrenheit).

The rate of seeding shall be as follows:

Temporary Cover Crop – one hundred twenty eight (128 lbs.) pounds per acre.

Avena Sativa shall be combined with one of more of the following (depending on season):

3. LOLIUM MULTIFLORUM – ANNUAL RYEGRASS

Do Not Substitute Perennial Rye

The time of seeding shall be as follows:

Annual Ryegrass shall be sown in the Fall during August, September and October or in the Spring during March, April, and May or at such other times as are approved by the Commissioner. All seeding is to be done in moderately dry to moist (not wet) soil and at a time when the wind does not exceed a velocity of five (5) miles per hour.

The temperature of seeding shall be as follows:

The minimal germination temperature is

The rate of seeding shall be as follows:

Temporary Cover Crop – fifty (50 lbs.) pounds per acre

4. FAGOPYRUM ESCULENTUM – BUCKWHEAT

The time of seeding shall be as follows:

Buckwheat shall be sown in the Summer between June 15 and July 5 or at such other times as are approved by the Commissioner. All seeding is to be done in moderately dry to moist (not wet) soil and at a time when the wind does not exceed a velocity of five (5) miles an hour.

The rate of seeding shall be as follows:

Temporary Cover crop – fifty (50 lbs) pounds per acre

- D. Temporary Mulch: Loose straw, netting, wood cellulose or seed.
- E. Straw bales: Free of weed seed
- F. Bale Stakes:
 - 1. Minimum of 4 feet length.
 - 2. Two No. 4 steel reinforcing bars, or
 - 3. Two steel pickets, or,
 - 4. Two 2x2 inch hardwood stakes driven 18 inches to 24 inches into the ground.
- G. Siltation Fence: Filter fabric siltation fencing shall be a woven filter fabric having a permittivity of not less than 0.15 sec^{-1} , a water flow rate of a minimum 12 gallons per minute per square foot, and a grab tensile strength of a minimum of 100 lbs. The material shall have a high sediment filtration capacity, high slurry flow and minimum clogging characteristics.

PART 3 - EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Review site conditions and Contract Drawings prior to the commencement of earth moving activities/excavation.
- B. Notify the Commissioner prior to the commencement of Work. Any proposed deviations from the specifications must be submitted to the Commissioner in writing 72 hours prior to commencing work.
- C. By beginning Work, the site conditions are accepted and corrections to encountered unsatisfactory conditions will occur at no additional cost to the City of New York.
- D. All erosion and sediment controls shall be installed prior to land disturbing activities or as necessary to control erosion from land disturbing activities. Comply with all applicable standards for Soil Erosion and Sediment Control in New York State.

3.2 STABILIZED CONSTRUCTION ACCESS AND HAUL ROAD- INSTALLATION AND MAINTANANCE

- A. Install stabilized construction entrances at any point where traffic will be entering or leaving a construction site to or from a public-right-of-way, street, alley, sidewalk, or parking area.
- B. Stabilized construction entrance and haul road stone thickness shall be a minimum of 6 inches.
- C. The stabilized construction access shall be twelve feet minimum but not less than the full width of points of where ingress or egress occurs.
- D. The length of the stabilized construction access shall be 50-feet minimum.
- E. Geotextile shall be placed over the entire area to be covered with aggregate.

- F. Piping of surface water under entrance shall be provided as required. If piping is impossible, a mountable berm with 5:1 slopes will be permitted.
- G. The entrance shall be maintained in a condition which will prevent tracking of sediment onto public-right-of-way or streets. This may require periodic top dressing with additional aggregate. All sediment spilled, dropped, or washed onto public right-of-way must be removed immediately.
- H. When necessary, wheels must be cleaned to remove sediment prior to entrance onto public right-of-way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment trapping device. All sediment shall be prevented from entering storm drains, ditches and watercourses.
- I. Haul Road shall remain beyond construction completion. Supplement stone as required prior to turn-over.

3.3 EROSION CONTROL IMPLEMENTATION

- A. The City of New York may direct limiting the surface area of erodible earth material exposed by clearing and grubbing, excavation, borrow and embankment operations.
- B. Erosion control features shall be maintained until all disturbed ground is covered with permanent vegetation or structures and the permanent drainage system is fully installed and operational.
- C. All controls shall be checked daily and after storm events to ensure they are in proper working order.
- D. Replace at no extra payment any control device that is not functioning properly as directed by Commissioner or authorized regulatory personnel.
- E. Implement dust control measures during construction. Minimize dust clouds by watering down construction area or other NYSDEC approved methods as required.
- F. All construction vehicles hauling materials either into or out of the construction area shall have a secured tarp over materials to prevent sediment pollution of public roadways
- G. Fill/soil stockpiles and if construction activities are discontinued in areas of soil disturbance over an acre before final grading is complete, temporary grading shall be seeded and mulched, as ordered by the commissioner. The areas shall be seeded with an appropriate perennial grass seed mix and shall be mulched with hay or straw within 5 days of the time it was temporarily discontinued. Mulch shall be maintained until a suitable vegetative cover is established.
- H. Design of erosion and sediment controls specific to the site shall be in accordance with EPA standards, NYCDEC standards, or NYC building code, whichever is more stringent.

3.4 REMOVALS

- A. Erosion and sediment controls shall not be removed until the site has been adequately stabilized, or as otherwise directed by the City of New York.
- B. Stabilization shall be defined as a uniform, 70% vegetative cover for landscaped areas and stone subbase in pavement and slab areas.

3.4 TEMPORARY SEEDING

- A. Installation: temporary seeding shall be sown in the spring during the months of March, April, or May, in midsummer, or in August, September, October, or November or as directed by the Commissioner.

Prior to seeding, the area to be seeded shall be disced to loosen top four inches (4") of soil. The disced area shall be fine tilled to open the soil and render it free of rocks, roots, topgrowth, or debris over two inches (2") in any direction. The chain method or another suitable and pre-approved method of cultivation shall be employed to loosen, rough grade, and prepare the seedbed. All areas shall then be compacted using a two hundred pound (200lb) roller.

Grass seed shall be mixed as per the above schedule. All seeding shall be performed in moderately dry to moist soil conditions at a time when the wind velocity does not exceed five miles per hour (5 mph).

- B. Maintenance: temporary seeding (cover crops):
 - if planted in Spring, plowed under in the following Spring.
 - If planted in Fall, plowed under the following Summer.

The Contractor shall perform all work required to achieve rapidly established growth. The Contractor may be directed to reseed any areas which, in the opinion the Commissioner, are unacceptable. The Contractor shall adequately maintain the erosion control cover, including watering as necessary. If the growth is inadequate for erosion control, the Contractor shall overseed using half the rate of seed originally applied. If the grass seed growth is over sixty percent (60%) damaged, reseed following the originally specified rate.

3.5 PERFORMANCE

- A. Should any of the temporary erosion and sedimentation control measures employed fail to produce results that comply with the requirements of Local, State, or Federal laws or specifications immediately take the necessary steps to correct the deficiency.

END OF SECTION 312500

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SECTION 321216 - ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

A. Section Includes:

- 1. Milling asphalt pavement
- 2. Hot-mix asphalt paving.
- 3. Hot-mix asphalt paving with exposed aggregate.
- 4. Wood edging.

B. Related Requirements:

- 1. Section 312000 "Earth Moving" for subgrade preparation, fill material, unbound-aggregate subbase and base courses.
- 2. Section 321400 "Unit Paving" for bituminous setting bed for pavers.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

- 1. Review methods and procedures related to hot-mix asphalt paving including, but not limited to, the following:
 - a. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
 - b. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

- 1. Include technical data and tested physical and performance properties.
- 2. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.
- 3. Job-Mix Designs: For each job mix proposed for the Work.

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B. Samples for Verification: For the following product, in manufacturer's standard sizes unless otherwise indicated:

1. Wood Edging and Stakes: 2'-0" long
2. Aggregate for exposed aggregate paving: 1 pound

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer and testing agency.
- B. Material Certificates: For each paving material. Include statement that mixes containing recycled materials will perform equal to mixes produced from all new materials.
- C. Material Test Reports: For each paving material, by a qualified testing agency.
- D. Field quality-control reports.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer whose work has resulted in specialty asphalt installations.
 1. Experience: Three years' experience in asphalt installation.
 2. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
- B. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by authorities having jurisdiction.
- C. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated.
- D. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of New York City DOT for asphalt paving work.
- E. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for installation.
 1. Include 5'-0" x 5'-0" section of asphalt pavement with exposed aggregate complying with requirements.

1.7 FIELD CONDITIONS

- A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:
 1. Prime Coat: Minimum surface temperature of 60 deg F.
 2. Asphalt Emulsion Binder: Minimum surface temperature of 60 deg F.
 3. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.

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4. Asphalt Surface Course: Minimum surface temperature of 50 deg F at time of placement.

PART 2 - PRODUCTS

2.1 AGGREGATES

- A. General: Use materials and gradations that have performed satisfactorily in previous installations.
- B. Coarse Aggregate: ASTM D 692/D 692M, sound; angular crushed stone, crushed gravel, or cured, crushed blast-furnace slag.
- C. Fine Aggregate: ASTM D 1073 or AASHTO M 29, sharp-edged natural sand or sand prepared from stone, gravel, cured blast-furnace slag, or combinations thereof.
 1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.
- D. Mineral Filler: ASTM D 242/D 242M or AASHTO M 17, rock or slag dust, hydraulic cement, or other inert material.
- E. Surface Aggregate: uniformly sized crushed bluestone graded such that one hundred percent (100%) will pass a one-half inch (1/2") square opening sieve and one hundred percent (100%) by weight shall be retained on a one-quarter inch (1/4") sieve. The aggregate shall be roughly cubical in shape, flat or elongated aggregate will not be accepted. The aggregate shall be washed free of surface dust, film, clay, and silt.

2.2 ASPHALT MATERIALS

- A. Asphalt Binder: AASHTO M 320, PG 64-22.
- B. Asphalt Cement: ASTM D 3381/D 3381M for viscosity-graded material.
- C. Cutback Prime Coat: ASTM D 2027, medium-curing cutback asphalt, MC-30 or MC-70.
- D. Asphalt Emulsified Binder: emulsified asphalt grade CRS-2, meeting requirements of ASTM D2397
- E. Water: Potable.

2.3 AUXILIARY MATERIALS

- A. Recycled Materials for Hot-Mix Asphalt Mixes: Reclaimed asphalt pavement; reclaimed, unbound-aggregate base material; from sources and gradations that have performed satisfactorily in previous installations, equal to performance of required hot-mix asphalt paving produced from all new materials.
- B. Sand: ASTM D 1073 or AASHTO M 29, Grade No. 2 or No. 3.

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- C. Joint Sealant: ASTM D 6690 or AASHTO M 324, Type II or III, hot-applied, single-component, polymer-modified bituminous sealant.
- D. Wood Edging: Of sizes shown on Drawings, and wood stakes as follows:
 - 1. Species: Southern pine with specified wood pressure-preservative treatment.
 - 2. Stakes: Same species as edging, 2-by-3-inch nominal by 24 inches long, with galvanized nails for anchoring edging.

2.4 MIXES

- A. Recycled Content of Hot-Mix Asphalt: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 10 percent or more than 50 percent by weight.
 - 1. Surface Course Limit: Recycled content no more than 10 percent by weight.
- B. Hot-Mix Asphalt: Dense-graded, hot-laid, hot-mix asphalt plant mixes ; designed according to procedures defined by NYC DOT; and complying with the following requirements:
 - 1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.
 - 2. Base Course: Type 3F.
 - 3. Surface Course: Type 7 or 7F.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that subgrade is dry and in suitable condition to begin paving.
- B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
 - 1. Completely proof-roll subgrade in one direction. Limit vehicle speed to 3 mph.
 - 2. Proof-roll subgrade below pavements with a vibratory roller weighing not less than 10 tons making a minimum of six (6) passes.
 - 3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Commissioner, and replace with compacted fill as directed.
- C. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2 COLD MILLING

- A. Clean existing pavement surface of loose and deleterious material immediately before cold milling. Remove existing asphalt pavement by cold milling to grades and cross sections indicated.
 - 1. Mill to a depth of 1-1/2 inches.

2. Mill to a uniform finished surface free of excessive gouges, grooves, and ridges.
3. Control rate of milling to prevent tearing of existing asphalt course.
4. Repair or replace curbs, manholes, and other construction damaged during cold milling.
5. Excavate and trim unbound-aggregate base course, if encountered, and keep material separate from milled hot-mix asphalt.
6. Patch surface depressions deeper than 1 inch after milling, before surface course is laid.
7. Keep milled pavement surface free of loose material and dust.
8. Do not allow milled materials to accumulate on-site.

3.3 EDGING INSTALLATION

- A. Wood Edging: Install edging where indicated. Mitre cut joints and connections at a 45 degree angle. Fasten each cut joint or connection with two galvanized nails. Anchor with wood stakes spaced according to the drawings. Use two galvanized nails per stake to fasten edging, of length as needed to penetrate both edging and stake and provide 1/2-inch clinch at point. Pre-drill stakes if needed to avoid splitting. Replace stakes that crack or split during installation process.

3.4 SURFACE PREPARATION

- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.
- B. Cutback Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.15 to 0.50 gal./sq. yd.. Apply enough material to penetrate and seal, but not flood, surface. Allow prime coat to cure.
 1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
 2. Protect primed substrate from damage until ready to receive paving.
- C. Asphalt Emulsified Binder: Apply uniformly to surfaces of existing pavement at milled locations at a rate of 0.05 to 0.15 gal./sq. yd..
 1. Allow emulsified binder to cure undisturbed before applying hot-mix asphalt paving.
 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.5 PLACING HOT-MIX ASPHALT

- A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
 1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
 2. Place hot-mix asphalt surface course in single lift.
 3. Spread mix at a minimum temperature of 250 deg F.

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4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
 5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.
- B. Place paving in consecutive strips not less than 15 feet wide unless infill edge strips of a lesser width are required.
1. Complete a section of asphalt base course before placing asphalt surface course.
- C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.6 JOINTS

- A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
1. Clean contact surfaces and apply tack coat to joints.
 2. Offset transverse joints, in successive courses, a minimum of 24 inches.
 3. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints using either "bulkhead" or "papered" method according to AIMS-22, for both "Ending a Lane" and "Resumption of Paving Operations."
 4. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
 5. Compact asphalt at joints to a density within 2 percent of specified course density.

3.7 COMPACTION

- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
1. Complete compaction before mix temperature cools to 185 deg F.
- B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.
- C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
1. Average Density: 96 percent of reference laboratory density according to ASTM D 6927 or AASHTO T 245, but not less than 94 percent or greater than 100 percent.

- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly. Where pavement abuts wood edging make sure surface is compacted and finished without dislodging the edging maintain alignment of the pathway.
- F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.
- G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.8 INSTALLATION TOLERANCES

- A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
 - 1. Base Course: Plus or minus 1/2 inch.
 - 2. Surface Course: Plus 1/4 inch, no minus.
- B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:
 - 1. Base Course: 1/4 inch.
 - 2. Surface Course: 1/8 inch.
 - 3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.
 - 4. Cross-Pitched Surfaces: Test with string level from high to low side of pathway. Maximum allowable variance from template is 1/4 inch.

In no cases shall pavement surfaces create puddling or ponding. Any depression greater than 3/16" shall be corrected by removing and replacing the top course surface.

3.9 EXPOSED AGGREGATE SURFACE TREATMENT

- A. Asphalt emulsion binder:
 - 1. Apply emulsified asphalt binder to completed asphalt pavement where indicated on Contract Drawings, when the surface is dry or slightly damp. Unless otherwise permitted by the Commissioner, asphalt binder shall be applied only when the temperature of the surface to be treated is 70 degrees F or higher.

2. Emulsified asphalt binder shall be applied using a truck mounted pressure distributor at the rate of 0.30 to 0.45 gallons per square yard. If required by the Commissioner, a strip of building paper, at least 3 feet in width, and with a length equal to that of the spray bar plus one foot, shall be used at the beginning of each spread. If the cut-off is not positive, the use of the paper may be required at the end of each spread. The paper shall be removed and disposed of in a satisfactory manner. The distributor shall be moving forward at proper application speed at the time the spray bar is opened. Any skipped areas or deficiencies shall be corrected. Junctions of spreads shall be carefully made to assure a smooth surface.
3. The length of spread of emulsified asphalt binder shall not be in excess of that which trucks loaded with cover aggregate material can immediately cover or which can be satisfactorily compacted.
4. The spread of emulsified asphalt binder shall not be more than 6" wider than the width covered by the cover aggregate material from the spreading device. Under no circumstances shall operations proceed in such a manner that bituminous material will be allowed to chill, set-up, dry or otherwise impair retention of the cover aggregate. The distributor, when not spreading, shall be parked so that the spray bar or mechanism will not drip bituminous material on adjacent surfaces.

B. Surface Aggregate:

1. Application of Surface Aggregate shall be immediately following the application of the emulsified asphalt binder, cover aggregate shall be spread in the range of 25 to 30 pounds per square yard. The spreading of aggregate shall be by the use of approved truck mounted or self propelled mechanical spreaders. Spreading shall be accomplished in such a manner that the tires of the trucks or aggregate spreader at no time contact the uncovered and newly applied emulsified asphalt binder.
2. Immediately after the aggregate is spread, any deficient areas shall be covered by additional material. If the application of the cover aggregate by the spreader is not uniform, the Commissioner may order the Contractor to use a drag broom before rolling.
3. Immediately after spreading, the cover aggregate shall be compacted by the use of pneumatic tired 3/3 rollers. Rolling shall proceed in a longitudinal direction, beginning at the outer edges of the treatment and working toward the center. Each trip shall overlap the previous trip by one-half (1/2) the width of the front wheels of the roller. The first rolling of the cover aggregate shall be completed within fifteen (15) minutes after it has been spread. Rolling shall continue only until a smooth, thoroughly compacted surface is obtained, with a minimum of three complete passes over all surfaces.
4. Any free bituminous material on the surface caused by a deficient amount of cover aggregate shall be covered in such a manner so as not to displace imbedded material. Excess material shall be swept from the surface using a power broom with light pressure after the work is completed. Traffic shall be kept off the pavement for at least twenty-four (24) hours.

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3.10 FIELD QUALITY CONTROL

- A. Testing Agency: The Commissioner shall engage a qualified testing agency to perform tests and inspections.
- B. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.
- C. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.
- D. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to ASTM D 979 or AASHTO T 168.
 - 1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
 - 2. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.
 - a. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.
- E. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

END OF SECTION 321216

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SECTION 321313 - CONCRETE PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

A. Section Includes:

- 1. Walks.
- 2. Unit paving base under benches.

B. Related Sections:

- 1. Section 033000 "Cast-in-Place Concrete" for general building applications of concrete.
- 2. Section 321373 "Concrete Paving Joint Sealants" for joint sealants in expansion and contraction joints within concrete paving and in joints between concrete paving and asphalt paving or adjacent construction.

1.3 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash and other pozzolans, and ground granulated blast-furnace slag.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.

B. Other Action Submittals:

- 1. Design Mixtures: For each concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified ready-mix concrete manufacturer and testing agency.

B. Material Certificates: For the following, from manufacturer:

- 1. Cementitious materials.

2. Steel reinforcement and reinforcement accessories.
3. Admixtures.
4. Curing compounds.
5. Bonding agent or epoxy adhesive.
6. Joint fillers.

C. Material Test Reports: For each of the following:

1. Aggregates. Include service-record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.

D. Field quality-control reports.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified Installer whose work has resulted in successful concrete paving installations of a similar scope of work.

1. Experience: Five years' experience in concrete pavement installation.
2. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.

B. Ready-Mix-Concrete 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" (Quality Control Manual - Section 3, "Plant Certification Checklist").

C. Testing Agency Qualifications: Qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

D. Concrete Testing Service: Engage a qualified testing agency to perform material evaluation tests and to design concrete mixtures.

E. ACI Publications: Comply with ACI 301 unless otherwise indicated.

F. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockups of full-thickness sections of concrete paving to demonstrate typical joints; surface finish, texture, and color; curing; and standard of workmanship.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Commissioner specifically approves such deviations in writing.

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3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

G. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to concrete paving, including but not limited to, the following:
 - a. Concrete mixture design.
 - b. Quality control of concrete materials and concrete paving construction practices.
2. Require representatives of each entity directly concerned with concrete paving to attend, including the following:
 - a. Contractor's superintendent.
 - b. Concrete paving subcontractor.

1.7 PROJECT CONDITIONS

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

PART 2 - PRODUCTS

2.1 FORMS

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.
 1. Use flexible or uniformly curved forms for curves with a radius of 100 feet or less. Do not use notched and bent forms.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

2.2 FIBER REINFORCEMENT

- A. Synthetic Macro Fiber: Monofilament, self fibrilling, polypropylene/polyethylene fibers engineered and designed for use in concrete paving, complying with ASTM C 1116/C 1116M.
 1. Basis-of-Design: Subject to compliance with requirements, provide the product indicated or an equivalent product:
 - a. Model: "Tuf-Strand SF "
 - b. Manufacturer: Euclid Chemical Company (The), an RPM company.
 - c. Specific Gravity: .92
 - d. Alkali, Acid, and Mildew Resistance: Excellent.

- e. Fiber Length: 2" inches.
- f. Flash Point, ASTM D1929: 625 ksi (4.3 GPa)
- g. Tensile Strength, ASTM D 2256: 73 to 80 ksi (550 to 600 MPa)
- h. Absorption: Negligible
- i. Color: White
- j. Dosage Rate: 5 lbs/cy of concrete
- k. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, the following:
 - 1) Euclid Chemical Company (The), an RPM company
 - 2) Grace, W. R. & Co.
 - 3) FORTA Corporation.
 - 4) Approved Equal

2.3 CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of same type, brand, and source throughout Project:
 - 1. Portland Cement: ASTM C 150, gray portland cement Type II. Supplement with the following:
 - a. Fly Ash: ASTM C 618, Class C.
- B. Normal-Weight Aggregates: ASTM C 33, Class 4S, uniformly graded. Provide aggregates from a single source with documented service-record data of at least 3 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials.
 - 1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
 - 2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: Potable and complying with ASTM C 94/C 94M.
- D. Air-Entraining Admixture: ASTM C 260.
- E. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain not more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
 - 1. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.

2.4 CURING MATERIALS

- A. Absorptive Cover: AASHTO M 182, Class 3, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry or cotton mats.
- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.

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- C. Water: Potable.
- D. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.
 - 1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - a. BASF Construction Chemicals, LLC; Confilm.
 - b. Sika Corporation, Inc.; SikaFilm.
 - c. Approved equal.

2.5 RELATED MATERIALS

- A. Joint Fillers: ASTM D 1751, pre-molded closed-cell expanded polyethylene foam in preformed strips.
- B. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
- C. Epoxy Bonding Adhesive: ASTM C 881/C 881M, two-component epoxy resin capable of humid curing and bonding to damp surfaces; of class suitable for application temperature, of grade complying with requirements, and of the following types:
 - 1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.6 CONCRETE MIXTURES

- A. Prepare design mixtures, proportioned according to ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.
 - 1. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.
- B. Proportion mixtures to provide normal-weight concrete with the following properties:
 - 1. Compressive Strength (28 Days): 4000 psi.
 - 2. Slump Limit: 4 inches, plus or minus 1 inch.
- C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:
 - 1. Air Content: 6 percent plus or minus 1.5 percent for 3/4-inch nominal maximum aggregate size.
- D. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
 - 1. Use water-reducing 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.
- E. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement in concrete as follows:
1. Fly Ash or Pozzolan: 25 percent.
 2. Ground Granulated Blast-Furnace Slag: 50 percent.
 3. Combined Fly Ash or Pozzolan, and Ground Granulated Blast-Furnace Slag: 50 percent, with fly ash or pozzolan not exceeding 25 percent.
- F. Synthetic Fiber: Uniformly disperse in concrete mixture at manufacturer's recommended rate.

2.7 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work.
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 EXAMINATION

- A. Examine exposed subgrades and subbase surfaces for compliance with requirements for dimensional, grading, and elevation tolerances.
- B. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.
1. Completely proof-roll subbase in one direction. Limit vehicle speed to 3 mph.
 2. Proof-roll with a pneumatic-tired and loaded, 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
 3. Correct subbase with soft spots and areas of pumping or rutting exceeding depth of 1/4 inch according to requirements in Section 312000 "Earth Moving."
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Remove loose material from compacted subbase surface immediately before placing concrete.

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3.3 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

3.4 JOINTS

- A. General: Form construction, isolation, and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless otherwise indicated.
 - 1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.
- B. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than one-half hour unless paving terminates at isolation joints.
 - 1. Provide tie bars at sides of paving strips where indicated.
 - 2. Butt Joints: Use bonding agent at joint locations where fresh concrete is placed against existing concrete surfaces.
 - 3. Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete.
- C. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, other fixed objects, and where indicated.
 - 1. Provide tie bars where indicated. Sleeve, lubricate, or coat tie bar with asphalt (side into concrete pavement) to prevent concrete bonding to one side of joint.
 - 2. Locate expansion joints at intervals of 20 feet unless otherwise indicated.
 - 3. Extend joint fillers full width and depth of joint.
 - 4. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
 - 5. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
 - 6. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
 - 7. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- D. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness, as follows:

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 1/4-inch radius. Repeat grooving of contraction joints after applying surface finishes.
- E. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/4-inch radius. Repeat tooling of edges after applying surface finishes.

3.5 CONCRETE PLACEMENT

- A. Before placing concrete, inspect and complete formwork installation, steel reinforcement and items to be embedded or cast-in.
- B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.
- C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- D. Comply with ACI 301 requirements for measuring, mixing, transporting, and placing concrete.
- E. Do not add water to concrete during delivery or at Project site. Do not add water to fresh concrete after testing.
- F. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
- G. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement dowels and joint devices.
- H. Screed paving surface with a straightedge and strike off.
- I. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.
- J. Cold-Weather Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:
1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg F at point of placement.
 2. Do not use frozen materials or materials containing ice or snow.

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3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in design mixtures.

K. Hot-Weather Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:

1. Cool ingredients before mixing to 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 in total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Cover steel reinforcement with water-soaked burlap so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

3.6 FLOAT FINISHING

A. General: Do not add water to concrete surfaces during finishing operations.

B. Float Finish: Begin the second floating operation when bleed-water sheen has disappeared and concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

1. Burlap Finish: Drag a seamless strip of damp burlap across float-finished concrete, perpendicular to line of traffic, to provide a uniform, gritty texture on slabs under benches.
2. Fine-Textured Broom Finish: Draw a soft-bristle broom across float-finished concrete surface perpendicular to line of traffic to provide a uniform, fine-line texture on pavements or as otherwise indicated.

3.7 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.

B. Comply with ACI 306.1 for cold-weather protection.

C. Evaporation Retarder: Apply evaporation retarder to 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.

D. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

E. Curing Methods: Cure concrete by a combination of these as follows:

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, placed in widest practicable width, with sides and ends lapped at least 12 inches and sealed by waterproof tape or adhesive. Immediately repair any holes or tears occurring during installation or curing period using cover material and waterproof tape.

3.8 PAVING TOLERANCES

A. Comply with tolerances in ACI 117 and as follows:

1. Thickness: Plus $\frac{3}{8}$ inch, minus $\frac{1}{4}$ inch.
2. Surface: Gap below 10-foot- long, unlevelled straightedge not to exceed $\frac{1}{2}$ inch.
3. Alignment of Tie-Bar End Relative to Line Perpendicular to Paving Edge: $\frac{1}{2}$ inch per 12 inches of tie bar.
4. Lateral Alignment and Spacing of Dowels: 1 inch.
5. Vertical Alignment of Dowels: $\frac{1}{4}$ inch.
6. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: $\frac{1}{4}$ inch per 12 inches of dowel.
7. Joint Spacing: 3 inches.
8. Contraction Joint Depth: Plus $\frac{1}{4}$ inch, no minus.
9. Joint Width: Plus $\frac{1}{8}$ inch, no minus.

3.9 REPAIRS AND PROTECTION

- A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Commissioner.
- B. Drill test cores, where directed by Commissioner, when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory paving areas with portland cement concrete bonded to paving with epoxy adhesive.
- C. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION 321313

SECTION 321373 - CONCRETE PAVING JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Cold-applied joint sealants.

- B. Related Sections:

- 1. Section 321313 "Concrete Paving" for constructing joints in concrete pavement.

1.3 PRECONSTRUCTION TESTING

- A. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, Samples of materials that will contact or affect joint sealants.

- 1. Use manufacturer's standard test method to determine whether priming and other specific joint-preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
- 2. Submit no fewer than two pieces of each type of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
- 3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
- 4. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.
- 5. Testing will not be required if joint-sealant manufacturers submit joint-preparation data that are based on previous testing, not older than 24 months, of sealant products for compatibility with and adhesion to joint substrates and other materials matching those submitted.

1.4 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

C. Pavement-Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer.
- B. Product Certificates: For each type of joint sealant and accessory, from manufacturer.
- C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for joint sealants.
- D. Preconstruction Compatibility and Adhesion Test Reports: From joint-sealant manufacturer, indicating the following:
 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility with and adhesion to joint sealants.
 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
- B. Source Limitations: Obtain each type of joint sealant from single source from single manufacturer.
- C. Product Testing: Test joint sealants using a qualified testing agency.
 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.
- D. Preinstallation Conference: Conduct conference at Project site.

1.7 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
 1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
 2. When joint substrates are wet.
 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.

4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. **Compatibility:** Provide joint sealants, backing materials, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer based on testing and field experience.
- B. **Colors of Exposed Joint Sealants:** As selected by Commissioner from manufacturer's full range.

2.2 COLD-APPLIED JOINT SEALANTS

- A. **Multicomponent, Pourable, Traffic-Grade, Urethane Joint Sealant for Concrete:** ASTM C 920, Type M, Grade NS, Class 25, for Use T.
 1. **Products:** Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
 - 1) SilkaFlex 2c NS TG – 2cns; Silka Corporation, Lyndhurst, NJ.
 - 2) Sonolastic SL2; Sonnehorn and ChemRex, Inc., Shakorpee, MN.
 - 3) Tremco Sealant/Waterproofing Division, Vulkem.
 - 4) Or approved equal.

2.3 JOINT-SEALANT BACKER MATERIALS

- A. **General:** Provide joint-sealant backer materials that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by joint-sealant manufacturer based on field experience and laboratory testing.
- B. **Round Backer Rods for Cold-Applied Joint Sealants:** ASTM D 5249, Type 3, of diameter and density required to control joint-sealant depth and prevent bottom-side adhesion of sealant.

2.4 PRIMERS

- A. **Primers:** Product recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.
- B. Joint Priming: Prime joint substrates where indicated or where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated unless more stringent requirements apply.
- B. Joint-Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install joint-sealant backings of kind indicated to support joint sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 - 1. Do not leave gaps between ends of joint-sealant backings.
 - 2. Do not stretch, twist, puncture, or tear joint-sealant backings.
 - 3. Remove absorbent joint-sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install joint sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place joint sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- E. Tooling of Nonsag Joint Sealants: Immediately after joint-sealant application and before skinning or curing begins, tool sealants according to the following requirements to form

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smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint:

1. Remove excess joint sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by joint-sealant manufacturer and that do not discolor sealants or adjacent surfaces.

- F. Provide joint configuration to comply with joint-sealant manufacturer's written instructions unless otherwise indicated.

3.4 CLEANING

- A. Clean off excess joint sealant or sealant smears adjacent to joints as the Work progresses, by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants, during and after curing period, from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately and replace with joint sealant so installations in repaired areas are indistinguishable from the original work.

3.6 PAVEMENT-JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Joints within cement concrete pavement.

1. Joint Location:
 - a. Expansion and isolation joints in cast-in-place concrete pavement.
 - b. Contraction joints in cast-in-place concrete slabs.
 - c. Other joints as indicated.
2. Joint-Sealant Color: As selected by Commissioner from manufacturer's full range.

END OF SECTION 321373

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SECTION 321400 - UNIT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

A. Section Includes:

- 1. Concrete pavers set in bituminous setting beds.
- 2. Concrete permeable pavers.
- 3. Existing concrete pavers removed and re-set on bituminous setting bed.
- 4. Aluminum edge restraints.

B. Related Sections:

- 1. Section 321216 "Asphalt Paving" for asphalt base under unit pavers.
- 2. Section 321313 "Concrete Paving" for concrete base under unit pavers.

1.3 ACTION SUBMITTALS

A. Product Data: For the following:

- 1. Pavers.
- 2. Bituminous setting materials.
- 3. Edge restraints.

B. Sieve Analyses: For aggregate setting-bed materials, according to ASTM C 136.

C. Samples for Initial Selection: For the following:

- 1. Each type of unit paver indicated.
- 2. Aluminum Edge Restraint.

D. Samples for Verification:

- 1. (3) Full-size units of each type of unit paver indicated.
- 2. Aluminum Edge Restraint

1.4 INFORMATIONAL SUBMITTALS

- A. Material Certificates: For unit pavers. Include statements of material properties indicating compliance with requirements, including compliance with standards. Provide for each type and size of unit.
- B. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for unit pavers, indicating compliance with requirements.
 - 1. For paving units, include test data for freezing and thawing according to ASTM C 67.
- C. Warranty: Sample of special warranty.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful paver installations of a similar scope of work.
 - 1. Experience: Five years' experience in paver installation.
 - 2. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
- B. Source Limitations: Obtain each type of unit paver, joint material, setting material and aluminum edge restraint from single source with resources to provide materials and products of consistent quality in appearance and physical properties.
- C. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Include (3) 5'-0" x 5'-0" section of unit pavers of the various paver patterns complying with requirements.
- D. Preinstallation Conference: Conduct conference at Project site.

1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to replace unit pavers that fail in materials within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Deterioration of surface such as significant color change, spalling, etc.. beyond normal weathering.
 - 2. Warranty Period: Two years from date of Substantial Completion.

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1.7 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Pavers: Five percent (5%) of the total for each size indicated.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store pavers on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied.
- B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.
- C. Store liquids in tightly closed containers protected from freezing.
- D. Store asphalt cement and other bituminous materials in tightly closed containers.

1.9 PROJECT CONDITIONS

- A. Cold-Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost or freezing.
- B. Weather Limitations for Bituminous Setting Bed:
 - 1. Install bituminous setting bed only when ambient temperature is above 40 deg F and when base is dry.
 - 2. Apply neoprene-modified asphalt adhesive only when ambient temperature is above 50 deg F and when temperature has not been below 35 deg F for 12 hours immediately before application. Do not apply when setting bed is wet or contains excess moisture.

PART 2 - PRODUCTS

2.1 CONCRETE PAVERS

- A. Concrete Pavers: Solid paving units, made from normal-weight concrete with a compressive strength not less than 5000 psi, water absorption not more than 5 percent according to ASTM C 140, and no breakage and not more than 1 percent mass loss when tested for freeze-thaw resistance according to ASTM C 67.
 - 1. Basis-of-Design, Paver Areas P1 and P2: Subject to compliance with requirements, provide the product indicated or an equivalent product:
 - a. Model: "Prest Paver" concrete pavers.

- b. Manufacturer: Hanover Architectural Products.
 - c. Thickness: 3 inches.
 - d. Face Size and Shape: As indicated on drawings.
 - e. Color: Matrix 2378.
 - f. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, the following:
 - 1) Hanover Architectural Products
5000 Hanover Road, Hanover, PA 17331, (800) 426-4242
 - 2) Wausau Tile
PO Box 1520, Wausau, WI 54402-1520, (800) 388-8728
 - 3) EP Henry Corp.
93 Deerfield Road, West Caldwell, NJ 07006, (609) 929-1948
 - 4) Approved Equal
2. Basis-of-Design, Paver Area P3: Subject to compliance with requirements, provide the product indicated or an equivalent product:
- a. Model: "Village Square" Concrete Pavers.
 - b. Manufacturer: EP Henry.
 - c. Thickness: 3 inches.
 - d. Face Size and Shape: As indicated on drawings.
 - e. Color: Natural Brick Stone.
 - f. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, the following:
 - 1) EP Henry Corp.
94 Deerfield Road, West Caldwell, NJ 07006, (609) 929-1948
 - 2) Wausau Tile
PO Box 1520, Wausau, WI 54402-1520, (800) 388-8728
 - 3) Hanover Architectural Products
5000 Hanover Road, Hanover, PA 17331, (800) 426-4242
 - 4) Approved Equal
- B. Concrete Paver Bricks: Solid paving units, made from normal-weight concrete with a compressive strength not less than 8000 psi, water absorption not more than 5 percent according to ASTM C 140, and no breakage and not more than 1 percent mass loss when tested for freeze-thaw resistance according to ASTM C 67.
1. Basis-of-Design, Paver Areas P1 and P2: Subject to compliance with requirements, provide the product indicated or an equivalent product:
- a. Model: "Traditional" Prest Brick concrete pavers.
 - b. Manufacturer: Hanover Architectural Products.
 - c. Thickness: 3 inches.
 - d. Face Size and Shape: As indicated on drawings.
 - e. Color: Charcoal.

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- f. **Manufacturers:** Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, the following:
 - 1) Hanover Architectural Products
5000 Hanover Road, Hanover, PA 17331, (800) 426-4242
 - 2) Wausau Tile
PO Box 1520, Wausau, WI 54402-1520, (800) 388-8728
 - 3) EP Henry Corp.
95 Deerfield Road, West Caldwell, NJ 07006, (609) 929-1948
 - 4) Approved Equal
2. **Basis-of-Design, Paver Area P3:** Subject to compliance with requirements, provide the product indicated or an equivalent product:
 - a. **Model:** "Brick Stone" Concrete Brick Pavers.
 - b. **Manufacturer:** EP Henry.
 - c. **Thickness:** 3 inches.
 - d. **Face Size and Shape:** As indicated on drawings.
 - e. **Color:** Pewter Blend.
 - f. **Manufacturers:** Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, the following:
 - 1) EP Henry Corp.
96 Deerfield Road, West Caldwell, NJ 07006, (609) 929-1948
 - 2) Wausau Tile
PO Box 1520, Wausau, WI 54402-1520, (800) 388-8728
 - 3) Hanover Architectural Products
5000 Hanover Road, Hanover, PA 17331, (800) 426-4242
 - 4) Approved Equal
- C. **Concrete Permeable Pavers:** Paving units with voids, made from normal-weight concrete with a compressive strength not less than 8000 psi, water absorption not more than 5 percent according to ASTM C 140, and no breakage and not more than 1 percent mass loss when tested for freeze-thaw resistance according to ASTM C 67.
 1. **Basis-of-Design:** Subject to compliance with requirements, provide the product indicated of an equivalent product:
 - a. **Model:** EcoGrid Permeable Paving Units.
 - b. **Manufacturer:** Hanover Architectural Products.
 - c. **Void Shape and Spacing:** square, 5 inches on center.
 - d. **Void:** 39% open space.
 - e. **Color:** Natural.
 2. **Manufacturers:** Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, the following:
 - a. Hanover Architectural Products

- 5000 Hanover Road, Hanover, PA 17331, (800) 426-4242
- b. Rinox Pavers
23 Quarry Road Douglassville, PA 19518, 610-323-6600
- c. Nicolock
640 Muncy Avenue, Lindenhurst, NY 11757, (631) 669-0700
- d. Approved Equal

- D. Existing Concrete Pavers: pavers shall be carefully removed and stored on site prior to re-setting. All damaged paver shall be disposed of off-site and additional pavers will be required. Additional pavers shall match existing in shape, size and color and be blended into the existing paver pattern to thoroughly.

2.2 BITUMINOUS SETTING-BED MATERIALS

- A. Primer for Base: ASTM D 2028, cutback asphalt, grade as recommended by unit paver manufacturer.
- B. Fine Aggregate for Setting Bed: ASTM D 1073, No. 2 or No. 3.
- C. Asphalt Cement: ASTM D 3381, Viscosity Grade AC-10 or Grade AC-20.
- D. Neoprene-Modified Asphalt Adhesive: Paving manufacturer's standard adhesive consisting of oxidized asphalt combined with 2 percent neoprene and 10 percent long-fibered mineral fibers containing no asbestos.
- E. Sand for Joints: Fine, sharp, washed, natural sand or crushed stone with 100 percent passing No. 16 sieve and no more than 10 percent passing No. 200 sieve.

2.3 BITUMINOUS SETTING-BED MIX

- A. Mix bituminous setting-bed materials at an asphalt plant in approximate proportion, by weight, of 7 percent asphalt cement to 93 percent fine aggregate unless otherwise indicated. Heat mixture to 300 deg F.

2.4 CURBS AND EDGE RESTRAINTS

- A. Aluminum Edge Restraints: Manufacturer's standard L-shaped, 3/16-inch- thick by 2-1/4-inch- and 3/16-inch-thick by 4-inch- high extruded-aluminum edging with holes on the lateral edge to receive galvanized steel 3/8" diameter by 10 inches long stakes or galvanized masonry connection 12 inches O.C., Finish shall be black electrostatic paint meeting AAMA 2603.
 - 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Permaloc Corporation

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- 13505 Barry Street, Holland, Michigan 49424 USA, 1.800.356.9660
- b. Curv-Rite, Inc.
Wayland, MI USA, 800-366-2878
- c. Approved equal.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas indicated to receive paving, 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 PREPARATION

- A. Sweep concrete & asphalt substrates to remove dirt, dust, debris, and loose particles.

3.3 INSTALLATION, GENERAL

- A. Do not use unit pavers with chips, cracks, voids, discolorations, or other defects that might be visible or cause staining in finished work.
- B. Mix pavers from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures.
- C. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting to greatest extent possible. Hammer cutting is not acceptable.
 - 1. For concrete pavers, a block splitter may be used.
- D. Joint Pattern: As indicated on drawings.
- E. Tolerances: Do not exceed 1/16-inch unit-to-unit offset from flush (lippage) nor 1/8 inch in 24 inches and 1/4 inch in 10 feet from level, or indicated slope, for finished surface of paving.
- F. Provide edge restraints as indicated. Install edge restraints before placing unit pavers.
 - 1. Install edge restraints to comply with manufacturer's written instructions. Install stakes at intervals required to hold edge restraints in place during and after unit paver installation.
 - 2. Install job-built concrete edge restraints to comply with requirements in Section 033000 "Cast-in-Place Concrete."

3.4 BITUMINOUS SETTING-BED APPLICATIONS

- A. Apply primer to concrete slab or binder course immediately before placing setting bed.
- B. Prepare for setting-bed placement by locating 3/4-inch- deep control bars approximately 11 feet apart and parallel to one another, to serve as guides for striking board. Adjust bars to subgrades required for accurate setting of paving units to finished grades indicated.
- C. Place bituminous setting bed where indicated, in panels, by spreading bituminous material between control bars. Spread mix at a minimum temperature of 250 deg F. Strike setting bed smooth, firm, even, and not less than 3/4 inch thick. Add fresh bituminous material to low, porous spots after each pass of striking board. After each panel is completed, advance first control bar to next position in readiness for striking adjacent panels. Carefully fill depressions that remain after removing depth-control bars.
 - 1. Roll setting bed with power roller to a nominal depth of 3/4 inch. Adjust thickness as necessary to allow accurate setting of unit pavers to finished grades indicated. Complete rolling before mix temperature cools to 185 deg F.
- D. Apply neoprene-modified asphalt adhesive to cold setting bed by squeegeeing or troweling to a uniform thickness of 1/16 inch. Proceed with setting of paving units only after adhesive is tacky and surface is dry to touch.
- E. Place pavers carefully by hand in straight courses, maintaining accurate alignment and uniform top surface. Protect newly laid pavers with plywood panels on which workers can stand. Advance protective panels as work progresses, but maintain protection in areas subject to continued movement of materials and equipment to avoid creating depressions or disrupting alignment of pavers. If additional leveling of paving is required, and before treating joints, roll paving with power roller after sufficient heat has built up in the surface from several days of hot weather.
- F. Joint Treatment: Place unit pavers with hand-tight joints. Fill joints by sweeping dry sand/ cement mixture over paved surface until joints are filled. Remove excess sand/ cement after joints are filled.

3.5 REPAIRING, POINTING, AND CLEANING

- A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.
- B. Cleaning: Remove excess sand/ cement from exposed paver surfaces; wash and scrub clean.

END OF SECTION 321400

SECTION 328000 - IRRIGATION SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and General Conditions Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes:

1. Installation of irrigation piping, sprinklers and drip irrigation including all related control equipment, but is not necessarily limited to, the following:
 - a. Automatic irrigation system with electric/manual control including piping, fittings and accessories.
 - b. High Density Polyethylene pipe (HDPE).
 - c. Rain Sensor with related wiring.
 - d. Controller with related 24V wiring and conduit, electrical wiring.
 - e. Controller enclosure.
 - f. Post Hydrants
 - g. Air release valve assemblies
 - h. Testing and instruction.
 - i. Excavating and backfilling for irrigation system work.
 - j. GPS As-Built drawings.
 - k. Water audit and irrigation scheduling.
 - l. M&O Training and Demonstration.
 - m. Operation Maintenance Manual.
 - n. Warranty
2. Water for the irrigation system to be supplied from the existing well pump and related well equipment (installed as work of other section(s)). The irrigation Contractor shall install the irrigation system from point of connection (P.O.C.) as shown on the drawings.
3. Irrigation system requirements: 75 gpm at 70 psi (dynamic) at the irrigation system point of connection.
4. The extent of the irrigation system is shown on the Drawings.

1.3 RELATED SECTIONS

- A. TEMPORARY TREE AND PLANT PROTECTION 015639
- B. HANDLING, TRANSPORT AND DISPOSAL OF CONTAMINATED MATERIALS 026113

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- | | | |
|----|---|--------|
| C. | VALVES, IRRIGATION FILTER AND VALVE BOXES | 220523 |
| D. | PIPE AND VALVE IDENTIFICATION | 220553 |
| E. | MOTOR CONTROLLERS | 260221 |
| F. | WIRING, GENERAL – 600 VOLTS AND UNDER | 260519 |
| G. | GROUNDING AND BONDING | 260526 |
| H. | CONDUIT | 260531 |
| I. | OUTLET, JUNCTION, AND PULL BOXES | 260534 |
| J. | PANELBOARDS | 262416 |
| K. | WIRING DEVICES | 262726 |
| L. | FLUORESCENT FIXTURES | 265110 |
| M. | EARTH MOVING | 312000 |
| N. | EROSION AND SEDIMENTATION CONTROLS | 312500 |
| O. | WELL TESTING | 330121 |
| P. | COPPER TUBING & FITTINGS UNDERGROUND | 331103 |
| Q. | GROUND HYDRANTS | 331220 |
| R. | FLUSHING OF WATER UTILITY DISTRIBUTION | 331300 |
| S. | SUBMERSIBLE WELL PUMP | 332001 |
- 1.4 REFERENCES
- A. Standards and Codes that apply to the Work of this Section:
1. RE NEC — National Electric Code, current edition.
 2. UPC — Uniform Plumbing Code, current edition.
 3. ASTM — ASTM International:
 - a. B 3 — Specification for Soft or Annealed Copper Wire.
 - b. D 698 — Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort.
 - c. D 1557 — Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.
 - d. Electrical Components, Devices, and Accessories shall be listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.
 - e. Comply with ASTM F 645, "Guide for Selection, Design, and Installation of Thermoplastic Water Pressure Piping Systems."
 - f. Comply with NFPA 70, "National Electrical Code," for electrical connections between wiring and electrically operated devices.
- 1.5 DEFINITIONS
- A. The following are industry abbreviations for irrigation materials.

1. Acceptance, Acceptable, or Accepted: Acceptance by the Commissioner in writing.
2. PVC: Polyvinyl Chloride.
3. HDPE: High Density Polyethylene
4. SDR: Standard Dimensional Ratio.
5. AWG: American Wire Gauge.

1.6 SUBMITTALS

- A. Shop Drawings: Shop drawings showing all piping, conduit, and irrigation equipment (ie. flow sensor, master valve, controller) for point of connection for submitted irrigation control system.
- B. Product Data: Manufacturer and suppliers descriptive literature including installation instructions, for each specified product.
- C. Credentials: Name and qualifications of the irrigation contractor including at least three (3) comparable projects of similar work and scope that the Contractor has completed within the last five (5) years with job locations, names of owners and architects, their phone numbers, and dates on which the work on each project was started and completed.
- D. Certified Irrigation Contractor: Submit proof of current Irrigation Association certified Irrigation Contractor (CIC) status.
- E. Certifications: Written certification from each product manufacturer or supplier stating that their product conforms to the specified requirements and that all products do not contain hazardous materials.
- F. Samples: If requested by the City of New York submit each irrigation system component and other item(s) related to the work to confirm product characteristics.
- G. Operation & Maintenance Manual: The Contractor shall furnish four (4) copies of the O & M Manual (Operation & Maintenance Manual) for the irrigation system and the associated mechanical system. The manual shall include a checklist for trouble shooting and corrective measures in addition to operation and maintenance instructions.
- H. Warranty: On company letterhead submit a written warranty in the following format:

Warranty for ** QUEENS BOTANICAL GARDEN ** irrigation system
We hereby guarantee that the irrigation system we have furnished and installed for ** QUEENS BOTANICAL GARDEN ** is free from defects in materials and workmanship, and the work has been completed in accordance with the drawings and specifications. We agree to repair or replace any defects in material or workmanship which may develop during the period of one year from date of final acceptance and also to repair or replace any damage resulting from repairing or replacing of such defects at no additional cost to the City of New York, after receipt of written notice.

Contractor Name
Signature: Title:
Date:

- I. Manufacturer Warranties: Manufacturer warranty for each specified product.
- J. Submit two (2) disks with mainline fusion Datalogger records.

- K. GPS Construction Record (As-Built) Drawing:
1. Prepare "Construction Record Drawings" for irrigation system using GPS collected data and AutoCAD, release 2008 software and drawn at a scale of 1"=20'-0". Legibly mark drawings to record actual construction.
 2. GPS Construction Record Drawings to consist of the following:
 - a. Controller.
 - b. Sprinklers.
 - c. Spray Heads.
 - d. Quick Coupling Valves.
 - e. Isolation Valves.
 - f. Automatic Valve Assemblies.
 - g. Irrigation system mainline and lateral pipe. Routing to have size indicated.
 - h. Irrigation system 2-wire path routing.
 3. Maintain GPS Data of the irrigation system during the duration of the installation keeping the same current on a daily basis. GPS Data will be updated as irrigation work proceeds indicating the exact field location of all sprinkler heads, piping, valves, wire and miscellaneous equipment for the entire irrigation system. The GPS Data to be kept on-site and be available for review by the Commissioner and City of New York.
 4. Submit three (3) CD-ROM disks with digital AutoCAD drawing file(s) and one (1) set of PDF files suitable for reproduction of the "Construction Record Drawings" showing actual construction.
 5. Submit three (3) sets of blue line prints "Construction Record Drawings" prior to final review and acceptance.
- L. Controller Drawings.
1. Controller drawings to be a reproduction of the construction record drawing reduced and printed on 8 1/2" x 11" 24lb bond paper. Drawings are to be legible. If necessary use multiple sheets of 8 1/2" x 11" paper and place drawings back to back.
 2. Drawings are to show all irrigation zones highlighted in a different color solid hatch pattern with the designated valve schedule.
 3. Seal controller drawings in 10 mil plastic laminate. When multiple drawings are required punch a hole in the upper left had corner of the laminate and connect with round key chain loop.
 4. Submit two (2) drawings for each controller.
- M. Water Audit.
1. Upon completion of the irrigation system installation at no additional cost to the City of New York a water audit shall be done by an Irrigation Association Certified Landscape Irrigation Auditor (CLIA). The audit shall include the following:
 - a. Verify the proper operation of each irrigation component.

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- b. Evaluate the plant material for active root zone depth soil consistency and evapotranspiration rates.
- c. Perform catch can test to verify uniformity of coverage.
- d. Create irrigation schedule from data obtained from water audit.
- e. Submit written report of results.

N. Irrigation Schedule.

1. Using data obtained from the water audit the Certified Landscape Irrigation Auditor shall create a typewritten schedule on 8 ½" x 11" white paper listing each valve number, type of sprinkler (rotor, spray), description of that zone, days to water and daily runtimes for each irrigation month. Irrigation run times based on historical evapotranspiration and rainfall data.

2. Example:

Zone	Type	Days	Description	April	May	June	Jul	Aug	Sept	Oct
1	Rotor	MWF	Front Bed	15:00	17:00	25:00	25:00	30:00	18:00	8:00
2	Spray	MWF	Rear Lawn	5:00	6:00	8:00	12:00	13:00	9:00	6:00

- 3. Schedule to include the following note: Irrigation runtimes are based on Historical data and should be used only as a guide. All irrigation runtimes should be adjusted accordingly based on actual climatic conditions.
- 4. Seal irrigation schedule in 10 mil plastic laminate.
- 5. Submit two (2) irrigation schedules for each controller. In addition provide schedule in PDF format on Disk.

1.7 COORDINATION

- A. Thoroughly coordinate and schedule the work of this Section with all trades involved to prevent interferences, and in order to allow adequate time at the proper stage of construction to properly perform all work of this Section.
- B. Before any work is started, a site conference shall be held between the General Contractor, the Irrigation Design Specialist, the Irrigation Sub/Contractor and Commissioner concerning the work to be performed under this Item. The Landscape Plans shall be reviewed at this conference and siting, layout, pipe pulling, hand and/or pneumatic excavation shall be discussed. Contractor shall schedule conference at the convenience of the Commissioner.
- C. Coordinate location of all piping and sleeves to be installed under walkways and driveway pavements with the general contractor.
- D. Contractor shall maintain sufficient material on site to perform work continuously.

1.8 QUALITY ASSURANCE

- A. It is the intent of these Specifications and the Contract Drawings to provide for a complete installation. Therefore, any items not specifically noted but, reasonably necessary for a complete installation, to be furnished. The system is to efficiently and uniformly irrigate all areas and perform as required by the Contract Documents. The irrigation system is to be fully automatic with an electric/manual control.
- B. The Contractor shall obtain all necessary permits and pay all required fees, at no additional cost to the City, to any governmental agency having jurisdiction over the work. The Contractor as required shall arrange inspections required by local ordinances during the course of construction.
- C. Qualifications:
 - 1. Experienced Contractors are required who are thoroughly trained and experienced in the skills required to install site irrigation, and who will have a qualified superintendent present, at all times, during the installation. Contractors' experience in the installation of site irrigation as outline in Submittals Section 1.6, C and D must be regularly engaged in and which maintains a regular work force in the installation of site irrigation.
 - 2. Manufacturer's Qualifications: The manufacturer providing the material or equipment specified in this Section must, for the past five (5) years, have been regularly engaged in the manufacture of material or equipment similar in type to that required for this Project. Such similar materials or equipment provided by the manufacturer must have been in satisfactory service for not less than five (5) years.
 - a. Furnish to the Commissioner manufacturer's qualifications.
 - 3. Materials, equipment, and methods of installation will comply with the applicable requirements of the authorities having jurisdiction including the following codes and standards:
 - a. City of New York/State of New York Building Codes
 - b. National Fire Protection Association, (NFPA): National Electrical Code.
 - c. American Society for Testing and Materials, (ASTM).
 - d. National Sanitation Foundation, (NSF).
 - e. American Society of Agricultural Engineers, (ASAE).
- D. Licenses:
 - 1. A Licensed Plumber shall make all plumbing connections. A Licensed Electrician shall perform connections to 120V power supplies.
- E. Rejection:
 - 1. The Commissioner reserves the right to reject any proposed design layout, material, or work, which does not conform to the Contract Documents. Rejected work shall be removed or corrected at the Contractor's expense immediately upon notification by the Agency.

F. Pipe Fusion Training:

1. The contractor (at no additional cost to the City of New York) will be required to have a qualified fusion technician from the pipe supplier for a training period of three days. The fusion technician must have been trained and have fusion certification. The training must have been completed within the past twelve months. A designated person or persons will be trained by the technician. The training will include the following:
 - a. butt fusion
 - b. socket fusion
 - c. electrofusion
 - d. attachment of mechanical saddles.

1.9 JOB CONDITIONS

- A. During the installation of the irrigation system extreme care shall be taken around existing trees and plant material. Install irrigation system in a manner that minimizes disruption to existing trees and plant material within the cultivated gardens and approved by the Commissioner.
- B. Locate and identify existing underground and overhead services and utilities within the contract limits. Install adequate means of protection of utilities and services designated to remain. Repair utilities damaged during work operations of this Section at the Contractor's expense.
- C. When uncharted or incorrectly charted underground piping or other utilities and services are encountered during site work operations, notify the Commissioner and applicable utility company immediately to obtain procedural directions.
- D. Cooperate with the applicable utility company in maintaining active services in operation.
- E. Locate, protect, and maintain bench marks, monuments, control points and project engineering reference points. Re-establish disturbed or destroyed items at Contractor's expense.
- F. Protect existing and newly installed trees, plants, lawn areas, and other features designated to remain as part of the landscape work.
- G. Examine the areas and conditions under which site work is to be performed. Promptly notify the City of New York of unexpected sub-surface conditions. Do not proceed with the work until unsatisfactory conditions are corrected.
- H. Perform work operations and the removal of debris and waste materials to assure minimum interference with walks and other adjacent site features.
- I. Protect existing paving and other services or facilities on site from damage caused by work operations of this Section. Repair and restore damaged items to original condition.
- J. Obtain the City of New York's written permission when required to close or obstruct walks and adjacent facilities. Provide alternate routes around closed or obstructed walks and adjacent facilities. Provide alternate routes around closed or obstructed walks when required by the City of New York.
- K. The contractor shall be allowed access to the site Monday through Friday at times coordinated with the General Contractor. There is to be no work on Weekends.

- L. Failure on part of the Commissioner to reject work in the course of operations or during inspection of work is to not be interpreted as acceptance of work not in conformance with these contract documents. Correct improper work or materials whenever discovered.

1.10 FINAL REVIEW AND ACCEPTANCE

- A. When all irrigation work is completed and the "Construction Record Drawing" has been submitted a final review of the irrigation system will be made by the City of New York, upon written notice requesting such a review. Submit the written notice at least ten (10) days prior to the anticipated review.
- B. Upon final review and acceptance, the City of New York will notify the Contractor, in writing, as to final acceptance of the irrigation system. Date of the final acceptance by the City of New York is the date beginning the warranty period.
- C. Any irrigation equipment item required under this contract that is malfunctioning or in need of repair is to be removed and replaced. All replacements are to be of equipment and/or material originally specified. The cost of replacement is to be borne by the Contractor.
- D. Upon acceptance of the entire system, instruct the City of New York's designated personnel in the complete operation of the entire system.

1.11 WARRANTY

- A. Warranty the entire irrigation system and all related equipment and accessories for a period of one (1) year from the date of final acceptance against all defects in workmanship and material.
- B. The warranty period will commence upon final acceptance by the City of New York for a complete system and/or any portion thereof that has been put into operation and is acceptable to the City of New York.

1.12 MAINTENANCE

- A. During the warranty period, maintain the irrigation system to insure complete operation of the entire system. Adjust and repair all settled piping, trenches and sprinkler heads. Correct all defective or damaged work as soon as possible.
- B. Return to the site during the subsequent fall season(s) (before October 30th) and winterize the entire system. Drain all water from the system via compressed air and demonstrate to the City of New York the proper procedures for the system winterization.
- C. Return to the site during the subsequent spring season(s) (before April 15th) and start-up the system. Demonstrate to the City of New York the proper procedures for the system start-up, operation, and maintenance.
- D. System maintenance to begin immediately upon substantial completion. Provide continuing maintenance of the irrigation system, as necessary, throughout the installation of the irrigation system.

1.13 DELIVERY, STORAGE, AND HANDLING

- A. Deliver the irrigation system components in the manufacturer's original undamaged and unopened containers with labels intact and legible.

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- B. Deliver plastic piping in bundles, packaged to provide adequate protection of pipe ends, both threaded or plain.
- C. Handle materials to prevent damage.
- D. Store materials to protect from sunlight, temperature variation and weather.
- E. Provide secure, locked storage for valves, sprinkler heads, and similar components that can not be immediately replaced, to prevent installation delays.

PART 2 - PRODUCTS

2.1 IRRIGATION MANUFACTURERS

- A. Antelco Corporation, Longwood, Florida
- B. Apollo Ball Valve, Pageland South Carolina
- C. Ashcroft Gauges, Stratford, Connecticut
- D. Carson Industries LLC; Flora, Mississippi
- E. Clow Valve Company, Piedmont, South Carolina
- F. Dura Plastic Products; Beaumont, California
- G. Elchen Industries, Inc. (Turf-Tite), Dallas, Texas
- H. Goodall Rubber Company, Trenton, New Jersey
- I. Hunter Industries San Marcos, California
- J. IPEX Inc Beverly, Massachusetts
- K. Irritrol, Riverside, California
- L. JM Eagle Pipe, Stockton, California
- M. Lasco Industries, Anaheim, California
- N. Multiplex Manufacturing Company, Berwick, Pennsylvania
- O. Netafim Irrigation Fresno, California
- P. Nibco Inc ; Elkhart, Indiana
- Q. Oil Creek Plastics, Inc. Titusville, Pennsylvania
- R. Paige Electric Corp., Union, New Jersey
- S. Pentek Access Boxes, Sheboygan, Wisconsin
- T. Phillips Driscopipe, Inc. Wellford, South Carolina
- U. Rain Bird, Glendora, California
- V. Rain Master, Riverside, California
- W. Superior Controls Company, Inc., Valencia, California
- X. Toro Company, Riverside, California
- Y. V.I.T. Products, Inc, Escondido, California

- Z. 3M Corporation, Electrical Products Division, St. Paul, Minnesota

2.2 MATERIALS

- A. All irrigation equipment is to be provided by an authorized distributor.
- B. The irrigation system major components (i.e. controller, decoders, sprinklers, drip irrigation and valves) shall be manufactured by a single manufacturer.
- C. All material and equipment furnished by the Contractor to be new, of the kind and type specified, of good quality, and to be delivered to the site in good condition. All materials to be protected by the Contractor until incorporated in the work and finally accepted by the City of New York.
- D. Controller:
 - 1. The Control System shall be decoder-based two-wire configuration supporting 1-200 stations with 16 independently controllable irrigation programs, programmable runtimes for each station can be set from 1 minute to 23 hrs 59 minutes, delay time can be from 0 to 219 minutes and 59 seconds and programmable total runtime, maximum cycle runtime and soak time on a per station basis. Watering days for each program can be based on a 14-day cycle or a skip-by-day cycle and can be further restricted with the selection of either ODD or EVEN day watering schedule per program. Cycle and soak irrigation programming or conventional programming shall be selectable on a per program basis. Water conservation features shall include: Evapotranspiration (ET) based scheduling and percentage adjustment selectable on a per program basis, re-calculated station run times are to be executed to the nearest second, programmable rain shut off in order to delay the start of irrigation after a rainstorm, automatic minimization of the water window by scheduling station starts when other stations are satisfying their soak times and automatic monitoring and display of measured station flow. Water usage readings indicating total water used by the controller on a per month basis and up to one year worth of data shall be maintained. The controller shall have diagnostic and fault detection capabilities that shall include but not be limited to: displaying reports of fault conditions, automatic detection of no-watering condition per station, unscheduled water flow and excessive flow conditions per station. Control system shall be capable of Central Control upgrade. Approved controller shall be model EGP200i-PSB by Rain Master. Approved equals include Tucor Model TWC-NV controller or Rain Bird model ESP-LXD Decoder Controller. Control system to include hand-held radio remote for on-site access to irrigation program.
 - 2. Include at no additional cost to the City of New York a site survey for the controller which shall be performed (PRIOR TO ORDERING CONTROLLER) by the Authorized Representative of the controller manufacturer to confirm radio reception.
 - 3. Include at no additional cost to the City of New York account set-up and communication activation for the irrigation controller.
 - 4. Include at no additional cost to the City of New York (3) three instructional meetings with the City of New York and Queens Botanical Gardens designated personnel and the Authorized Representative of Manufacturer. These meetings are to occur upon completion of the irrigation system installation.

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E. Controller Enclosure:

1. Enclosure to be of a vandal and weather resistant nature and manufactured entirely of 304 grade stainless steel. Enclosure to be NEMA 3R as manufactured by V.I.T. Products Inc, All-Spec Enclosures or LeMeur.
2. Enclosure to include heavy duty weather resistant lock.

F. Line Decoders:

1. Line decoder shall be a fully programmable, direct bury decoder that provides an interface between the controller and automatic valve. Approved line decoders shall be Rain Master models TW-D-1 and TW-D-2, Tucor LD-100 and LD-200 or Rain Bird models FD-101TURF and FD-102TURF.

G. Flow Sensor:

1. Flow Sensor shall be a 1 1/2" nylon impeller style sensor module in schedule 80 PVC with slip fittings that provides current flow status. Approved Flow Sensor model shall be Rain Master FS-150, Rain Bird model FS150P or Creative Sensor Technology FSI-T15-001. Rain Master FS-200 requires sensor cable model EV-CAB-SEN for direct connection to Rain Master Controller. Rain Bird model FS200P requires Flow Sensor Decoder Model SD210TURF to provide interface between controller and flow sensor.

H. Hand-Held Remote:

1. On-Site remote operation of the controller shall utilize a hand-held battery operated transmitter that communicates to a permanently mounted receiver wired directly to controller 24 VAC power supply. Remote unit shall be capable of providing communication with any of the manufacturers' control systems as outlined in Section C above. The hand-held remote shall be a model PRO-MAX as manufactured by Rain Master or approved equal.

I. 2-Wire Decoder Wire:

1. 2-Wire decoder wire to be double jacketed two (2) conductor #14 awg cable specially designed for use with the 2-wire control systems, suitable for direct burial. The conductors to be 12 -18 gauge, tin coated, soft drawn, annealed, solid copper conforming to ASTM 33 with 4/64" thick PVC (polyvinyl chloride) insulation, conforming to UL Standard #493 for thermoplastic-insulated style UF (Underground Feeder), rated at 60 degree C. Wire to be manufactured by Paige Electric, Baron or Regency Wire.

J. 24V Electrical Equipment:

1. Low voltage (24 VAC) wire-splice kits to be UL listed 3M DBY-6, Paige DBM or Connector Kings Dryconn.
2. Wire connectors to be Insulated Connector (Y, R, G, B), or approved equal - size in accordance to wire AWG used.

3. Conduit for 2-wire path to be rigid 1" **Non-Metallic** conduit and fittings conforming to NEMA TC-2, Federal specification WC1094A and UL 651 specifications. Fittings are manufactured to NEMA TC-3, Federal specification WC1094A and UL514B.

K. Grounding:

1. Ground rods for grounding controller to be 5/8" by 8' copper clad steel rods. Ground rods to be Paige Electric model #182000.
2. Grounding plates for grounding controllers to be 4" x 8' x 0.0625" (101.6 mm x 2.44 m x 1.6 mm). A 25-foot (7.62 m) continuous length of 6 AWG, green insulated, with extruded yellow stripe, solid bare copper wire is welded to the plate. Grounding plate to be Paige Electric model #182199IC.
3. Grounding plates for grounding decoders to be 4" x 3' x 0.0625" (101.6 mm x 2.44 m x 0.9 mm). A 10-foot (3.05 m) continuous length of 10 AWG, green insulated, with extruded yellow stripe, solid bare copper wire is welded to the plate. Grounding plate to be Paige Electric model #182201IC.
4. Bonding wire to be AWG #6/1 solid bare copper conductor. Bonding wire to be Paige Electric model #160635.
5. Earth grounding wire to be 6/1 AWG, green insulated, solid bare copper wire. Paige Electric model #150854.
6. All grounding connectors to be of the Cadweld "One Shot" fuse type – Model GR1161GPLUS (Paige Electric model #1820037P) and Model GT1161GPLUS (Paige Electric model #1820039P). Connections to be made utilizing the Cadweld Battery Control Unit, Paige Electric model # PLUSCU.
7. Earth contact material for each grounding plate to be two (2) 50lb bags of "PowerSet" for loose soils, Paige Electric model #1820058 or "PowerFill" for clay soils, Paige Electric model #1820059.
8. Decoder cable fuse device to be Paige Electric #DCFD.

L. Sleeves:

1. Sleeves to house pipe and wire conduit under pavement or walkways to be Sch. 40 PVC pipe w/solvent weld coupling as manufactured by JM Eagle, IpeX or Diamond Pipe.

M. Pipe:

1. Provide pipe continuously and permanently marked with manufacturer's name or trademark, size schedule and type of pipe, working pressure at 73 degrees F. and National Sanitation Foundation (NSF) approval.
2. All mainline and lateral piping shall be homogenous throughout and free from visible cracks, holes, foreign materials, blisters, wrinkles, and dents.

3. Main line piping to be SDR-11 160 PSI (Butt Fusion) High Density Polyethylene (HDPE). The pipe shall be PE3408/PE3608 high density, high molecular weight resin. The pipe shall be in compliance with ASTM F714 dimension and pressure ratings. Primary properties- Cell classification shall be in accordance with ASTM D 3350-84 and 345434C/E. Pipe to be manufactured by JM Eagle, Phillips Driscopipe Inc. or ISCO Industries.
4. All lateral pipe to be polyethylene (POLY) PE2306 SIDR-11.5 - 100 psi and conforming to ASTM-2239. Pipe to be as manufactured by Oil Creek Plastics, Inc., Centennial Plastics, Inc or Charter Plastics.

N. Pipe Fittings:

1. HDPE main line BUTT Fusion pipe fittings to be SDR-11 160 PSI (Butt Fusion) High Density Polyethylene (HDPE) Driscopipe 8600 extruded from Marlex M-8000. The fittings shall be PE 3408 high density, high molecular weight. The fittings shall be in compliance with ASTM F714 dimension and pressure ratings. Primary properties- Cell classification shall be in accordance with ASTM D 3350-84 and 345434C. Fabricated fittings are to be manufactured using Data Logger to record temperature, fusion pressure, and a graphic representation of the fusion cycle shall be of the Quality Control records. Fittings to be manufactured by JM Eagle, Phillips Driscopipe Inc. or ISCO Industries.
2. Electrofusion Fittings for HDPE pipe – Fittings shall be made from resin or pipe meeting ASTM D 3350 with a minimum cell classification of 345434C/E. Electrofusion Fittings shall meet the manufacturing standard of ASTM F714. Fittings shall have the same pressure rating as the pipe or higher unless otherwise specified on the plans.
3. Mainline Flanged and Mechanical Joint Adapters – Flanged and Mechanical Joint Adapters shall be made from materials containing resin that meets ASTM D 3350 with a minimum cell classification of 345434C/E
4. Fittings to be used with polyethylene pipe in the landscape areas to be PVC insert fittings as manufactured by Spears, or approved equal. Clamps to be stainless steel, worm gear hose clamps with stainless steel screws, series 6800 as manufactured by Ideal or stainless steel “ear” type clamps, series 210 as manufactured by Oetiker, SAE type “J” as manufactured by Murray Corporation or series 61 as manufactured by Ideal.
5. PVC fittings, where required on lateral pipe, to be PVC Schedule 40. Male adapters to be PVC Schedule 80. All PVC nipples to be Schedule 80 with molded threads. Close nipples to not be allowed. Fittings and nipples to be as manufactured by Spears Manufacturing, Dura or Lasco.

O. Dielectric Fittings:

1. ASTM F 441/F 441M, Schedule 80, CPVC threaded pipe nipples, 4 inch length.

P. Drip Irrigation Equipment:

1. Drip irrigation piping for drip bubblers and sprays shall be 17mm blank tubing, as manufactured by Netafim, Rainbird or Antelco.

2. Male Adaptor, model TL075MA, as manufactured by Netafim.
3. Combination Tee, model TL075FTEE, s manufactured by Netafim.
4. Soil Staple, model TLS6. As manufactured by Netafim.
5. Pressure Regulator 3/4"; model PRV07535LF, as manufactured by Netafim.
6. Pressure Regulator 3/4"; model PRV07535HF, as manufactured by Netafim.
7. 1" filter w/140 mesh; model DF100-140, as manufactured by Netafim.
8. Insert fittings for use with Techline tubing, as manufactured by Netafim Irrigation.

Q. Drip Bubblers and Drip Spray Emitters:

1. Drip bubblers shall have 360 degree adjustable flow patterns with flow rates of 27 gallons per hour (gph), 30.1 gph or 35.0 depending on adjustable flow control setting at nozzle. Bubblers will have between 0.69 to 1.89 diameter wetting areas and be mounted on poly-flex riser with barb fitting to accept 0.16" diameter poly line. Bubblers shall be model 31425 as manufactured by Antelco, Netafim or Rainbird.
2. Drip spray emitters shall have adjustable flow rates between 17.3 gph to 24.3 gph with spray diameters of 9.4 feet to 13.3 feet depending on flow setting. Drip spray nozzles shall be mounted on poly drip stake with 0.16" barb adapter. Drip spray emitters shall be a model Spectrum 32015 as manufactured by Antelco, Netafim or Rainbird.

R. Sprinklers:

1. Full circle 25'- 45' radius sprinklers (true 360 rotation) to be Toro TR50XTPSS, Rain Bird model 5006 FC SAM or Hunter I-20-06-SS.
2. Part circle 25'-45' radius sprinklers to be Toro TR50XTPSS, Rain Bird model 5006 PC – F SAM or Hunter I-20-06-SS.
3. Part circle – Full circle 12" Hi-Pop rotors with 25' - 45' radius to be Toro TR50XTHP, Rain Bird model 5012 P FC SAM or Hunter model I-20-12.

S. Spray Heads:

1. 6" pop-up spray head to be Toro 570Z-6P-PR-COM, Rain Bird model RD-06-S or Hunter model PROS-06-CV.
2. 12" pop-up spray head to be Toro 570Z-12P-PR-COM, Rain Bird model RD12-S or Hunter model PROS-12-CV.
3. Plastic rotary nozzles to be Precision Rotary Series by Toro Rotator, MP Rotator series 1000, 2000 and 3000 as manufactured by Hunter Industries, 1800 Series by Rain Bird.

4. Include additional 12" riser for each 12" pop-up sprinkler or approved equal.

T. Swing Joints:

1. Swing joint used for pop-up spray heads to be made from Toro Funny Pipe model 850-25 and Funny Pipe elbows models 850-31 (1/2") and 850-32 (3/4") or model SJ-512 as manufactured by Hunter Industries or approved equal.
2. Swing joint used for quick coupling valves to be PVC snap-loc with brass MIPT, model G13S-212 as manufactured by Lasco, Dura or Fittings, Inc. or approved equal.
3. Swing joint used for pop-up gear driven sprinklers to be 3/4" 315 psi rated PVC swing joint, model T732-100 as manufactured by Lasco or approved equal.

U. Valves:

1. Valves on the pressure side of the automatic valves to be bronze body manual ball valves with stainless steel plastic covered handle (150 p.s.i. rated) with NPT connections. Size to be the same as the automatic valve it serves. Valves to be as manufactured by Apollo Ball Valve, Nibco or Watts.
2. All main line gate valves to be resilient wedge type conforming to the requirements of AWWA Spec. C509. They are to have flanged connections, turn counter-clockwise to open, to be designed for 200 psi working pressure and have a 2" operating nut. Valves to be Clow Valve Company, Kennedy or Waterous.
3. Quick-coupling valves to be two piece bronze bodies, double slot, 1" IPS with lock top. Valves to be model #100-2SLVLC as manufactured by Toro, model #44LRC as manufactured by Rain Bird or model #HQ-44LRC as manufactured by Hunter. Coupler to be model #100-SLK as manufactured by Toro, model #44-K as manufactured by Rain Bird or model HK-44 as manufactured by Hunter. Brass hose swivels to be 1" X 3/4" model #075-MHS as manufactured by Toro or model #SH-1 as manufactured by Rain Bird.
4. Automatic valves to be plastic globe type, normally closed, electric solenoid-actuated and diaphragm-operated with flow stem. Solenoid to be epoxy impregnated 24 VAC-60 Hz (18 to 30 VAC), 5.8 VA and to be suitable for direct burial. Valves to be capable of manual operation by means of an internal bleed. Sizes to be as noted on the drawings. Valves to be Toro P220 series valves, Rain Bird PEB series or Hunter ICV series valves.
5. Master valve to be brass globe type, normally open, electric solenoid-actuated and diaphragm-operated with flow stem. Solenoid to be epoxy impregnated 24 VAC-60Hz (18 to 30 VAC), 5.8 VA and to be suitable for direct burial. Valves to be capable of manual operation by means of an internal bleed. Valve to be series 3100 as manufactured by Superior Controls Company, Inc or approved equal.
6. Valve identification tags to be standard size, model ID-STD-Y1. The identification tag shall be stamped with the following designation L1, L2 etc. for lawn areas, P1, P2 etc. for

planter areas and T1, T2 etc. for tree pit areas to match number of valves per controller. The identification tags to be manufactured by T. Christy Enterprises or approved equal.

V. Valve Boxes:

1. Valve boxes used with automatic valve assemblies (other than drip irrigation) to be STANDARD 12" x 17" x 12" deep valve boxes; black in color. Valve boxes to be model #1419-12" with L-Bolt down option Green cover as manufactured by Pentek.
2. Valve boxes used with 1" drip irrigation valve assemblies to be JUMBO 15" x 21" x 12" deep valve boxes; Black in color. Valve boxes to be model #1220-12" with L-Bolt down option green cover, model #190156 box with #194006 cover with snap locks as manufactured by Pentek..
3. Valve boxes for drip irrigation flush valves, ground rods and quick coupling valves to be ECONO 6" round valve box. Green in color. Valve boxes to be model #L-0708 as manufactured by Pentek.
4. Valve box extensions, as required, to be of the same size, color and manufacturer as the box on which it is used.

W. Rain Sensor:

1. Wireless rain sensor to be model 53770 as manufactured by Toro, WR2-RS as manufactured by Rain Bird or model WR-CLIK as manufactured by Hunter Industries.

X. Pressure Gauges:

1. Pressure gauges to be (0-200 PSI) 2 1/2" x 1/4"-NPT, model 1001U-steel as manufactured by Ashcroft or approved equal.

Y. Post Hydrant:

1. Hose bib to be brass with 1/2" MIP inlet.
2. Brass vacuum breaker for hose connection.
3. Brass 2-way metal Wyee hose connector with built in shut-off.
4. 6" x 6" x 6' pressure treated post.

2.3 ACCESSORY MATERIALS

A. Drainage Stone for Valve Boxes:

1. One-half inch (1/2") to three-quarter (3/4") size, washed, graded crushed stone.

B. Fabric:

Construction of Garden-Wide Pedestrian Pathway System

43-50 Main Street, Flushing NY 11355

FMS Project ID # PV272-PATH

1. Soil separation fabric at valve boxes shall be Mirafi 140N, non-woven, spun bound, polyester geotextile fabric or approved equal.
- C. Brick:
1. Common, grade SW, per ASTM C42.
- D. Bedding for Piping Material:
1. Coarse, mason sand conforming to ASTM C-33.
- E. Trench Backfill in Lawn and Planting Areas:
1. Conform to requirements of soil mixtures as specified in section 329200 or 329300.
 2. Refer to Section 312000, Earthmoving.
- F. Suitable excavated materials removed to accommodate the irrigation system work are to be used as fill materials.
- G. PVC Cement/Primer
1. PVC cement to be IPS - #721, Wet "R" Dry, Recto-Seal Gold. PVC primer to be IPS - #P-70 (purple). PVC cement for Schedule 80 nipples to be IPS #711.
- H. Thread Sealant:
1. Assemble brass to brass threaded fitting connections with non-hardening thread sealant-Lasco Blue Pipe Thread Sealant, Permatex #80045 or approved equal.
- 2.4 Extra Materials:
- A. The following materials shall be delivered to the Queens Botanical Garden, prior to completion of the work to be utilized in repair and maintenance.
1. Mainline Valve Keys: Furnish four (4) tee-handles for gate valves installed.
 2. Quick-Coupler Hose Swivels: Furnish eight (8) units of model quick coupler swivel.
 3. Quick-Coupler Operating Keys: Furnish eight (8) units of 1" coupler.
 4. 300' - 1 1/2" Poly PE #2306 100 psi pipe
 5. 500' - 1" Poly PE #2306 100 psi pipe
 6. 400' - Blank drip tubing
 7. 100 - Stakes
 8. 25 ea - Drip insert elbows, tees, male adapters
 9. 100 - drip spray emitters and stakes
 10. 100 - drip irrigation mini-bubblers
 11. 18 - Gear Drive sprinklers
 12. 18 - 12" pop-up sprinklers with swing joints
 13. 12 - 6" pop up sprinklers with swing joints
 14. 6 - 1" automatic valves
 15. 6 - 1" quick coupling valves
 16. 8 - Standard valve boxes w/cover

- 17. 4 - Jumbo valve boxes w/cover
- 18. 6 - Econo valve boxes w/cover
- 19. 24 - 24 VAC wire splice kits
- 20. 6 - Single decoders
- 21. 4 - Spears 1" swing joint

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine the areas and conditions where Site Irrigation is to be installed. Notify the City of New York, in writing, of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the City of New York.

3.2 PREPARATION AND LAYOUT

- A. The location of sprinkler heads, valves and piping, noted on the drawings, are generally diagrammatic to the extent that swing joints, off sets and all pipe fittings are not shown; exact locations of piping, sprinkler heads, valves, and other components are to be approved by the City of New York in the field prior to the time of installation.
- B. Pipe routing is to be in accordance with the drawings, however, the City of New York shall have the right to change the route and/or depth of the pipe from that shown in cases where rock or other obstacles may interfere with the intended path or depth of the piping.
- C. Stake all proposed pipe and wire routes, sprinkler, valve and controller locations in accordance with the locations noted on the drawings; provide staking prior to the commencement of work in any area of installation; furnish all supplies, equipment and personnel necessary for the staking of the work. All staked locations to be reviewed and approved by the City of New York prior to installation.
- D. Notify the Commissioner a minimum of five (5) days prior to the scheduled staking.
- E. Coordinate the irrigation work with planting and lawn work as to have irrigation available at time of the turf and plant material establishment.
- F. Coordinate irrigation work with plumbing, electrical and sleeve work.

3.3 CUTTING AND PATCHING

- A. Methods and materials used for cutting and patching to be acceptable to the Commissioner.
- B. Materials and finishes for all patching to match existing cut surface materials and finish.
- C. Cut through concrete and masonry with core drills. Jack hammers not permitted.
- D. Seal all openings in exterior walls water tight with link seals.

3.4 CONDUIT:

- A. Install all electrical conduits for 24V control wiring.
- B. Backfill and thoroughly compact around all conduit.

- C. All conduits to have a minimum cover of twenty four inches (24").

3.5 SLEEVES:

- A. Coordinate installation of sleeves for all piping and conduit/24V control wire passing under concrete curbing, concrete or masonry walls and pathways while the same are under construction.
- B. Install all sleeves for all piping and conduit passing under planter walls, curbing, concrete or masonry walls and pathways while the same are under construction.
- C. Install ends of sleeves six to twelve inches (6"-12") beyond the edge of all pavement and curbs.
- D. Backfill and thoroughly compact around all sleeves.
- E. All sleeves to have a minimum cover of twenty four inches (24").
- F. All sleeve locations to be staked or permanently marked.

3.6 INSTALLATION

A. Winterization Assembly:

- 1. Install winterization assemblies as detailed on the drawings.

B. Main Line Isolation Valve(s):

- 1. Install main line Isolation valves as detailed on the drawings.

C. Master Valve:

- 1. Install master valve on mainline and connect to the master valve terminal of the irrigation controller in accordance with the detail drawings.

D. Flow Sensor:

- 1. Install flow sensor on mainline and connect to the sensor terminal of the irrigation controller in accordance with the detail drawings.

E. Excavating and Backfilling:

- 1. Provide all excavation, backfilling and compaction required for the proper installation of all piping.
- 2. The use of a vibratory plow to be allowed for lateral piping as long as minimum cover is maintained. Turf to be neatly replaced along the plow scar and rolled level with a light weight vibratory roller.
- 3. Excavation is to include all materials encountered.
- 4. Minimum trench width is to be three inches (3") on each side of the main line pipe and one and one half inches (1½") on each side of lateral pipe to allow for proper compaction of backfill material.

5. Prior to excavation of trenches carefully lift existing sod at the location of all piping, connections, sprinklers, quick couplers and valve boxes. After components are installed, cut the sod to fit and replace it.
6. Excavate to the depths required to allow a three inch (3") depth of sand bedding material for piping when unsuitable bearing materials are encountered.
7. Minimum depth of cover:
 - a. Main line piping: - 24" of cover.
 - b. Lateral piping: - 14" of cover.
 - c. Control wire: - 24" of cover.
 - d. Control wire and pipe under pavement: - 24" of cover.
8. Backfill material to be free from rock, large stones, or other unsuitable substances to prevent damage to pipe during backfilling operations.
9. Backfill trenches to match adjacent grade elevations with approved trench backfill material. Place and compact fill in layers not greater than six inch (6") depth to ninety-five percent (95%) maximum dry density at optimum moisture content under all paving areas and 85% maximum under lawn and planting areas.
10. Excavate trenches; install piping and backfill during the same working day. Do not leave open trenches or partially filled trenches overnight.

F. Pipe Fusion:

1. Sections of polyethylene pipe shall be joined into continuous lengths on the jobsite above ground. The joining method shall be the butt fusion method and shall be performed in strict accordance with the pipe supplier's recommendations. The butt fusion equipment used in the joining procedures shall be capable of meeting all conditions recommended by the pipe supplier. The butt fusion joining shall produce a joint with weld strength equal to or greater than the tensile strength of the pipe itself.
2. Mechanical joining will be used where the butt fusion method cannot be used. Mechanical joining will be accomplished by either using a HDPE flange adapter with a ductile iron back-up ring.
3. Hot gas fusion, threading, solvents, and epoxies will not be used to join HDPE pipe.

G. Record Butt Fusion Detail:

1. All main line pipe joints are to be butt fused using McElroy fusion equipment. Each McElroy butt fusion unit shall be equipped with a McElroy DataLogger. The contractor shall label each butt fused joint so as it will be recorded on the DataLogger. The DataLogger shall record temperature, fusion pressure, with a graphic representation of the fu-

sion cycle. The DataLogger information shall be downloaded weekly and given to the Commissioner for quality control records.

H. Pipe Laying:

1. Inspect the pipe for defects before installation and fusion. Defective, damaged or un-sound pipe will be rejected.
2. Pipe to be installed in accordance with ANSI/ASAE Standard #S376.1 and the printed instructions of the manufacturer, including leveling of trench bottoms, bedding of pipe in bottom trench and securely thrusting any fittings to change direction of gasketed pipe.
3. Allow joints to set at least 24 hours before pressure is applied to the system.
4. Maintain pipe interiors free of dirt and debris. Close open ends of pipe by acceptable methods when pipe installation is not in progress.
5. Join HDPE pipe using butt-fusion technique as per the written instructions of the manufacturer. Join HDPE pipe to dissimilar pipe material using HDPE (butt-fusion) x flange adapter with ductile iron back-up ring.
6. Cement all solvent weld fittings in strict accordance with cement manufacturer's printed instructions. Color primer to be used.
7. Install all wall penetrations where required to make plumbing and/or electrical wiring connections. All penetrations to be watertight. Penetrations and seals to be acceptable to the Commissioner.
8. All insert type fittings on laterals 1 1/2" or larger to be double clamped. Insert fittings used on 1 1/4" or smaller poly pipe to be single clamped.

I. Clearances:

1. Minimum horizontal clearances between pipes: 4 inches for 2 inch pipe and less; 12 inches for 2 inch pipe and more.
2. Minimum vertical clearances between pipes: Two inches.

J. Dielectric Fittings:

1. Provide dielectric fittings between copper and ferrous metal piping.

K. Sprinklers, Spray Heads, Quick Coupling Valves, Fittings, and Accessories:

1. Sprinklers and Quick Coupling Valves to be connected to the piping system by installing factory assembled PVC swing joints. Swing joint size to be the same size as that of the IPS inlet of the sprinkler, or as otherwise shown. The long nipple of the swing joint to be set between 20 and 60 degrees from the horizontal. Install quick coupling valve in 6" econo box and set within 1" of the bottom of the box cover. See detail drawings.

2. All sprinklers and quick-coupling valves are to be set flush to finish grade.
3. Locate quick coupling valves along main line piping in a location approved by the Commissioner.
4. Install fittings, valves, sprinkler heads, risers and accessories in accordance with manufacturer's printed instructions, except as otherwise indicated or as detailed on the drawings.
5. Install all pop-up spray heads with flex pipe swing joints as shown on the drawings.
6. Obtain commissioner's review and acceptance of height of spray heads, sprinklers and quick coupling valves.

L. Valve Boxes and Valve Assemblies:

1. All valve box locations are to be staked prior to installation and approved by the Commissioner prior to starting construction.
2. Valve boxes to be installed in accordance with the drawings with adequate space for operation, service and removal of the equipment in the box.
3. Do not group more than two irrigation valve boxes together in one location. When grouping two valve boxes together allow 12" of space between boxes.
4. Where necessary to properly fit the pipe, boxes to be neatly cut so as to provide a firm fit to the pipe. Soil or gravel not to be allowed to enter the box through these cut-outs.
5. All boxes to be mounted plum and flush to finish grade - extensions to be used as required for proper installation and setting. Surrounding grade to be established with the use of a leveling board not less than 4' in length. Box to be set to the underside of this board.
6. Do not install more than one valve assemblies per valve access box.
7. Install all valve boxes in planting beds in a location approved by the Commissioner. Do not install valve boxes in lawn areas.
8. Seal threaded connections on pressure side of control valves with teflon tape.
9. Automatic valve assemblies to be in accordance with the drawings using standard brass nipples, Heavy Duty brass fittings and PVC Schedule 80 nipples.
10. Ball valves to be installed in the "closed" position and to not be opened until the main line piping system has been pressurized and flushing has been completed through the blow-out valve assemblies.
11. Assemble brass to brass threaded fitting connections with non-hardening thread sealant - Lasco Blue Pipe Thread Sealant, Permatex #80045, or approved equal.

12. Assemble threaded PVC to PVC, or brass to PVC, with the use of two (2) wraps of Teflon tape.
13. Assemble threaded connections so that thread sealant or Teflon tape does not enter the pipe or fitting.
14. Automatic valve manual bleeds to not be used for continual operation. For extended use without 24 VAC, the manual bleed to be left in the open position and the flow to the zone controlled (on-off) by the manual ball valve.
15. Install valve identification tag on each valve assembly as shown on the drawings.

M. Controller:

1. Controller to be wall mounted in the mechanical room in a location approved by the Commissioner. Install the controller in accordance with manufacturer's printed instructions and connected so as to form an operational system. Diagrammatic location shown on the drawings.
2. Valve control wires to be numbered with waterproof labels corresponding to their valve number (A1, A2 etc).

N. Controller Power Supply:

1. Controller to have one circuit with full time 120VAC GFCI outlet and 120VAC to the controller with on/off switch.
2. Power to the controller to be supplied from a dedicated circuit and brought to the controller location (Installed as part of work of other section(s) and contract).
3. The irrigation Contractor to be responsible for all wiring and associated equipment to connect power supply from dedicated circuit to the controller.
4. All 120V wiring is to be done by a NYS licensed electrician.
5. All wiring is to be in accordance with all state and local codes. Refer to and comply with Electrical work requirements specified in Division 26.

O. Grounding/Surge Protection:

1. All surge protection and grounding to be installed in strict compliance with the manufacturer's printed instructions and in accordance with local, State and Federal codes and requirements.
2. The ground grid components shall be installed with the dimensional relationships shown on the details. WIRES, CABLES, AND ELECTRONIC EQUIPMENT MUST BE INSTALLED OUT SIDE "THE SPHERE OF INFLUENCE" OF THE GROUNDING ELECTRODES.
3. Install grounding as detailed.

4. Drive the ground rod vertically to its entire length.
 5. The ground plates are to be installed to a minimum depth of 30" (76 cm), or below the frost line if it is lower than 30".
 6. Two 50-pound bags of "Earth Contact Material" must be spread so that it surrounds and the 8-foot copper plate evenly along its length within a 6" (152 mm) wide trench. Use one bag only for the installation of 3-foot ground plates. Salts, fertilizers, betonite clay, cement, coke, carbon, and other chemicals are not to be used to improve soil conductivity because these materials are corrosive and will cause the copper electrodes to erode and become less effective with time. It is important that the Earth Contact Material completely surrounds the ground plate and 6" (152 mm) of the insulation of the green wire, as shown in the detail, in order to minimize corrosion.
 7. Connect 6/1 AWG earth grounding, green insulated, solid bare copper wire to the ground rod and grounding plate with Cadweld connector. Install all grounding circuit components in straight lines and simple geometry. No sharp bends or turns to be allowed. When necessary to bend wires, make sweeping turns as detailed. All grounding and bonding wires of electronic equipment must be fed through a dedicated 1.5" (38.1 mm) plastic sweep ell. "Sweep bends" must follow the guidelines shown here. The 6/1 AWG bare copper wires are to be installed in as straight a line as possible, and if it is necessary to make a turn or a bend it shall be done in a sweeping curve with a minimum radius of 8" (203.2 mm) and a minimum included angle of 90°. This type of installation, which utilizes a multi-position bus bar, allows for rapid connecting and disconnecting of desired wires in order to periodically take earth resistance readings of the individual grounding electrodes.
 8. The earth-to-ground resistance is to be measured at the time of installation using a "Megger", or other similar instrument, and the reading is to be no more than 10 Ohms. If the resistance is more than 10 ohms, additional ground plates and "Earth Contact Material" are to be installed using the 100-2002 (www.asic.org, "Design Guides".) It is required that the soil surrounding copper electrodes, within the Sphere of Influence, be kept at a minimum moisture level of 15% (by weight) at all times as dry soil does not conduct electricity. **ALL GROUNDING COMPONENTS MUST BE CONNECTED TO THE EQUIPMENT BEFORE ANY OTHER CONNECTION IS MADE.**
 9. Surge suppression device to be installed at every line termination point. Install first surge suppression device within 100 feet of central control system. Additional installation of surge suppression devices are needed per 600 feet of wire cable, located at the nearest line decoder. The surge suppression device ground wires to be connected to a single grounding rod as detailed.
- P. Rain Sensor:
1. Install rain sensor in a location approved by the Commissioner.
- Q. Line Decoders:

1. Install on each automatic valve assembly a line decoder in accordance with manufacturer's printed instructions and in accordance with the drawings.
 2. The Contractor is to be responsible for accurately recording on the as-built drawings, as each decoder is being installed, the address number of the decoder at that location. It is also necessary that it be indicated which remote controls valves controlled by each specified decoder.
- R. Hand Held Remote Unit:
1. A site survey to be conducted by a representative of the manufacturer to determine frequency and antenna requirements.
- S. 2-Wire Path Cable:
1. Install 2-wire path in conduit and locate in pipe trenches. Place conduit in trench adjacent to pipe. Install wire with slack to allow of thermal expansion and contraction.
 2. Install control wire under pavements in PVC sleeves. Coordinate location of wiring and sleeve locations.
 3. Install decoder fuse device at 2-wire path junctions in accordance with the drawings.
 4. Install a thirty-six inch (36") long wire loop with expansion joint at remote control valves in control boxes to allow raising the valve bonnet to the surface without disconnecting the wires when repair is required. At all splice and valve assemblies make 5-6 turns of the wire around a piece of ½" PVC pipe to allow for thermal expansion and contraction.
 5. Connect each remote control value to one line decoder and connect to two-wire path.
 6. Make all two wire connections to automatic valves completely waterproof using UL listed splice kit. Install in strict accordance with the manufacturer's printed instructions.
- T. Air Release Valve Assemblies:
1. Install air release valve assemblies as detailed at the highest elevation points along the main line piping of the irrigation system in a location approved by the City of New York.
 2. Test air release assemblies for operation prior to acceptance of the system.
- U. Post Hydrant:
1. Install post hydrants in accordance with the drawings and in locations approved by the Commissioner.
 2. Brass vacuum breaker for hose connection.
 3. Brass 2-way metal Wyee hose connector with built in shut-off.
 4. 6" x 6" x 6' pressure treated post.

3.7 PRESSURE TESTING

- A. Pressure testing shall be conducted in accordance with the ASTM F 2164, Field Leak Testing of Polyethylene Pressure Piping Systems Using Hydrostatic Pressure. The HDPE pipe shall be filled with water, raised to test pressure and allowed to stabilize. The test pressure shall be 1.5 times the operating pressure at the lowest point in the system. In accordance with section 9.8, the pipe shall pass if the final pressure is with 5% of the test pressure for 1 hour. For safety reasons, hydrostatic testing only will be used.
- B. When main line pipe is installed in phases and/or segments pressure test each main line segment and/or phase.
- C. All lateral piping to be tested under working conditions and visual inspection made for leaks.
- D. All leaks to be repaired and the lines retested until approved by the City of New York.
- E. Notify the Commissioner seventy-two (72) hours prior to testing.

3.8 FLUSHING AND ADJUSTMENT

- A. After piping is installed and before sprinklers and spray heads are installed, open control valves and flush out the system with full head of water until pipe is free of all foreign materials.
- B. Adjustment of the sprinkler equipment will be done upon completion of the installation, to provide optimum performance and to assure that all sprinklers are properly set to grade.
- C. Adjust all automatic valves by means of the flow control stem and verify sprinkler discharge pressure on each lateral zone, with a pitot tube and gauge, to obtain optimum sprinkler performance in accordance with manufacturer's printed instructions.
- D. After the system has been installed, test the entire system and demonstrate that the entire system meets coverage requirements and automatic controls function properly.

3.9 CLEAN UP AND PROTECTION

- A. Upon completion of all work of this Section, remove and legally dispose of all excess materials resulting from the work operations of this Section.
- B. Accumulation of materials for disposal is not permitted. Disposal is to be made as fast as materials accumulate.
- C. Adequately protect all paving, surfacing, lawn areas and plant material and restore to original condition all damages resulting from work operations of this Section.

3.10 M & O TRAINING AND DEMONSTRATION

- A. After testing is completed and approved by the Commissioner, a training and demonstration session shall be held for the M&O staff. The installed irrigation system shall be demonstrated for one day (maximum 6 hours) for the M & O Staff. The demonstrations shall include manual and automatic operation including pumping. The demonstration shall also include identification and operation of each component, trouble shooting for each component, winterizing the system, removal and replacement of defective components, general and specific requirements for the system maintenance, and a check list for frequent attention of components. Highlights of the

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demonstration, including identification of components shall be videotaped for future M&O training.

3.11 O & M MANUAL

- A. The Contractor shall furnish four (4) copies of the O & M Manual (Operation & Maintenance Manual) for the irrigation system and the associated mechanical system. The manual shall include a checklist for trouble shooting and corrective measures in addition to operation and maintenance instructions.

END OF SECTION 328000

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SECTION 329200 - TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

A. Section Includes:

- 1. Seeding
- 2. Sodding

B. Related Sections:

- 1. Section 311000 "Site Clearing"
- 2. Section 312000 "Earth Moving"
- 3. Section 328000 "Irrigation System"
- 4. Section 329300 "Plants"
- 5. Section 329600 "Transplanting"

1.3 DEFINITIONS

- A. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.
- B. Finish Grade: Elevation of finished surface of planting soil.
- C. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- D. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- E. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- F. Subgrade: Surface or elevation of subsoil remaining after excavation is complete, or top surface of a fill or backfill before planting soil is placed.
- G. Subsoil: All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.

- H. Surface Soil: Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil, but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
 - 1. Inorganic Soil Amendments and Fertilizers: Include product label and manufacturer's application instructions specific to this Project.

1.5 INFORMATIONAL SUBMITTALS

- A. Certification of Seed: From seed vendor for each seed mixture stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.
- B. The Contractor shall submit a document from the sod source for approval prior to delivery of sod to the site showing the seed composition and percentages of each grass type proposed. Additionally the Contractor shall submit the "Record of the Field from Date of Seeding to Harvest" after the sod source has been approved.
- C. Qualification Data: For qualified landscape Installer.
- D. Product Certificates: For soil amendments and fertilizers, from manufacturer.
- E. Material Test Reports: For standardized ASTM D 5268 topsoil, existing native surface topsoil, existing in-place surface soil, and imported or manufactured topsoil.
- F. Maintenance Instructions: Recommended procedures to be established by The City of New York for maintenance of turf during a calendar year. Submit before expiration of required initial maintenance periods.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful organic turf establishment.
 - 1. Experience: Five years' experience in turf installation and a minimum 2 years' experience with organic turf installation and maintenance.
 - 2. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 - 3. Pesticide Applicator: State licensed, commercial.
- B. Soil-Testing Laboratory Qualifications: A University laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

- C. Soil Analysis: For each un-amended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; deleterious material; pH; and mineral and plant-nutrient content of the soil.
 - 1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
 - 2. The soil-testing laboratory shall oversee soil sampling, with depth, location, and number of samples to be taken per instructions from Commissioner. Existing on-site soil samples shall be taken approximately every twenty thousand square feet with a minimum of two samples per acre shall be taken from varied locations as determined by the Commissioner for each soil to be used or amended for planting purposes.
 - 3. Report suitability of tested soil for turf growth.
 - a. Based on the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
 - b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.
- D. Preinstallation Conference: Conduct conference at Project site.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws, as applicable.
- B. Bulk Materials:
 - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants. Location to be determined by the Commissioner.
 - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 - 3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.

1.8 PROJECT CONDITIONS

- A. Planting Restrictions for Seed: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of planting completion.
 - 1. Spring Planting: April 1 to June 1.

2. Fall Planting: September 1 to October 1.
- B. Planting Restrictions for Sod: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of planting completion.
1. Spring Planting: April 15th to June 15th
 2. Fall Planting: September 1 to November 1st as long as the ground is not frozen.
- C. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

1.9 MAINTENANCE

- A. Turf Maintenance: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each sod and seed area is planted and continue until acceptance of each phase of construction. Seeded areas shall not be accepted until a satisfactory stand has been achieved and any unsatisfactory sod or seed turf shall be removed and replaced at the Contractors expense.

PART 2 - PRODUCTS

2.1 SEEDED LAWN

- A. Grass Seed: Grass Seed shall be endophyte-enhanced, fresh, clean seed of the latest crop mixed in the following proportions by weight and meeting the following standards of pure live seed content (Purity & Germination) and maximum allowable weed seed content. All seed shall be certified (blue tag) seed and shall be free of noxious weeds and undesirable grasses.
- B. All seed cultivars listed shall have a minimum purity of 95%, a minimum germination of 80%, and a weed seed content not exceeding 0.1% by weight.

The blend/mix of grass in sod shall be one of those listed below and shall be harvested from one field to insure a uniform color and texture. Percentages of each grass type are to be within the given range for that type.

1. Proportioned by weight as follows:
 - a. 95% Tall Fescue (*Festuca arundinacea*) - mix of two to four of the following cultivars: Rebel IV, Elisa, Endeavour, Falcon IV, Cochise II, Coyote II, Guardian, Tar Heel, Jaguar 3 or Rebel Exeda
 - b. 5% Kentucky bluegrass (*Poa pratensis*) - one of the following cultivars: Award, Tsunami, Midnight II, NuDestiny, Princeton 105, Avalanche, Awesome, Barrister, Total Eclipse, Impact, Liberator, Limousine, Rugby II, and Unique.

All seed shall be interagency certified under the auspices of a State Seed Improvement Cooperative and must bear their seals of certification on each fifty pound (50 lb.) bag.

All Grass shall be delivered in sealed standard size bags of the Vendor, showing weight, analysis, and name of Vendor. It shall be stored as directed by the Commissioner in such a manner that its effectiveness will not be impaired. The Commissioner reserves the right to reject, on or after delivery, any material which does not, in their opinion, meet these specifications.

2.2 TURFGRASS SOD

- A. Turfgrass Sod: shall be a superior sod grown from high quality seed of known origin. Seed is to be inspected by a Certification Agency to assure satisfactory genetic identity and purity and overall high quality. Grass Seed shall be fresh, clean seed of the latest crop mixed in the following proportions by weight and meeting the following standards of pure live seed content (Purity & Germination) and maximum allowable weed seed content. All seed shall be certified (blue tag) seed and shall be free of noxious weeds and undesirable grasses.
- B. Turfgrass Species: All seed cultivars listed shall have a minimum purity of 95%, a minimum germination of 80%, and a weed seed content not exceeding 0.1% by weight.

The blend/mix of grass in sod shall be one of those listed below and shall be harvested from one field to insure a uniform color and texture. Percentages of each grass type are to be within the given range for that type.

- 1. Proportioned by weight as follows:
 - a. 95% Tall Fescue (*Festuca arundinacea*) - mix of two to four of the following cultivars: Rebel IV, Elisa, Endeavour, Falcon IV, Cochise II, Coyote II, Guardian, Tar Heel, Jaguar 3 or Rebel Exeda
 - b. 5% Kentucky bluegrass (*Poa pratensis*) - one of the following cultivars: Award, Tsunami, Midnight II, NuDestiny, Princeton 105, Avalanche, Awesome, Barrister, Total Eclipse, Impact, Liberator, Limousine, Rugby II, and Unique.

Sod shall be grown on mineral (not organic) soil, be high quality, free of weeds, disease and insects, and of good color and density. Sod shall be machine cut to uniform soil thickness of five eighths (5/8"), plus or minus one-eighth inch (1/8") at the time of cutting. Individual pieces of sod shall be cut to the suppliers' standard width and length. Sod grown on mesh to aid in harvesting is not acceptable.

Measurement for thickness shall exclude top growth and thatch. Individual pieces of sod shall be cut to the supplier's standard width and length. Maximum allowable deviation from standard widths and lengths shall be five (5%) percent. Broken pads and torn or uneven ends will not be acceptable. Sod shall be at least one (1) year old and no more than two (2) years old from time of original seeding.

Standard sections of sod shall be strong enough to support their own weight and retain their size and shape when suspended vertically. Sod shall not be harvested or transplanted when the moisture content may adversely affect its survival.

Sod shall be harvested, delivered, and installed within a period of twenty four (24) hours. Soil on sod pads shall be kept moist at all times. Before cutting, sod shall be mowed uniformly at a height of one and one-half inches (1 1/2"). The Commissioner may inspect the sod before it is harvested but reserves the right to reject, on or after delivery, any sod which, in their opinion, does not meet with the specifications.

2.3 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:
 - 1. Provide lime in form of ground dolomitic limestone.
- B. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, and with a minimum of 99 percent passing through No. 6 sieve and a maximum of 10 percent passing through No. 40 sieve.
- C. Sand: Clean, washed, natural or manufactured, and free of toxic materials.

2.4 ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
 - 1. Organic Matter Content: 50 to 60 percent of dry weight.
 - 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.

2.5 FERTILIZERS

- A. Organic Fertilizer: Granular or pelleted fertilizer consisting of 100% organic sources of nitrogen, phosphorus, and potassium in the following composition:
 - 1. Rate/Composition: Apply 20-25 lb/1000 sq. ft. of 5% nitrogen, 3% phosphorous, and 4% potassium, by weight. Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.6 PLANTING SOILS

- A. Planting Soil: Imported topsoil or manufactured topsoil from off-site sources. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from agricultural land, bogs or marshes.
 - 1. Additional Properties of Imported Topsoil or Manufactured Topsoil: Screened and free of stones 1/2" inch or larger in any dimension; free of roots, plants, sod, clods, clay lumps,

pockets of coarse sand, paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials harmful to plant growth; free of obnoxious weeds and invasive plants including quackgrass, Johnsongrass, poison ivy, nutsedge, nimblewill, Canada thistle, bindweed, bentgrass, wild garlic, ground ivy, perennial sorrel, and bromegrass; not infested with nematodes, grubs, other pests, pest eggs, or other undesirable organisms and disease-causing plant pathogens; friable and with sufficient structure to give good tilth and aeration. Continuous, air-filled, pore-space content on a volume/volume basis shall be at least 15 percent when moisture is present at field capacity. Soil shall have a field capacity of at least 15 percent on a dry weight basis.

2. Organic content: Topsoil shall contain at least (3%) three percent organic matter determined by loss of ignition, of moisture-free samples dried in accordance with the current method of the Association of Official Agricultural Chemists. The organic content shall not to exceed (8%) eight percent.
3. Acidity Range: pH 6.0% to pH 6.8% inclusive.
4. Soil Textural Analysis: Planting Soil shall consist of the following percentages of sand, silt and clay.
 - a. Sand 40% to 75%
 - b. Silt 15% to 65%
 - c. Clay 20% maximum
5. Electrical Conductivity: shall be maximum 1.50 mmhos/cm.
6. Mix imported topsoil or manufactured topsoil with the following soil amendments and fertilizers in the following quantities to produce planting soil:
 - a. Volume of Loose Compost per 1000 Sq. Ft.: Rate based on recommendations of soil analysis report
 - b. Weight of Lime per 1000 Sq. Ft.: Rate based on recommendations of soil analysis report
 - c. Weight of Bonemeal per 1000 Sq. Ft.: Rate based on recommendations of soil analysis report
 - d. Weight of Commercial Fertilizer per 1000 Sq. Ft.: Rate based on recommendations of soil analysis report

2.7 MULCHES

- A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.
- B. Compost Mulch: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 2 to 5 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

1. Organic Matter Content: 50 to 60 percent of dry weight.
2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas to be planted for compliance with requirements and other conditions affecting performance.
 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
 3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Commissioner and replace with new planting soil.

3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

3.3 TURF AREA PREPARATION

- A. Limit turf subgrade preparation to areas to be planted. Turf areas shall be prepared and planted within in 48 hours of completing subgrade preparation. In the event that this is not possible the contractor shall cover areas prepared with 4 mil black plastic sheeting to prevent erosion and weed germination. Plastic sheeting shall be properly secured with ballast as deemed appropriate by the Commissioner.
- B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.
 1. Thoroughly blend planting soil off-site before spreading.
 - a. Bring to pH levels of 6.0 (minimum) to 6.8 pH shall be verified by testing

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- b. Lower pH levels by using elemental sulfur product. Copper sulfate may not be used to lower pH.
 - c. Additional amendments shall be mixed into the planting soil as recommended by the testing laboratory and as approved by the Commissioner for each plant type and condition of installation.
 - d. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
 - e. Mix lime with dry soil at least 7 days prior to mixing fertilizer.
 2. Spread planting soil to a depth of 5" inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
 - a. Spread planting soil over loosened subgrade. Mix thoroughly into top 4 inches of subgrade.
- C. Unchanged Subgrades: If turf is to be planted in areas unaltered or undisturbed by excavating, grading, or surface-soil stripping operations, prepare surface soil as follows:
 1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
 2. Loosen surface soil to a depth of at least 6 inches. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 6 inches of soil. Till soil to a homogeneous mixture of fine texture. Soil amendments within drip lines of existing trees shall be performed by air spading under the supervision of the Certified Arborist.
 3. All amendments shall be thoroughly incorporated into the mixture to assure uniform distribution. Delay mixing of fertilizers if planting will not follow within a few days.
 - a. Bring to pH levels of 6.0 (minimum) to 6.8 pH shall be verified by testing
 - b. Lower pH levels by using elemental sulfur product. Copper sulfate may not be used to lower pH.
 - c. Additional amendments shall be mixed into the planting soil as recommended by the testing laboratory and as approved by the Commissioner for each plant type and condition of installation.
 - d. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
 - e. Mix lime with dry soil at least 7 days prior to mixing fertilizer.
 4. Remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other extraneous matter.
 5. Legally dispose of waste material, including grass, vegetation, and turf, off City of New York's property.
- D. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted within 48 hours.
- E. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

- F. Before planting, obtain Commissioner's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 SEEDED LAWN

- A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
 - 1. Do not use wet seed or seed that is moldy or otherwise damaged.
 - 2. Do not seed against existing trees.
- B. Sow seed at a total rate 2x the manufacturer's recommended rate of application.
- C. Rake seed lightly into top 1/8 inch of soil, roll lightly, and water with fine spray.
- D. Protect seeded areas with slopes exceeding 1:4 with erosion-control blankets and 1:6 with erosion-control fiber mesh installed and stapled according to manufacturer's written instructions.
- E. Protect seeded areas with erosion-control mats where shown on Drawings; install and anchor according to manufacturer's written instructions.
- F. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose thickness over seeded areas. Spread by hand, blower, or other suitable equipment.
 - 1. Anchor straw mulch by crimping into soil with suitable mechanical equipment.
- G. Protect seeded areas from hot, dry weather or drying winds by applying compost mulch within 24 hours after completing seeding operations. Soak areas, scatter mulch uniformly to a thickness of 3/16 inch, and roll surface smooth.

3.5 SODDING

- A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.
- B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to soil or sod during installation. Tamp and roll lightly to ensure contact with soil, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
 - 1. Lay sod across slopes exceeding 1:3.
 - 2. Anchor sod on slopes exceeding 1:6 with 6" long 11 gauge wire staples spaced as recommended by sod manufacturer but not less than two anchors per sod strip to prevent slippage.

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- C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 4" inches below sod.
- D. Sod shall be laid a minimum of four (4) weeks prior to the Final Inspection date to allow the sod to thoroughly knit before being turned over to the City of New York. All dead or unacceptable sod shall be replaced prior to the Final Inspection. All extra sod and/or plant debris remaining from the preparation procedure shall be removed from the site.

3.6 TURF MAINTENANCE

- A. Maintain and establish turf by watering, spring & fall fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
 - 1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
 - 2. Weeding shall be performed by mechanical means only – No Herbicides, Pesticides or Fungicides will be allowed.
 - 3. Mechanical and biological aeration to be performed as required.
- B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.
 - 1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. If temperatures are above 90°F water at rate of ½" inch every other day. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
 - 2. Water turf between 4:00am to 9:00am with a fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate. The contractor shall not cease watering operations unless written authorization is given by the Commissioner.
- C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:
 - 1. Mow to a height of 3-1/2 to 4 inches.
- D. Turf Post Fertilization: Apply fertilizer as per manufacturer's recommendations for new turf installations.
- E. Maintenance Log: The Contractor shall maintain a written log of all maintenance performed on newly established lawn areas. Log must be kept up to date on a weekly basis and signed by the Commissioner verifying tasks performed.

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3.7 SATISFACTORY TURF

- A. Turf installations shall meet the following criteria as determined by Commissioner:
 - 1. Satisfactory Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 95 percent over any 10 sq. ft. and bare spots not exceeding 3 by 3 inches.
- B. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

3.8 CLEANUP AND PROTECTION

- A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.
- B. Remove non-degradable erosion-control measures after grass establishment period.

END OF SECTION 329200

SECTION 329300 - PLANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

- A. Section Includes:

- 1. Plants.
- 2. Planting soils.
- 3. Mulch.

- B. Related Sections:

- 1. Section 015639 "Temporary Tree and Plant Protection" for protecting, trimming, pruning, repairing, and replacing existing trees to remain that interfere with, or are affected by, execution of the Work.
- 2. Section 311000 "Site Clearing" for protection of existing trees and plantings, topsoil stripping and stockpiling, and site clearing.
- 3. Section 312000 "Earth Moving" for excavation, filling, and rough grading and for subsurface aggregate drainage and drainage backfill materials.
- 4. Section 329200 "Turf and Grasses" for turf (lawn).

1.3 DEFINITIONS

- A. Backfill: The earth used to replace or the act of replacing earth in an excavation.
- B. Container-Grown Stock: Healthy, vigorous, well-rooted plants grown in a container, with a well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for type and size of plant required.
- C. Duff Layer: The surface layer of native topsoil that is composed of mostly decayed leaves, twigs, and detritus.
- D. Fabric Bag-Grown Stock: Healthy, vigorous, well-rooted plants established and grown in-ground in a porous fabric bag with well-established root system reaching sides of fabric bag. Fabric bag size is not less than diameter, depth, and volume required by ANSI Z60.1 for type and size of plant.
- E. Finish Grade: Elevation of finished surface of planting soil.

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- F. **Manufactured Topsoil:** Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.
- G. **Pests:** Living organisms that occur where they are not desired, or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.
- H. **Planting Area:** Areas to be planted.
- I. **Planting Soil:** Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.
- J. **Plant; Plants; Plant Material:** These terms refer to vegetation in general, including trees, shrubs, vines, ground covers, ornamental grasses, bulbs, corms, tubers, or herbaceous vegetation.
- K. **Root Flare:** Also called "trunk flare." The area at the base of the plant's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.
- L. **Stem Girdling Roots:** Roots that encircle the stems (trunks) of trees below the soil surface.
- M. **Subgrade:** Surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.
- N. **Subsoil:** All soil beneath the topsoil layer of the soil profile, and typified by the lack of organic matter and soil organisms.
- O. **Surface Soil:** Soil that is present at the top layer of the existing soil profile at the Project site. In undisturbed areas, the surface soil is typically topsoil; but in disturbed areas such as urban environments, the surface soil can be subsoil.

1.4 ACTION SUBMITTALS

- A. **Product Data:** For each type of product indicated, including soils.
 - 1. **Inorganic Soil Amendments and Fertilizer:** Include product label and manufacturer's application instructions specific to the Project.
- B. **Samples for Verification:** For each of the following:
 - 1. **Shredded bark mulch:** 2 pound volume of each organic mulch required; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch. Each Sample shall be typical of the lot of material to be furnished; provide an accurate representation of color, texture, and makeup.

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1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified landscape Installer. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.
- B. Product Certificates: For each type of manufactured product, from manufacturer, and complying with the following:
 - 1. Manufacturer's certified analysis of standard products.
 - 2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
- C. Material Test Reports: For existing native surface topsoil, existing in-place surface soil and imported or manufactured topsoil.
- D. Maintenance Instructions: Recommended procedures to be established by City of New York for maintenance of plants during a calendar year. Submit before start of required maintenance periods.
- E. Warranty: Sample of special warranty.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified landscape Installer whose work has resulted in successful organic turf establishment.
 - 1. Experience: Five years' experience in turf installation and a minimum 2 years' experience with organic turf installation and maintenance.
 - 2. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.
 - 3. Pesticide Applicator: State licensed, commercial.
- B. Soil-Testing Laboratory Qualifications: A University laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.
- C. Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of the soil.
 - 1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
 - 2. The soil-testing laboratory shall oversee soil sampling; with depth, location, and number of samples to be taken per instructions from Commissioner. Existing on-site soil samples shall be taken approximately every twenty thousand square feet with a minimum of two samples per acre shall be taken from varied locations as determined by the Commissioner for each soil to be used or amended for planting purposes.
 - 3. Report suitability of tested soil for plant growth.

- a. Based upon the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.
- b. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.

D. Preinstallation Conference: Conduct conference at Project site.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws if applicable.
- B. Bulk Materials:
 - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
 - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
 - 3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.

1.8 PROJECT CONDITIONS

- A. Field Measurements: Verify actual grade elevations, service and utility locations, irrigation system components, existing plantings, and construction contiguous with work of this section by field measurements before proceeding.
- B. Interruption of Existing Services or Utilities: Do not interrupt services or utilities to facilities occupied by City of New York or others unless permitted under the following conditions and then only after arranging to provide temporary services or utilities according to requirements indicated:
 - 1. Notify City of New York no fewer than two days in advance of proposed interruption of each service or utility.
 - 2. Do not proceed with interruption of services or utilities without City of New York's written permission.
- C. Weather Limitations: Proceed with work of this section only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.

PART 2 - PRODUCTS

2.1 INORGANIC SOIL AMENDMENTS

- A. Lime: ASTM C 602, agricultural liming material containing a minimum of 80 percent calcium carbonate equivalent and as follows:
 - 1. Class: T, with a minimum of 99 percent passing through No. 8 sieve and a minimum of 75 percent passing through No. 60 sieve.
 - 2. Provide lime in form of ground dolomitic limestone.
- B. Sulfur: Granular, biodegradable, and containing a minimum of 90 percent sulfur, with a minimum of 99 percent passing through No. 6 sieve and a maximum of 10 percent passing through No. 40 sieve.
- C. Sand: Clean, washed, natural or manufactured, and free of toxic materials.

2.2 ORGANIC SOIL AMENDMENTS

- A. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:
 - 1. Organic Matter Content: 50 to 60 percent of dry weight.
 - 2. Feedstock: Agricultural, food, or industrial residuals; biosolids; yard trimmings; or source-separated or compostable mixed solid waste.

2.3 FERTILIZERS

- A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 1 percent nitrogen and 10 percent phosphoric acid.

2.4 PLANTING SOILS

- A. Planting Soil: Imported topsoil or manufactured topsoil from off-site sources. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from agricultural land, bogs, or marshes.
 - 1. Additional Properties of Imported Topsoil or Manufactured Topsoil: Screened and free of stones ½" inch or larger in any dimension; free of roots, plants, sod, clods, clay lumps, pockets of coarse sand, paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, building debris, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, acid, and other extraneous materials harmful to plant growth; free of obnoxious weeds and invasive plants including quackgrass, Johnsongrass, poison ivy, nutsedge, nimblewill, Canada thistle, bindweed, bentgrass, wild garlic, ground ivy, perennial sorrel, and brome grass; not infested with nematodes, grubs, other pests, pest eggs, or other undesirable organisms and disease-causing plant pathogens; friable and

with sufficient structure to give good tilth and aeration. Continuous, air-filled, pore-space content on a volume/volume basis shall be at least 15 percent when moisture is present at field capacity. Soil shall have a field capacity of at least 15 percent on a dry weight basis.

2. Organic content: Topsoil shall contain at least (5%) three percent organic matter determined by loss of ignition, of moisture-free samples dried in accordance with the current method of the Association of Official Agricultural Chemists. The organic content shall not to exceed (12%) eight percent.
3. Acidity Range: pH 6.0% to pH 6.8% inclusive.
4. Soil Textural Analysis: Planting Soil shall consist of the following percentages of sand, silt and clay.
 - a. Sand 40% to 75%
 - b. Silt 15% to 65%
 - c. Clay 20% maximum
5. Electrical Conductivity: shall be maximum 1.50 mmhos/cm.
6. Mix imported topsoil or manufactured topsoil with the following soil amendments and fertilizers in the following quantities to produce planting soil:
 - a. Volume of Loose Compost per 1000 Sq. Ft.: Rate based on recommendations of soil analysis report
 - b. Weight of Lime per 1000 Sq. Ft.: Rate based on recommendations of soil analysis report
 - c. Weight of Bonemeal per 1000 Sq. Ft.: Rate based on recommendations of soil analysis report
 - d. Weight of Commercial Fertilizer per 1000 Sq. Ft.: Rate based on recommendations of soil analysis report

2.5 MULCHES

- A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:
 1. Type: Shredded bark.
 2. Size Range: 3 inches maximum, 1/2 inch minimum.
 3. Color: Natural- not dyed.
 4. pH: 5.8 to 6.2

2.6 MISCELLANEOUS PRODUCTS

- A. Mycorrhizal Fungi: Dry, granular inoculant containing at least 5300 spores per lb of vesicular-arbuscular mycorrhizal fungi and 95 million spores per lb of ectomycorrhizal fungi, 33 percent hydrogel, and a maximum of 5.5 percent inert material.
 1. Color: green.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive plants for compliance with requirements and conditions affecting installation and performance.
 - 1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.
 - 2. Do not mix or place soils and soil amendments in frozen, wet, or muddy conditions.
 - 3. Suspend soil spreading, grading, and tilling operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
 - 4. Uniformly moisten excessively dry soil that is not workable and which is too dusty.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Commissioner and replace with new planting soil.

3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities and turf areas and existing plants from damage caused by planting operations.
- B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.
- C. Lay out individual shrub locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Commissioner's acceptance of layout before excavating or planting. Make minor adjustments as required.
- D. Wrap shrubs with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during digging, handling, and transportation.

3.3 PLANTING AREA ESTABLISHMENT

- A. Loosen subgrade of planting areas to a minimum depth of 12 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off property.
 - 1. Thoroughly blend planting soil off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil. All amendments shall be thoroughly incorporated into the mixture to assure uniform distribution.
 - a. Bring to pH levels of 6.0 (minimum) to 6.8. pH shall be verified by testing.

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- b. Lower pH levels by using elemental sulfur product. Copper sulfate may not be used to lower pH.
 - c. Additional amendments shall be mixed into the planting soil as recommended by the testing laboratory and as approved by the Commissioner for each plant type and condition of installation.
 - d. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
2. Spread planting soil to a depth of 12 inches but not less than required to meet finish grades after natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.
- a. Spread approximately one-half the thickness of planting soil over loosened subgrade. Mix thoroughly into top 4 inches of subgrade. Spread remainder of planting soil.
- B. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.
- C. Before planting, obtain Commissioner's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.
- D. Application of Mycorrhizal Fungi: At time directed by Commissioner, broadcast dry product uniformly over prepared soil at application rate indicated by manufacturer.

3.4 EXCAVATION FOR SHRUBS

- A. Planting Pits and Trenches: Excavate circular planting pits with sides sloping inward at a 45-degree angle. Excavations with vertical sides are not acceptable. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil to prevent settling. Scarify sides of planting pit smeared or smoothed during excavation.
1. Excavate approximately three times as wide as ball diameter for balled and burlapped container-grown stock.
 2. Do not excavate deeper than depth of the root ball, measured from the root flare to the bottom of the root ball.
 3. If area under the plant was initially dug too deep, add soil to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
 4. Maintain required angles of repose of adjacent materials as shown on the Drawings. Do not excavate subgrades of adjacent paving, structures, hardscapes, or other new or existing improvements.
 5. Maintain supervision of excavations during working hours.
 6. Keep excavations covered or otherwise protected after working hours.
- B. Subsoil and topsoil removed from excavations may not be used as planting soil.
- C. Obstructions: Notify Commissioner if unexpected rock or obstructions detrimental to shrubs are encountered in excavations.

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1. Hardpan Layer: Drill 6-inch- diameter holes, 24 inches apart, into free-draining strata or to a depth of 10 feet, whichever is less, and backfill with free-draining material.
- D. Drainage: Notify Commissioner if subsoil conditions evidence unexpected water seepage or retention in tree or shrub planting pits.

3.5 PLANTING AREA MULCHING

- A. Mulch backfilled surfaces of planting areas and other areas indicated.
 1. Organic Mulch in Planting Areas: Apply 3-inch average thickness of organic mulch extending 12 inches beyond edge of individual planting pit or trench and over whole surface of planting area, and finish level with adjacent finish grades. Do not place mulch within 3 inches of trunks or stems.

3.6 PLANT MAINTENANCE

- A. Maintain plantings by pruning, cultivating, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings.
- B. Watering, at least once per week.
- C. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.

3.7 CLEANUP AND PROTECTION

- A. During planting, keep adjacent paving and construction clean and work area in an orderly condition.
- B. Protect plants from damage due to landscape operations and operations of other contractors and trades. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged plantings.
- C. After installation and before Substantial Completion, remove nursery tags, nursery stakes, tie tape, labels, wire, burlap, and other debris from plant material, planting areas, and Project site. Nursery tags and a complete list of plants installed shall be furnished to the Commissioner.

3.8 DISPOSAL

- A. Remove surplus soil and waste material including excess subsoil, unsuitable soil, trash, and debris and legally dispose of them off City of New York's property.

END OF SECTION 329300

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SECTION 329600 - TRANSPLANTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

- A. Section includes transplanting existing on-site trees by tree spade or digging.
- B. Related Requirements:
 - 1. Section 015639 "Temporary Tree and Plant Protection" for protecting, trimming, pruning, repairing, and replacing existing trees to remain that interfere with, or are affected by, execution of the Work.
 - 2. Section 311000 "Site Clearing" for protection of existing trees and plantings, topsoil stripping and stockpiling, and site clearing.
 - 3. Section 329300 "Plants" for planting soil, organic mulch and mycorrhizal fungi.

1.3 DEFINITIONS

- A. General: See definitions in ANSI A300 (Part 6) and in ANSI Z60.1 pertaining to field-grown trees, except as otherwise defined in this Section.
- B. Caliper: Diameter of a trunk as measured by a diameter tape at a height 6 inches above the root flair for trees up to, and including, 4-inch size at this height; and as measured at a height of 12 inches above the root flair for trees larger than 4-inch size.
- C. DBH: Diameter breast height; diameter of a trunk as measured by a diameter tape [at a height 54 inches above the ground line for trees with caliper of 8 inches or greater as measured at a height of 12 inches above the root flair.
- D. Root-Ball Depth: Measured from bottom of trunk flare to the bottom of root ball.
- E. Root-Ball Width: Measured horizontally across the root ball with an approximately circular form or the least dimension for non-round root balls, not necessarily centered on the tree trunk, but within tolerance according to ANSI Z60.1.
- F. Root Flare: Also called "trunk flare." The area at the base of the tree's stem or trunk where the stem or trunk broadens to form roots; the area of transition between the root system and the stem or trunk.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.
 - 1. Review methods and procedures related to transplanting work include, but are not limited to, the following:
 - a. Construction schedule. Verify availability of materials, personnel, equipment, and unimpeded access needed to make progress and avoid delays.
 - b. Tree and plant protection.
 - c. Tree maintenance.
 - d. Arborist's responsibilities.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Samples for Verification: For each of the following:
 - 1. Slow-Release Watering Device: One unit of each size required.
- C. Pruning Schedule: Written schedule prepared by arborist detailing scope and extent of pruning each tree in preparation for and subsequent to transplanting.
 - 1. Species and size of plant.
 - 2. Location on site plan. Include unique identifier for each.
 - 3. Reason for pruning.
 - 4. Seasonal limitations on pruning.
 - 5. Preparatory Pruning: Time schedule and description of preparatory pruning to be performed.
 - a. Indicate time in months preceding the extraction of the tree.
 - b. Indicate diameter of root ball and depth of root pruning for each tree.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified tree-service firm and arborist. Include list of similar projects completed by Installer demonstrating Installer's capabilities and experience. Include project names, addresses, and year completed, and include names and addresses of owners' contact persons.
- B. Certification: From arborist, certifying that transplanted trees have been protected during construction and that trees were promptly and properly treated and repaired when damaged.
- C. Maintenance Recommendations: From arborist, recommended procedures (for a complete calendar year) to be established by City of New York for care and protection of trees after completing the Work for a complete calendar year.
 - 1. Submit before completing the Work.

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- D. Existing Conditions: Documentation of existing trees indicated to be transplanted, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.
 - 1. Use sufficiently detailed color photographs or video recordings. Color shall accurately depict hue condition of foliage and bark.
 - 2. Include drawings and notations to indicate specific wounds and damage conditions of each tree designated to be transplanted.
- E. Tree-Transplanting Program: Submit before work begins.
- F. Sample Warranties: For special warranties.
- G. Tree-maintenance reports.

1.7 QUALITY ASSURANCE

- A. Tree-Service Firm Qualifications: An experienced landscaping contractor or tree-moving firm that has successfully completed transplanting work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of the Work.
 - 1. Arborist Qualifications: Certified Arborist as certified by ISA.
- B. Tree-Transplanting Program: Prepare a written plan by arborist for transplanting trees for the whole Project, including each phase or process, tree maintenance, and protection of surrounding materials during operations. Describe in detail the materials, methods, and equipment to be used for each phase of the transplanting work.
 - 1. Include transplanting times appropriate for each species at the Project location.
 - 2. Include a transplanting schedule for each species to be transplanted, coordinated with the Project schedule.
 - 3. Include site plans clearly marked to show tree-moving routes from extraction to planting locations. Indicate proposed equipment, weight, and turning radii.
 - 4. Show details of temporary protective barriers where needed.
 - 5. Include care and maintenance provisions and eventual removal of tree stabilization.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of conformance with state and federal laws if applicable.
- B. Bulk Materials:
 - 1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or trees.
 - 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.

3. Accompany each delivery with appropriate certificates.
- C. Protect bark, branches, and root systems from sun scald, drying, wind burn, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees in such a manner as to destroy their natural shape.
- D. Completely cover foliage when transporting trees while they are in foliage.
- E. Handle trees by root ball. Do not drop trees.
- F. Move trees after preparations for planting have been completed, and install immediately. If planting is delayed more than six hours after moving, set trees in their appropriate aspect (sun, filtered sun, or shade), protect from weather and mechanical damage, and keep roots moist.

1.9 FIELD CONDITIONS

- A. Field Measurements: Verify final grade elevations and final locations of trees and construction contiguous with trees by field measurements before proceeding with transplanting work. Perform transplanting only after finish grades are established.
- B. Seasonal Restrictions: Transplant trees during the following in-season periods:
 1. Deciduous Trees: From March 1st to May 1st and from October 1st to December 15th.
 2. Evergreen Trees: From April 1st to May 15th and from September 1st to October 15th.
 3. Or as approved by the Commissioner.
- C. Weather Limitations: Proceed with transplanting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Do not transplant during excessively wet or frozen conditions. Apply products during favorable weather conditions according to manufacturer's written instructions and warranty requirements.
- D. Coordination with Turf Areas (Lawns): Perform transplanting before planting turf areas unless otherwise indicated.
 1. When transplanting after planting turf areas, protect turf areas, and promptly repair damage caused by transplanting operations.
- E. Coordination with Planting Beds: Perform transplanting before planting bedded areas unless otherwise indicated.
 1. When transplanting after planting bedded areas, protect bedding plants, and promptly repair damage caused by transplanting operations.

1.10 WARRANTY

- A. Installer's Special Warranty: Tree-service firm agrees to repair or replace trees and related materials that fail within specified warranty period.

1. Failures include, but are not limited to, the following:
 - a. Death and unsatisfactory growth except for defects resulting from abuse, lack of adequate maintenance, or neglect by City of New York, or incidents that are beyond Contractor's control.
 - b. Death and unsatisfactory growth is defined as more than 25 percent dead or in an unhealthy condition or failure to meet general performance requirements at end of warranty period.
 - c. Structural failures including trees falling or blowing over.
 - d. Faulty performance of materials and devices related to tree plantings including tree stabilization and watering devices.
2. Warranty Periods from Date of Transplanting Completion:
 - a. As indicated in General Conditions, Amendment to General Conditions, Schedule B, Guarantees and Warranties.
3. Include the following remedial actions as a minimum:
 - a. Remove dead trees and trees with unsatisfactory growth at end of warranty period; replace when directed.
 - b. A limit of one replacement of each tree will be required except for losses or replacements due to failure to comply with requirements.
 - c. Replace materials and devices related to tree plantings.
 - d. Provide extended warranty for period equal to original warranty period, for replaced trees.

1.11 MAINTENANCE SERVICE

- A. Initial Maintenance Service: Provide tree maintenance by skilled employees of tree-service firm and as required in Part 3. Begin maintenance immediately after trees are installed and continue until plantings are acceptably healthy and well established but for not less than maintenance period below.
 1. Maintenance Period: 24 months from date of acceptance of phase of construction.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Transplanted trees shall be healthy and resume vigorous growth within 18 months of transplanting without dieback due to defective extracting, handling, planting, maintenance, or other defects in the Work.

2.2 PLANTING MATERIALS

- A. Backfill Soil: Planting soil of suitable moisture content and granular texture for placing and compacting in planting pit around tree, and free of stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth.
 - 1. Planting Soil: Planting soil as specified in Section 329300 "Plants".

2.3 TREE-STABILIZATION MATERIALS

- A. Trunk-Stabilization Materials:
 - 1. Upright and Guy Stakes: White cedar with bark attached, 3 inch diameter by 8 feet long for calipers up to 3 ½ inch and 10 feet long for trees over 3 ½ inch caliper., pointed at one end.
 - 2. Tree-Tie Webbing: UV-resistant polypropylene or nylon webbing.

2.4 WATERING DEVICES

- A. Slow-Release Tree Irrigation Bag: Standard product manufactured for drip-irrigation of plants and emptying its water contents over a period of 6 to 10 hours; 20 gallon capacity, manufactured from UV-light stabilized nylon-reinforced polyethylene sheet, PVC, or HDPE plastic.

2.5 MISCELLANEOUS PRODUCTS

- A. Organic Mulch: Shredded bark as specified in Section 329300 "Plants."
- B. Burlap: Non-synthetic, biodegradable.
- C. Mycorrhizal Fungi Inoculant: Mycorrhizal Fungi as specified in Section 329300 "Plants."
- D. Fertilizer Tablets: Nutrient analysis of 12-8-8 and contain a minimum twelve percent (12%) humic acid by weight, biostimulants derived from sea kelp, amino acids, and a wetting agent derived from *Yucca schidigera*. Tablets shall contain a minimum 650,000 each of the following beneficial bacteria: nitrogen fixing, phosphorus solubilizing, and growth promoting.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross transplanting areas.

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- B. For the record, prepare written report, endorsed by arborist, listing conditions detrimental to transplanting work and tree protection and health.
- C. Proceed with transplanting only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, other facilities, turf areas, and other plants and planting areas from damage caused by transplanting operations.
- B. Locate and clearly identify trees for transplanting. Flag each tree at 54 inches above the ground.
- C. Lay out individual transplant locations and areas for multiple plantings. Stake locations, outline areas, adjust locations when requested, and obtain Commissioner's acceptance of layout before transplanting. Make minor adjustments as required.
- D. Wrap trees with burlap fabric over trunks, branches, stems, twigs, and foliage to protect from wind and other damage during extracting, handling, and transporting.

3.3 PREPARATORY PRUNING

- A. Root Pruning: Perform preparatory root pruning under direction of arborist as far in advance of extracting each tree as the Project Schedule allows.
 - 1. Dig exploratory pits or trench by hand or with air spade around perimeter of tree at indicated root-ball width to determine locations of main lateral roots.
 - 2. Dig trench by hand or with tree spade around perimeter of tree at indicated root-ball width to the depth of the root system. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
 - 3. Root-Ball Width: Minimum 9 inches of root-ball diameter, or least dimension for non-round root balls, for each inch of tree caliper being transplanted.
 - 4. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking.
 - 5. Use narrow-tine spading forks to comb soil to expose roots with minimal damage to root system.
 - 6. Cut exposed roots manually with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
 - 7. Do not paint or apply sealants on cut root ends.
 - 8. Backfill trench with excavated soil.
- B. Crown Pruning (Tip Pruning):
 - 1. Do not perform preparatory crown pruning (tip pruning).
 - 2. Perform preparatory crown pruning as directed by arborist. Follow procedures as specified in "Crown Pruning" Article.

3.4 EXCAVATION AND PLANTING EQUIPMENT

- A. Tree Spade: Track-mounted mechanized tree mover; sized according to manufacturer's size recommendation for each tree being transplanted.

3.5 EXCAVATING PLANTING PITS

- A. General: Excavate under supervision of the arborist.
 - 1. Excavate planting pits or trenches with sides sloping. Trim perimeter of bottom leaving center area of bottom raised slightly to support root ball and assist in drainage away from center. Do not further disturb base. Ensure that root ball will sit on undisturbed base soil. Scarify sides of planting pit smeared or smoothed during excavation.
 - 2. Excavate approximately three times as wide as root ball.
 - 3. Keep excavations covered or otherwise protected until replanting trees.
- B. Topsoil removed from excavations may be used as planting soil.
- C. Obstructions: Notify Commissioner if unexpected rock or obstructions detrimental to trees are encountered in excavations.
 - 1. Hardpan Layer: Drill 6-inch diameter holes, 24 inches apart, into free-draining strata or to a depth of 10 feet, whichever is less, and backfill with free-draining material.
- D. Seepage: Notify Commissioner if subsoil conditions evidence unexpected water seepage into tree-planting pits.
- E. Drainage: Fill planting pit or trench with 6 inches of water and time the infiltration rate of the soil. If the drainage rate is less than 0.25 inch per hour, notify Commissioner to determine need for subsurface drainage.

3.6 EXTRACTING TREES

- A. General: Extract trees under supervision of the arborist.
- B. Orientation Marking: Mark the north side of each tree with non-permanent paint before extracting.
- C. Root-Ball Width: Minimum 10 inches of root-ball diameter, or least dimension for non-round root balls, for each inch of tree caliper being transplanted.
 - 1. Out-of-Season Planting: When approved by the Commissioner, if planting before or after the in-season period for tree, provide a minimum root-ball diameter of 12 inches for each inch of tree caliper being transplanted.
- D. Root-Ball Depth: As determined by the arborist for each species and size of tree and for site conditions at original and planting locations.
- E. Digging:

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1. Dig and clear a pit by hand or with tree spade to the depth of the root system. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
 2. Use narrow-tine spading forks to comb soil to expose roots with minimal damage to root system.
 3. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking.
 4. Cut exposed roots manually with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not paint or apply sealants on cut root ends.
 5. Temporarily support and protect exposed roots from damage until they are permanently redirected and covered with soil. Cover roots with burlap and keep them moist until planted.
- F. Extracting with Tree Spade: Use the same tree spade to extract the tree as will be used to transport and plant the tree.
1. Do not use tree spade to move trees larger than the manufacturer's maximum size recommendation for the tree spade being used.
 2. When extracting the tree, center the trunk within the tree spade and move tree with a solid ball of earth.

3.7 PLANTING

- A. Planting Standard: Perform planting according to ANSI A300 (Part 6) unless otherwise indicated.
- B. Before planting, verify that root flare is visible at top of root ball. If root flare is not visible, remove soil in a level manner from the root ball to where the top-most root emerges from the trunk. After soil removal to expose the root flare, verify that root ball still meets size requirements.
- C. Ensure that root flare is visible after planting.
- D. Remove injured roots by cutting cleanly; do not break. Do not paint or apply sealants on cut root ends.
- E. Orientation: Position the tree so that its north side, marked before extracting, is facing north in its new location; unless facing of tree is otherwise directed by the Commissioner.
- F. Set tree plumb and in center of planting pit with bottom of root flare 1 inch above adjacent finish grades.
 1. Use specified backfill soil for backfill.
 2. If area under the tree was initially dug too deep, add backfill to raise it to the correct level and thoroughly tamp the added soil to prevent settling.
 3. After placing some backfill around root ball to stabilize plant, begin backfilling.
 4. Backfill around root ball in layers, tamping to settle soil and eliminate voids and air pockets. When planting pit is approximately one-half filled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
 5. Redirect exposed root ends downward in backfill areas where possible. Hand-expose roots as required to bend and redirect them without breaking. If encountered immediately

- adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches back from new construction and as required for root pruning.
6. Add mycorrhizal fungi inoculants to top 6 to 8 inches of backfill in each planting pit; thorough mix to distribute. Application rate as per manufacturer's recommendation or as directed by arborist.
 7. Place planting tablets in each planting pit within the top 4 inches of backfill; in amounts recommended by manufacturer or as directed by arborist. Place tablets beside the root ball about 1 inch (25 mm) from root tips; do not place tablets in bottom of the hole.
 8. Continue backfilling process. Water again after placing and tamping final layer of soil.
- G. **Planting with Tree Spade:** Use the same tree spade for planting as was used to extract and transport the tree. Do not use tree spade for trees larger than the manufacturer's maximum size recommendation for the tree spade being used.
- H. **Slopes:** When planting on slopes, set the tree so the root flare on the uphill side is flush with the surrounding soil on the slope; the edge of the root ball on the downhill side will be above the surrounding soil. Apply enough soil to cover the downhill side of the root ball.

3.8 CROWN PRUNING

- A. Prune branches as directed by arborist.
1. Prune to remove only injured, broken, dying, or dead branches. Do not prune for shape.
 2. Do not remove or reduce living branches to compensate for root loss caused by cutting root system or to improve natural tree form.
 3. Pruning Standards: Perform pruning according to ANSI A300 (Part 1).
- B. Unless otherwise directed by arborist and acceptable to Commissioner, do not cut tree leaders.
- C. Cut branches with sharp pruning instruments; do not break or chop.
- D. Do not paint or apply sealants to wounds.
- E. Provide subsequent maintenance during Contract period as recommended by arborist.
- F. Chip removed branches and stockpile in areas approved by Commissioner or dispose of off-site.

3.9 TREE STABILIZATION

- A. **Trunk Stabilization by Upright Staking and Tying:** Install trunk stabilization as follows unless otherwise indicated on Drawings or directed by arborist.
1. **Upright Staking and Tying:** Stake only as required to prevent wind tip out. Use a minimum of two stakes of length required to penetrate at least 36 inches for trees under 3 ½ inch caliper and 48 inches for trees over 3 ½ inch caliper below bottom of backfilled excavation. Set stakes vertical and space to avoid penetrating root balls or root masses.
 2. Support trees with bands of flexible ties at contact points with tree trunk. Allow enough slack to avoid rigid restraint of tree.

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3.10 MULCHING

- A. Organic Mulch: Apply 2-inch thickness of organic mulch extending 12 inches beyond edge of individual planting pit and over whole surface of planting area, and finish level with adjacent finish grades. Do not place mulch within 3 inches of trunks or stems.

3.11 INSTALLING SLOW-RELEASE WATERING DEVICE

- A. Provide one device for each tree.
- B. Place device on top of the mulch at base of tree and fill with water according to manufacturer's written instructions.

3.12 TREE MAINTENANCE

- A. Perform tree maintenance as recommended by arborist. Maintain arborist observation of transplanting work.
- B. Maintain trees by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Treat as required to keep trees free of insects and disease.
- C. Fill areas of soil subsidence with backfill soil. Replenish mulch materials damaged or lost in areas of subsidence.
- D. Use integrated pest management practices as required to keep tree materials, planted areas, and soils free of pests and pathogens or disease. Treatments include physical controls such as hosing off foliage and mechanical controls such as traps.

3.13 REPAIR AND REPLACEMENT

- A. General: Repair or replace transplanted trees and other plants indicated to remain or be relocated that are damaged by construction operations, in a manner recommended by the arborist and approved by Commissioner.
 - 1. Submit details of proposed pruning and repairs.
 - 2. Perform repairs of damaged trunks, branches, and roots within 24 hours according to arborist's written instructions.
 - 3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Commissioner.
- B. Remove and replace trees that are more than **25** percent dead or in an unhealthy condition or are damaged during construction operations that Commissioner determines are incapable of restoring to normal growth pattern.
 - 1. Provide new trees of same size as those being replaced for each tree.

2. Species of Replacement Trees: Same species being replaced unless alternative species is approved in writing by Commissioner.

3.14 CLEANUP AND PROTECTION

- A. During transplanting, keep adjacent paving and construction clean and work area in an orderly condition.
- B. Protect trees from damage due to transplanting operations and operations of other contractors and trades. Maintain protection during transplanting and maintenance periods. Treat, repair, or replace damaged plantings.
- C. After planting and before Substantial Completion of phase remove tags, markings, tie tape, labels, and other debris from transplanted trees, planting areas, and Project site.

3.15 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Except for materials indicated to be recycled, remove surplus soil, excess excavated material, waste materials, displaced plants, trash, and debris, and legally dispose of them off City of New York's property.

END OF SECTION 329600

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SECTION 330121 - WELL TESTING

PART 1 GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. Submersible Well Pump: Section 332001.

1.02 SUBMITTALS

- A. Contract Closeout Submittals:
 - 1. Test Results: Submit 3 copies of the final yield and recovery tests.
 - 2. Well Report: Submit 3 copies of a report describing the construction and condition of the well. Include size and depth of well, type of construction (well in rock, gravel packed, etc.), condition and length of well casing, and condition of the well screen where applicable.

1.03 QUALITY ASSURANCE

- A. Worker's Qualifications: The person supervising the Work of this Section and the workers actually performing the well work shall be personally experienced in well construction.

1.04 PROJECT CONDITIONS

- A. The existing irrigation supply well is 6 inches in diameter and 238 feet deep. Nominal capacity is 45 gallons per minute. Confirm at Site.
- B. Equipment presently installed: 15' of 6" diameter 0.020 slot stainless steel well screen.

PART 2 PRODUCTS

2.01 TEMPORARY EQUIPMENT AND MATERIALS

- A. Submersible pump capable of completing a constant rate 8-hour pumping test at a rate of at least 75 gpm.
- B. Power to operate the pump.
- C. Flowmeter and Throttling Valve: Type and size capable of accurately measuring rates of flow over the entire range of testing.
- D. Discharge Piping: Sufficient size and length to conduct pumped water to an acceptable drainage course.
- E. Method of controlling and measuring flow during pumping test.

PART 3 EXECUTION

3.01 PREPARATION

- A. Remove well cap and check well in the presence of the Commissioner's Representative for determination of whether any obstructions exist. Remove obstructions which interfere with the Work of this Section.
- B. Flush and redevelop the existing well that was installed approximately 10 months ago by a qualified driller. When redevelopment has been successfully completed, notify the Commissioner's Representative that the well is ready for the yield test. Make certain that the water level in the well has returned to its pretest static level following the redevelopment.
- C. Collect and record data on the construction and condition of the well.

3.02 CONSTANT RATE PUMPING TEST

- A. An 8-hour constant rate pumping test will be conducted on the well. A temporary submersible pump will be supplied, installed, and removed following the pumping test. The pumping test will be conducted at a rate of 75 gpm.
- B. Discharge will be directed at least 200 feet from the well or at a sufficient distance from the pumping well so as not to interfere with the pumping test as determined by the Commissioner's Representative.
- C. An access port and tubing will be installed to allow for the installation and retrieval of an m-scope and pressure transducer into the well to monitor well levels.
- D. The pumping test will not be conducted during precipitation or immediately following a heavy (greater than 1-inch) precipitation event.
- E. Drawdown and recovery data will be collected during pumping and recovery periods. Recovery will be monitored until 90 percent recovery is achieved or one day, whichever is less.
- F. The 75 gpm flow rate for the constant rate pumping test will be constant during the entire pumping period and will be recorded at 1 hour intervals throughout the 8-hour pumping test.

3.03 RESTORATION

- A. Remove temporary pumping equipment and appurtenances.

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- B. Restore the well and the site to a condition equal to or better than that prior to the Work.

END OF SECTION 330121

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SECTION 331103 - COPPER TUBING AND FITTINGS

PART 1 GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. Earthwork: Section 312000.
- B. Valves and Valve Boxes: Section 220523.

1.02 SUBMITTALS

- A. Product Data: Manufacturer's catalog sheets and specifications for each pipe and fitting type.

PART 2 PRODUCTS

2.01 MATERIAL

- A. Tubing: ASTM B 88, Type K soft temper unless otherwise noted on the drawings.
- B. Fittings: Cast Bronze, Flared Type; ANSI/ASME B16.26.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Laying Tubing:
 - 1. Minimum Depth: 4'-6" (unless otherwise indicated on drawings) measured from finish or existing grade, whichever is lower.
 - 2. Install valves and fittings where indicated. Lay tubing on a continuous slope to a high point where air can be released.
- B. Flaring and Assembling Tubing:
 - 1. Cut tube ends square.
 - 2. Remove all burrs and metal chips.
 - 3. Slip coupling nut on tubing.
 - 4. Flare tubing ends, use impact or mechanical type flaring tools in accordance with manufacturers' recommendations.
 - 5. Assemble tubing fittings and tighten coupling nuts with two wrenches, one on the nut and one on the fitting.
- C. Protecting Tubing: Securely close all open ends of tubing and fittings with removable plugs whenever directed by the Commissioner.

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D. Testing:

1. Before the tubing, valves or other appurtenances are covered, test to 150 pounds hydrostatic pressure. Protect tubing from movement during test.
2. Remove all defective tubing, valves, and fittings. Replace with sound items and make all leaky joints tight. Repeat the test after the repairs are made until no leaks develop when the line is subjected to the required pressure for a period of 30 minutes.
3. All tests shall be made in such manner as the Commissioner shall direct and tests shall be performed in his presence.

E. Disinfection: After completion of the hydrostatic test, disinfect all piping and fittings in accordance with Section 331300.

END OF SECTION 331103

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SECTION 331220 - GROUND HYDRANTS

PART 1 GENERAL

1.01 SUMMARY

- A. The contractor shall furnish and install a Ground Hydrant, all piping, fittings and other sundries necessary to connect the water lines as shown on plans, to the satisfaction of the Engineer.

1.02 RELATED DOCUMENTS

- A. Copper Tubing and Fittings: Section 331103

1.03 SUBMITTALS

- A. Product Data: Catalog cuts of yard hydrants and appurtenances.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver Ground Hydrant (GH) properly protected, and undamaged.
- B. Properly protect GH so as to prevent damage to the GH or the introduction of foreign material into the GH. For the purpose of protecting GH from pre-installation contamination, GH shall be shipped to job site with suitable caps or plugs. Caps shall not be removed until just before installation.
- C. Examine GH before installation. Do not install GH that is found to be defective.

PART 2 PRODUCTS

2.01 GROUND HYDRANTS

- A. 3/4" Diameter Ground Hydrant shall be Type Z-1360-DP14-HD-NB-RK-VB with integral vacuum breaker as manufactured by Zurn Industries Inc., Hydromechanics Division, Erie, PA., or approved equal. Hose connection shall be three quarter inch (3/4").
- B. Acceptable Manufacturers:
 - 1. Zurn industries, Inc.
 - 2. J.R. Smith
 - 3. Watts
 - 4. Approved Equal

2.02 MISCELLANEOUS MATERIALS

- A. Drainage Stone: No. 2 Broken stone.

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PART 3 EXECUTION

3.01 INSTALLATION

- A. Hydrant is encased, ground hydrant for flush-with-grade installation, complete with bronze casing, polished nickel bronze box, all bronze interior parts, bronze seat and replaceable seat washer, non-turning operating rod with free-floating compression closure valve with $\frac{3}{4}$ " connection. Polished nickel-bronze box shall have a scoriated heavy-duty cover with operating key lock and "Water" cast on cover. Depth of bury is two (2) feet minimum for both size Ground Hydrant. Two keys are to be supplied to the Commissioner.

END OF SECTION 331220

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SECTION 331300 – FLUSHING OF WATER UTILITY DISTRIBUTION

PART 1 GENERAL

1.01 QUALITY ASSURANCE

- A. Flush water lines to remove all residue and debris.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.01 WATER MAINS

- A. Flush mains with clear water at a minimum rate of 2.5 fps. See Table 1.

PIPE DIAMETER (INCHES)	FLUSHING RATE GPM @ 2.5 fps	HYDRANT OPENINGS @ 40 psi
2	25	one - 2-1/2
4	100	one - 2-1/2
6	220	one - 2-1/2
8	390	one - 2-1/2
10	610	one - 2-1/2
12	880	one - 2-1/2
14	1200	two - 2-1/2
16	1570	two - 2-1/2
18	1985	two - 2-1/2
24	3525	one - 4-1/2 and one - 2-1/2

END OF SECTION 331300

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SECTION 332001 - SUBMERSIBLE WELL PUMP

PART 1 GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. Motor Controllers: Section 260221.
- B. Well Testing: Section 330121.

1.02 SUBMITTALS

- A. Product Data: Catalog sheets, specifications and installation instructions for each size pump.
- B. Schedule: Complete pump schedule listing manufacturer's name, type, model number and size.
- C. Quality Control Submittals:
 - 1. Test Reports: Submit performance curves for each pump, showing capacity in gallons per minute, brake horsepower and efficiency from free delivery to shut-off head. Curves shall be based on factory tests by the manufacturer, in accordance with procedures recommended by the Hydraulic Institute.
- D. Contract Closeout Submittals:
 - 1. Operation and Maintenance Data: Deliver 2 copies, covering the installed products, to the Commissioner.

1.03 QUALITY ASSURANCE

- A. Worker's Qualifications: The person supervising the Work of this Section and the workers actually performing the well work shall be personally experienced in well construction.
- B. Manufacturer's Qualifications: The manufacturer providing the material or equipment specified in this Section must, for the past five (5) years, have been regularly engaged in the manufacture of material or equipment similar in type to that required for this Project. Such similar materials or equipment provided by the manufacturer must have been in satisfactory service for not less than five (5) years.
 - 1. Furnish to the Commissioner manufacturer's qualifications.

1.04 WARRANTY

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- A. Manufacturer's standard form in which manufacturer agrees to repair or replace components or submersible well pump assembly that fail in materials or workmanship within specified warranty period.

- 1. Warranty Period: Two years from date of Substantial Completion.

PART 2 PRODUCTS

2.01 COMPANIES

- A. Grundfos Pumps Corp., 17100 West 118th Terrace, Olathe, Kansas 66061 (rep in NY: Hayes Pumps Inc., 295 Fairfield, NJ 07004 (973) 852-6603). (913) 227-3400, www.grundfos.com
- B. Deming Pumps; Crane Pumps & Systems, 420 Third Street, Piqua, OH 45356 (937) 778-8947, www.cranepumps.com.
- C. Gould Pumps, 2881 East Bayard Street, Seneca Falls, NY 13148, (800) 743-5700, www.goulds.com.
- D. Peerless Pump Company, PO Box 7026, Indianapolis, IN 46207, (800) 879-0182, www.peerlesspump.com.
- E. Franklin Electric, 400 E. Spring Street, Bluffton, IN 46714, (260) 824-2900, www.franklinpumps.com.
- F. Emerson Motor Company, 8110 W. Florissant Avenue, St. Louis, MO 63136, (888) 637-7333, www.emersonmotors.com.
- G. Approved Equal.

2.02 PUMP

- A. Pumping unit shall consist of a water lubricated motor and centrifugal pump suited to the conditions encountered in the well.
- B. Pumping unit shall be capable of pumping 85 gpm at a total dynamic head of 240 feet.
- C. Pump shall be 7.5 HP, 208 volts, 3 phase, hermetically sealed submersible type.
- D. Submersible pump, motor, and controller shall be a "package" unit as furnished by the manufacturer.
- E. Pumps of the same type shall be of the same manufacturer, with pump parts of the same size and type interchangeable.

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2.03 CONTROLS

- A. Provide motor control box with thermal overload protection and lightening arresstor as recommended by the manufacturer of the pumping unit. Controller to be variable frequency drive (VFD) controlled by pressure transducer at output of well.
- B. Provide a Hand-Off-Automatic selector switch in the cover of the control box.
- C. Attach ground wire from lightning arresstor to ¾" dia. x 10'-0" long copper clad ground rod adjacent to well house exothermically welded to #2 AWG ground wire.
- D. Provide pumps on/off electrodes.

2.04 SUBMERSIBLE CABLE

- A. Cable to be the type recommended by the pump manufacturer.

2.05 MOTORS

- A. Provide each submersible pump with a water lubricated motor.
- B. Motor size and capacity shall be sufficient to be non-overloading under any condition of operation.
- C. Motor shall be designed to operate with power source indicated on drawings.

2.06 DROP PIPE

- A. Drop pipe shall be standard weight galvanized steel.

2.07 METAL FABRICATIONS

- A. Except as shown or specified otherwise, the Work of this Section shall meet the requirements of the following:
 - 1. Design, Fabrication, and Erection: "Specification for Structural Steel Buildings, Allowable Stress Design and Plastic Design" adopted by the American Institute of Steel Construction, June 1, 1989 (AISC Specification).
 - a. Design and Fabrication of Cold-Formed Shapes: "Specification for the Design of Cold-Formed Steel Structural Members", by the American Iron and Steel Institute (AISI Specification).
 - 2. Welding: "Structural Welding Code - Steel, AWS D1.1", or "Structural Welding Code - Sheet Steel, AWS D1.3", by the American Welding Society (AWS Codes).
- B. Steel Shapes, Plates, and Bars: ASTM A 36.

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- C. Galvanized Steel Sheet: ASTM A 526, with G90 hot-dip process zinc coating complying with ASTM A 525.
- D. Anchors: Except where shown or specified, select anchors of type, size, style, grade, and class required for secure installation of metal fabrications. For exterior use and where built into exterior walls, anchors shall be galvanized or of corrosive-resistant materials.
 - 1. Threaded-Type Concrete Inserts: Galvanized ferrous casting, internally threaded to receive 3/4 inch diameter machine bolt; either malleable iron or cast steel.
- E. Shop Paint for Galvanized Steel: Epoxy zinc-rich primer; complying with MPI#20 and compatible with topcoat.
- F. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- G. Steel plates fabricated flat, free from warp or twist, and of required thickness and bearing area. Drill plates as required for anchor bolts and for grouting access. Furnish bearing plates where shown and where required for pie supported on masonry or concrete construction.

PART 3 EXECUTION

3.01 PRELIMINARY WORK

- A. Prior to pump installation, plumb well to determine if any obstructions exist.
- B. Remove all obstructions prior to pump installation.

3.02 INSTALLATION

- A. Install submersible pump unit, including drop pipe, control equipment and submersible cable in well.
- B. Install submersible cable in rigid ferrous metal conduit between well cap and control box.

3.03 FIELD QUALITY CONTROL

- A. After installation, run a field test of each pumping unit.
- B. Test period shall be eight hours for each pumping unit.
- C. Correct all defects and leave complete pumping units in satisfactory operating condition.

END OF SECTION 332001

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SUBMERSIBLE WELL PUMP

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SECTION 334100 - STORM UTILITY DRAINAGE PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Pipe and fittings.
 - 2. Catch basins.
 - 3. Channel drainage systems.
 - 4. Area drains.
 - 5. Cleanouts.
 - 6. Pipe outlets.
 - 7. Drywells.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings:
 - 1. Catch basins. Include plans, elevations, sections, details, frames, covers, and grates.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Do not store plastic pipe, and fittings in direct sunlight.
- B. Protect pipe, pipe fittings, and seals from dirt and damage.
- C. Handle catch basins according to manufacturer's written rigging instructions.

1.5 PROJECT CONDITIONS

- A. Interruption of Existing Storm Drainage Service: Do not interrupt service to facilities occupied by City of New York or others unless permitted under the following conditions and then only after arranging to provide temporary service according to requirements indicated:

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1. Notify City of New York no fewer than two days in advance of proposed interruption of service.
2. Do not proceed with interruption of service without City of New York's written permission.

PART 2 - PRODUCTS

2.1 HUB-AND-SPIGOT, DUCTILE-IRON SOIL PIPE AND FITTINGS

- A. Pipe and fittings: ASTM A 716, for push-on joints.
- B. Standard Fittings: AWWA C110, ductile or gray iron, for push-on joints.
- C. Gaskets: AWWA C111, rubber.
- D. Flange & Gland: ASTM A 716, for Flange & ASTM A 536 for Gland.

2.2 PE PIPE AND FITTINGS

- A. Corrugated PE Drainage Pipe and Fittings NPS 3 to NPS 10: AASHTO M 252M, Type S, with smooth waterway for coupling joints.
 1. Soiltight Couplings: AASHTO M 252M, corrugated, matching tube and fittings.
- B. Corrugated PE Pipe and Fittings NPS 12 to NPS 60: AASHTO M 294M, Type S, with smooth waterway for coupling joints.
 1. Soiltight Couplings: AASHTO M 294M, corrugated, matching pipe and fittings.

2.3 CONCRETE

- A. General: Cast-in-place concrete according to ACI 318, ACI 350/350R, and the following:
 1. Cement: ASTM C 150, Type II.
 2. Fine Aggregate: ASTM C 33, sand.
 3. Coarse Aggregate: ASTM C 33, crushed gravel.
 4. Water: Potable.
- B. Portland Cement Design Mix: 4000 psi minimum, with 0.45 maximum water/cementitious materials ratio.
 1. Reinforcing Fabric: ASTM A 185/A 185M, steel, welded wire fabric, plain.
 2. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (420 MPa) deformed steel.

2.4 CATCH BASINS

A. Standard Precast Concrete Catch Basins:

1. Description: ASTM C 478, precast, reinforced concrete, of depth indicated, with provision for sealant joints.
2. Base Section: 6-inch minimum thickness for floor slab and 4-inch minimum thickness for walls and base riser section, and separate base slab or base section with integral floor.
3. Riser Sections: 4-inch minimum thickness, 48-inch diameter, and lengths to provide depth indicated.
4. Top Section: Eccentric-cone type unless concentric-cone or flat-slab-top type is indicated. Top of cone of size that matches grade rings.
5. Joint Sealant: ASTM C 990, bitumen or butyl rubber.
6. Adjusting Rings: Interlocking rings with level or sloped edge in thickness and shape matching catch basin frame and grate. Include sealant recommended by ring manufacturer.
7. Grade Rings: Include two or three reinforced-concrete rings, of 6- to 9-inch total thickness, that match 24-inch- diameter frame and grate.
8. Steps: ASTM A 615/A 615M, deformed, 1/2-inch steel reinforcing rods encased in ASTM D 4101, PP, wide enough to allow worker to place both feet on one step and designed to prevent lateral slippage off step. Cast or anchor steps into sidewalls at 12- to 16-inch intervals. Omit steps if total depth from floor of catch basin to finished grade is less than 60 inches.
9. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.

B. Designed Precast Concrete Catch Basins: ASTM C 913, precast, reinforced concrete; designed according to ASTM C 890 for A-16 (ASSHTO HS20-44), heavy-traffic, structural loading; of depth, shape, and dimensions indicated, with provision for joint sealants.

1. Joint Sealants: ASTM C 990, bitumen or butyl rubber.
2. Adjusting Rings: Interlocking rings with level or sloped edge in thickness and shape matching catch basin frame and grate. Include sealant recommended by ring manufacturer.
3. Grade Rings: Include two or three reinforced-concrete rings, of 6- to 9-inch total thickness, that match 24-inch- diameter frame and grate.
4. Steps: ASTM A 615/A 615M, deformed, 1/2-inch steel reinforcing rods encased in ASTM D 4101, PP, wide enough to allow worker to place both feet on one step and designed to prevent lateral slippage off step. Cast or anchor steps into sidewalls at 12- to 16-inch intervals. Omit steps if total depth from floor of catch basin to finished grade is less than 60 inches.
5. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.

C. Frames and Grates: ASTM A 536, Grade 60-40-18, ductile iron designed for A-16, structural loading. Include 24-inch ID by 7- to 9-inch riser with 4-inch minimum width flange, and 26-inch- diameter flat grate with small square or short-slotted drainage openings.

1. Grate Free Area: Approximately 50 percent unless otherwise indicated.

2.5 CHANNEL DRAINAGE SYSTEMS

A. Wide, Level-Invert, Polymer-Concrete, Channel Drainage Systems:

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a. ACO USA,
East Sales Office – OH, 800 543 4764
 - b. Jay R. Smith, Mfg. Co.
30 Technology Parkway South, Suite 100, Norcross, GA 30092 (800) 424-3996
 - c. Zurn Plumbing Products Group.
1801 Pittsburgh Avenue, Erie, PA 16502, 1-855-663-9876
 - d. Approved equal.
2. Type: Modular system of channel sections, grates, and appurtenances; designed so grates fit into channel recesses without rocking or rattling.
 - a. Channel Sections: Wide, interlocking-joint, precast, polymer-concrete modular units with end caps. Include flat or rounded bottom, with level invert and with outlets in number, sizes, and locations indicated.
 - 1) Dimensions: 5-inch inside width and 11.69-inch invert depth. Include number of units required to form total lengths indicated.
 - 2) Frame: Not required.
 - b. Grates: Manufacturer's designation "medium duty," with slots or perforations, and of width and thickness that fit recesses in channel sections.
 - 1) Basis of Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
 - a) Urban Accessories
465 East 15th St., Tacoma Washington 98421, 877-487-0488
 - b) Iron Age Designs
2104 152nd St. Suite #4, Burien, WA 98166, (877) 418-3568
 - c) ACO USA
East Sales Office – OH, 800 543 4764
 - d) Approved equal.
 - 2) Material: Ductile iron.
 - 3) Locking Mechanism: Manufacturer's standard device for securing grates to channel sections.
 - c. Supports, Anchors, and Setting Devices: Manufacturer's standard unless otherwise indicated.

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- d. Channel-Section Joining and Fastening Materials: As recommended by system manufacturer.

2.6 AREA DRAIN

A. Cast-Iron, Medium-Sump, General-Purpose Area Drains:

1. Basis-of-Design Product: Subject to compliance with requirements, provide 2470C Area Drain as manufactured by JR Smith or comparable product by one of the following:
 - a. Jay R. Smith, Mfg. Co.
30 Technology Parkway South, Suite 100, Norcross, GA 30092 (800) 424-3996
 - b. Watts Water Technologies, Inc.
815 Chestnut Street, North Andover, MA 01845-6098, (978) 688-1811
 - c. Zurn Plumbing Products Group.
1801 Pittsburgh Avenue, Erie, PA 16502, 1-855-663-9876
 - d. Approved equal.
2. Body Material: Cast iron.
3. Dimension of Body: 12 inch by 14-inch rectangular.
4. Outlet: Bottom.

2.7 CLEAN OUT

A. Cleanouts:

1. Basis-of-Design Product: Subject to compliance with requirements, provide 4263G as manufactured by JR Smith or comparable product by one of the following:
 - a. Jay R. Smith, Mfg. Co.
30 Technology Parkway South, Suite 100, Norcross, GA 30092 (800) 424-3996
 - b. Watts Water Technologies, Inc.
815 Chestnut Street, North Andover, MA 01845-6098, (978) 688-1811
 - c. Zurn Plumbing Products Group.
1801 Pittsburgh Avenue, Erie, PA 16502, 1-855-663-9876
 - d. Approved equal.
2. Standard: ASME A112.36.2M, for threaded, adjustable housing cleanouts.
3. Size: Same as connected branch.
4. Type: Threaded, double-flanged.
5. Outlet Connection: Threaded.
6. Closure: Galvanized Cast-iron plug.
7. Frame and Cover Material and Finish: Galvanized Cast Iron.
8. Frame and Cover Shape: Round, with lifting device.
9. Top-Loading Classification: Heavy Duty.

2.8 PIPE OUTLETS

- A. Pipe Collar: Cast-in-place concrete.
- B. Stone Apron: Broken, irregularly sized and shaped, graded stone size no. 1, nominal size 3-1/2 to 1-1/2 inch with 100 percent passing a 4 inch sieve, 90-100 percent passing a 3-1/2 inch sieve, 25-60 percent passing a 2-1/2 inch sieve, 0-15 percent passing a 1-1/2 inch sieve and 0-5 percent passing a 3/4 inch sieve.
- C. Separation Geotextile: Woven geotextile fabric, manufactured for separation applications, made from polyolefins or polyesters; with elongation less than 50 percent; complying with AASHTO M 288 and the following, measured per test methods referenced:
 - 1. Survivability: Class 2; AASHTO M 288.
 - 2. Grab Tensile Strength: 247 lbf; ASTM D 4632.
 - 3. Sewn Seam Strength: 222 lbf; ASTM D 4632.
 - 4. Tear Strength: 90 lbf; ASTM D 4533.
 - 5. Puncture Strength: 90 lbf; ASTM D 4833.
 - 6. Apparent Opening Size: No. 60 sieve, maximum; ASTM D 4751.
 - 7. Permittivity: 0.02 per second, minimum; ASTM D 4491.
 - 8. UV Stability: 50 percent after 500 hours' exposure; ASTM D 4355.

2.9 DRY WELLS

- A. Description: ASTM C 913, precast, reinforced, perforated concrete rings. Include the following:
 - 1. Floor: Cast-in-place concrete.
 - 2. Cover: Liftoff-type concrete cover with cast-in lift rings.
 - 3. Wall Thickness: 4 inches minimum with 1-inch diameter or 1-by-3-inch- maximum slotted perforations arranged in rows parallel to axis of ring.
 - a. Total Free Area of Perforations: Approximately 15 percent of ring interior surface.
 - b. Ring Construction: Designed to be self-aligning.
 - 4. Filtering Material: ASTM D 448, Size No. 24, 3/4- to 2-1/2-inch washed, crushed stone or gravel.

PART 3 - EXECUTION

3.1 EARTHWORK

- A. Excavation, trenching, and backfilling are specified in Section 312000 "Earth Moving."

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3.2 PIPING INSTALLATION

- A. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground storm drainage piping. Location and arrangement of piping layout take into account design considerations. Install piping as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.
- B. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for use of lubricants, cements, and other installation requirements.
- C. Install fittings to accommodate changes in direction unless otherwise indicated. Use fittings for branch connections unless direct tap into existing sewer is indicated.
- D. Install proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.
- E. Install gravity-flow, nonpressure drainage piping according to the following:
 - 1. Install piping pitched down in direction of flow.
 - 2. Install piping NPS 6 and larger with restrained joints at tee fittings and at changes in direction. Use corrosion-resistant rods, pipe or fitting manufacturer's proprietary restraint system, or cast-in-place concrete supports or anchors.
 - 3. Install PE corrugated sewer piping according to ASTM D 2321.

3.3 PIPE JOINT CONSTRUCTION

- A. Join gravity-flow, nonpressure drainage piping according to the following:
 - 1. Join corrugated PE piping according to ASTM D 3212 for push-on joints.
 - 2. Join dissimilar pipe materials with nonpressure-type flexible couplings.

3.4 CLEANOUT INSTALLATION

- A. Install cleanouts and riser extensions from sewer pipes to cleanouts at grade. Use ductile iron soil pipe fittings in sewer pipes at branches for cleanouts and ductile iron soil pipe for riser extensions to cleanouts. Install piping so cleanouts open in direction of flow in sewer pipe.
- B. Set cleanout frames and covers in earth in cast-in-place concrete.

3.5 CATCH BASIN INSTALLATION

- A. Construct catch basins to sizes and shapes indicated.
- B. Set frames and grates to elevations indicated.

3.6 DRAIN INSTALLATION

- A. Install type of drains in locations indicated.
- B. Embed drains in concrete around bottom and sides as indicated.
- C. Fasten grates to drains.
- D. Set drain frames and covers with tops flush with pavement surface.

3.7 STORMWATER OUTLET INSTALLATION

- A. Construct riprap of broken stone, as indicated.
- B. Install outlets that spill onto grade, anchored with concrete, where indicated.

3.8 DRY WELL INSTALLATION

- A. Excavate hole to diameter of at least 6 inches greater than outside of stone pocket. Do not extend excavation into ground-water table.
- B. Install precast, concrete-ring dry wells according with the contract drawings.

3.9 CONCRETE PLACEMENT

- A. Place cast-in-place concrete according to ACI 318.

3.10 CONNECTIONS

- A. Make connections to existing piping and underground manholes.
 - 1. Use commercially manufactured wye fittings for piping branch connections. Remove section of existing pipe; install wye fitting into existing piping; and encase entire wye fitting, plus 6-inch overlap, with not less than 6 inches of concrete with 28-day compressive strength of 3000 psi.
 - 2. Make branch connections from side into existing piping, NPS 4 to NPS 20. Remove section of existing pipe, install wye fitting into existing piping, and encase entire wye with not less than 6 inches of concrete with 28-day compressive strength of 3000 psi.
 - 3. Make branch connections from side into existing piping, NPS 21 or larger, or to underground manholes and structures by cutting into existing unit and creating an opening large enough to allow 3 inches of concrete to be packed around entering connection. Cut end of connection pipe passing through pipe or structure wall to conform to shape of and be flush with inside wall unless otherwise indicated. On outside of pipe, manhole, or structure wall, encase entering connection in 6 inches of concrete for minimum length of 12 inches to provide additional support of collar from connection to undisturbed ground.

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- a. Use concrete that will attain a minimum 28-day compressive strength of 3000 psi unless otherwise indicated.
 - b. Use epoxy-bonding compound as interface between new and existing concrete and piping materials.
4. Protect existing piping, manholes, and structures to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.

3.11 IDENTIFICATION

- A. Materials and their installation are specified in Section 312000 "Earth Moving." Arrange for installation of green warning tape directly over piping and at outside edge of underground structures.
1. Use warning tape or detectable warning tape over ferrous piping.
 2. Use detectable warning tape over nonferrous piping and over edges of underground structures.

3.12 FIELD QUALITY CONTROL

- A. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.
1. Submit separate reports for each system inspection.
 2. Defects requiring correction include the following:
 - a. Alignment: Less than full diameter of inside of pipe is visible between structures.
 - b. Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
 - c. Damage: Crushed, broken, cracked, or otherwise damaged piping.
 - d. Infiltration: Water leakage into piping.
 - e. Exfiltration: Water leakage from or around piping.
 3. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
 4. Reinspect and repeat procedure until results are satisfactory.
- B. Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects.
1. Do not enclose, cover, or put into service before inspection and approval.
 2. Test completed piping systems according to requirements of authorities having jurisdiction.
 3. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours' advance notice.
 4. Submit separate report for each test.

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5. Gravity-Flow Storm Drainage Piping: Test according to requirements of authorities having jurisdiction, UNI-B-6, and the following:

- a. Exception: Piping with soiltight joints unless required by authorities having jurisdiction.
- b. Option: Test plastic piping according to ASTM F 1417.

C. Replace leaking piping using new materials, and repeat testing until leakage is within allowances specified.

3.13 CLEANING

A. Clean interior of piping of dirt and superfluous materials. Flush with water.

3.14 PROTECTION

A. Protect drains during remainder of construction period to avoid clogging with dirt or debris and to prevent damage from traffic or construction work.

B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

END OF SECTION 334100

WASTE CHARACTERIZATION REPORT

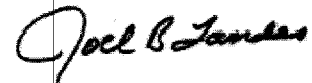
**Queens Botanical Garden
43-50 Main Street
Flushing, New York**

Prepared For:

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Prepared By:

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September 14, 2011
170150101



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FIGURES

Figure 1:	Site Location Map
Figure 2:	Boring Location Map

APPENDICES

Appendix A:	Soil Boring Logs
Appendix B:	Analytical Laboratory NYSDOH Certification
Appendix C:	Laboratory Analytical Reports

1.0 INTRODUCTION

Langan Engineering & Environmental Services, P.C. (Langan) prepared this Waste Characterization Report for the proposed improvements at Queens Botanical Gardens (QBG) located in Kissena Park Corridor of Flushing, Queens. The proposed improvements will encompass the entire site but focus on high-usage areas including the main entrance area (cherry circle) and turf areas within the oak alley. The waste characterization investigation included completion of soil borings and soil sampling for the proposed pathway improvements. The sampling was performed to provide waste characterization data to support offsite disposal of excavated soil and fill during construction. The waste characterization sampling event was completed on July 25 and 26, 2011.

2.0 BACKGROUND

2.1 Site Description

The Queens Botanical Garden (QBG) is located in the Kissena Park Corridor of Flushing, Queens and encompasses approximately 39 acres with 71,000 square feet (sq. ft.) of pathways. The site is a historic ash landfill according to the January 2002 Limited Subsurface Investigation Report prepared by Metcalf & Eddy of New York, Inc. The proposed improvements will encompass the entire site but focus on high-usage areas including the main entrance area (cherry circle) and turf areas within the oak alley.

2.2 Project Description

New pathways throughout the garden will be reconstructed and realigned to improve safety, access and pedestrian flow. The project will also incorporate improvements to drainage, irrigation, turf and site utilities within localized areas identified by the New York City Department of Design and Construction (NYCDDC) and QBG.

3.0 FIELD INVESTIGATION

The field investigation was conducted on July 25 and 26, 2011, and included completion of eleven soil borings (B-1 through B-11) and the collection of eleven grab and two composite soil samples. The investigation was performed to characterize site soils for soil management and waste disposal in areas of proposed development. The following is a summary of the environmental investigation activities.

3.1 Field Procedures

Soil borings were completed by Aquifer Drilling and Testing, Inc. (ADT) using a CME 240 track-mounted drilling rig under the supervision of a Langan field geologist. Eleven soil borings, identified as B-1 through B-11, were advanced to 8 feet below grade surface (bgs). Environmental samples were collected from 0-2 feet bgs. The investigation was performed concurrently with a Langan Geotechnical Investigation. A summary of the Geotechnical findings is provided separately in the Geotechnical Engineering Study Letter Report.

Soil samples collected from borings B-1 through B-11 were obtained using a stainless steel split spoon sampler. Non-disposable sampling equipment was decontaminated between samples. Soil samples retrieved from each boring were visually classified for soil type, grain size and texture. Each sample was screened for visual, olfactory, and instrumental evidence of anthropogenic impacts. Instrument screening for the presence of volatile organic compounds (VOCs) was performed with a photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp. Following sample collection, all borings were backfilled with soil cuttings and the surface cover was restored (i.e., asphalt patch consistent with the surface materials present at the Site). Boring logs documenting these observations are included as Appendix A. Boring locations are shown in Figure 2.

3.2 Waste Characterization Soil Sample Collection and Analysis

Waste characterization soil samples were collected according to general disposal facility requirements. Two 5-point composite samples were collected by homogenizing soil from the 0 to 2 foot interval between select borings. One grab sample was collected from each boring at the 0 to 2 foot interval. A soil sample collection summary is provided in Table 1.

Soil samples were collected into laboratory-supplied containers and were transported via courier service to York Analytical Laboratories, Inc. (York), a New York State Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP) certified laboratory in Stratford, Connecticut under standard chain-of-custody protocol. York's analytical laboratory NYSDOH certification documentation is provided in Appendix B.

Grab soil samples, B-1 (0-2') through B-11 (0-2'), were analyzed for total petroleum hydrocarbons (TPH) diesel range organics (DRO) and toxicity characteristics leaching procedure (TCLP) lead. Grab soil samples, WC-1 and WC-2, were analyzed for Target Compound List (TCL) VOCs by United States Environmental Protection Agency (EPA) Method 8260 and TCLP VOCs. Composite soils samples, WC-1 and WC-2, were analyzed for, TCL semi-volatile organic compounds (SVOCs) by EPA Method 8270, Resource Conservations Recovery Act (RCRA)-8 metals by EPA Method 6010, polychlorinated biphenyls (PCBs) by EPA Method 8081,

pesticides by EPA 8082, and herbicides by EPA 8151. Additionally, the composite samples were analyzed for TCLP SVOCs, TCLP pesticides and herbicides and TCLP metals.

4.0 OBSERVATIONS AND RESULTS

4.1 Subsurface Observations

The asphalt surface cover was generally underlain by dark brown to dark brown-grey fine and medium sand with some silt, wood, and gravel. Groundwater was encountered at depths ranging from 5 to 7 feet below ground surface (bgs).

Petroleum odors were observed in soil borings B-3 at 1.5 to 2 feet bgs, B-5 at 3.75 to 4 feet bgs, and B-6 at 1.5 to 2 feet bgs. Elevated PID readings were observed in soil borings B-2 through B-6. Elevated PID readings ranged from 0.1 to 124 parts per million, with the maximum reading being detected in B-3 at a depth of 0 to 0.5 feet bgs. PID readings are shown on the boring logs provided in Appendix A.

4.2 Analytical Results

Laboratory results were compared to New York Part 375 Unrestricted Use Soil Cleanup Objectives (SCOs). Analytical results are summarized below. A summary of the laboratory analytical results are provided in Tables 2 and 3. Complete laboratory analytical reports are provided in Appendix C.

- TPH: Total petroleum hydrocarbons (TPH) diesel range organics (DRO) was detected in 7 of the 11 grab samples collected at concentrations ranging from 25.5 to 36.7 mg/kg.
- VOCs: Acetone was detected in composite samples WC-1 and WC-2 at concentrations of 0.12 and 0.066 mg/kg, which exceeds the SCO of 0.05 milligram per kilogram (mg/kg). However, acetone is a common laboratory contaminant and was found in the analysis batch blank.
- SVOCs: Only one SVOC, bis(2-ethylhexyl)phthalate, was detected in the composite samples; however, concentrations were below SCOs.
- Metals: Copper, lead, and zinc were detected at concentrations exceeding SCOs in both composite samples. The lead concentrations were detected above the SCOs in WC-1 and in WC-2. Composite sample WC-1 also contained concentrations of barium, nickel, and selenium that exceeded SCOs.
- Pesticides, herbicides, and PCBs were not detected in the samples.

- Toxicity Characteristic Leaching Procedure (TCLP): No detections were observed with the exception of three metals, arsenic, barium and lead. No Environmental Protection Agency (EPA) Toxicity Characteristic Regulatory Levels exceedances were found.

Laboratory results were also compared to New York Part 375 Restricted Residential Use SCOs. Lead was detected at concentrations exceeding Restricted Residential SCOs in both composite samples.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the Site investigation, we conclude and recommend the following:

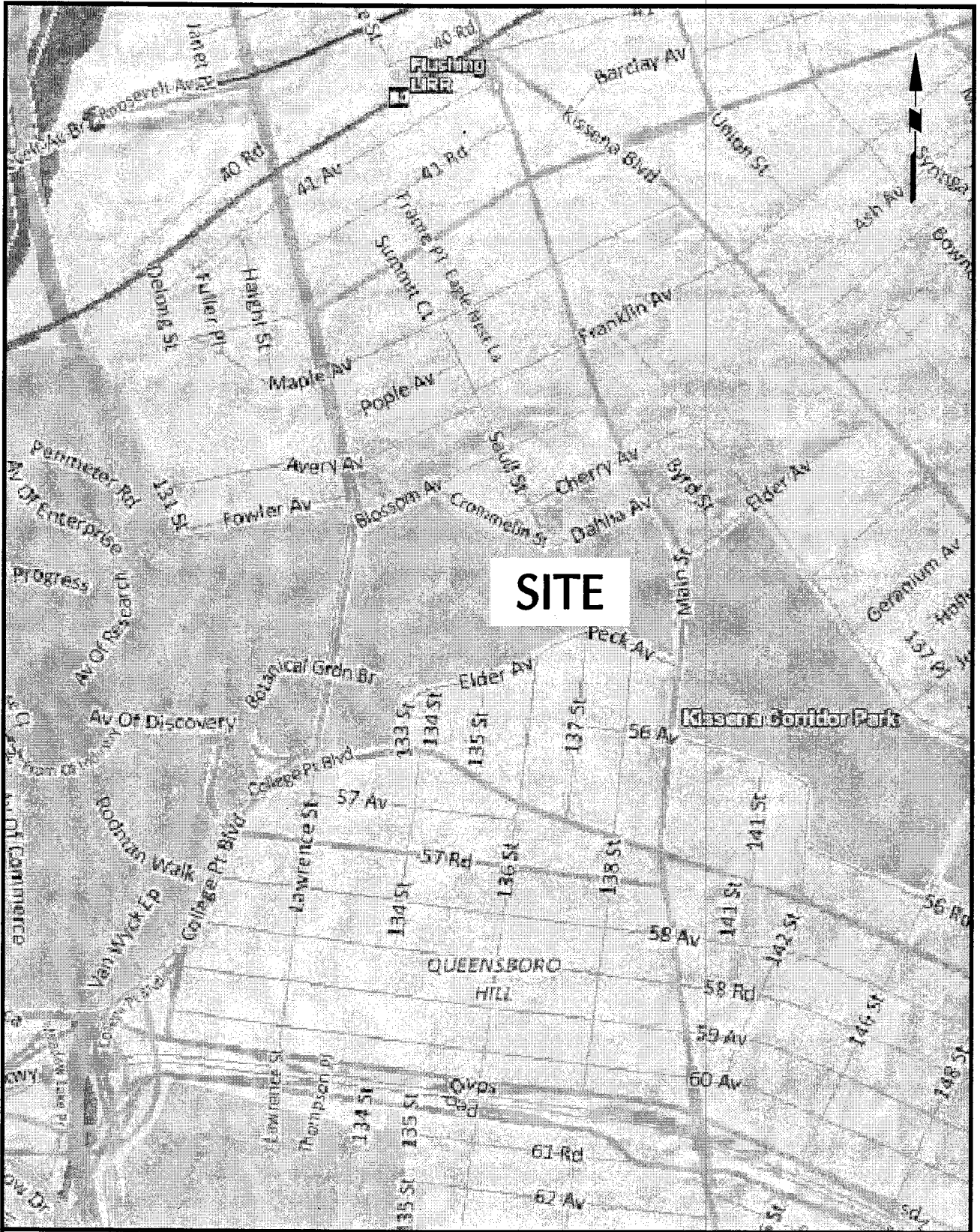
- Soil sampled in the proposed pathway development cut contains one or more metals at concentrations exceeding Unrestricted Use SCOs. This material is therefore regulated by New York State solid waste regulations. Samples also contained an exceedance (lead) of the Restricted Residential SCOs. Therefore, if soil is reused on-site, it must be reused in an area with similar material and capped with a minimum of two feet of clean material (i.e., soil, topsoil) in landscaped areas or impervious surface cover (i.e., asphalt, concrete, etc.).
- Petroleum impacts were observed in soil borings B-3, B-5, and B-6. Petroleum impacted soil cannot be reused and must be removed and disposed at an approved off-site disposal facility.
- None of the samples contained RCRA (40 Code of Federal Regulations [CFR] 260) regulated hazardous material.
- Development activities at the site that impact site soils should be performed in accordance with a soil management plan or specification and a Construction Health and Safety Plan (CHASP) that addresses the impacts identified by this investigation.

6.0 LIMITATIONS

This Waste Characterization Report was prepared expressly for Abel Bainnson Butz, LLP (the Client) for the proposed improvements at the Queens Botanical Garden located in the Kissena Park Corridor of Flushing, Queens and for the objectives defined herein. Langan cannot assume responsibility for the use of this Report for any property other than the specific site addressed in this report, or by any third party without specific written authorization from Langan.

The conclusions, opinions, and recommendations provided in this report are based on subsurface conditions ascertained from the analysis of a limited number of samples and from environmental reports prepared by other professionals that were provided by the Client. Recommendations provided are contingent upon one another and no recommendation should be followed independent of the others. Actual conditions encountered may differ substantially from those presented herein and should be brought to our attention whereby we may determine how such changes may affect our conclusions, opinions and recommendations.

FIGURES



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NEW JERSEY PENNSYLVANIA NEW YORK CONNECTICUT FLORIDA
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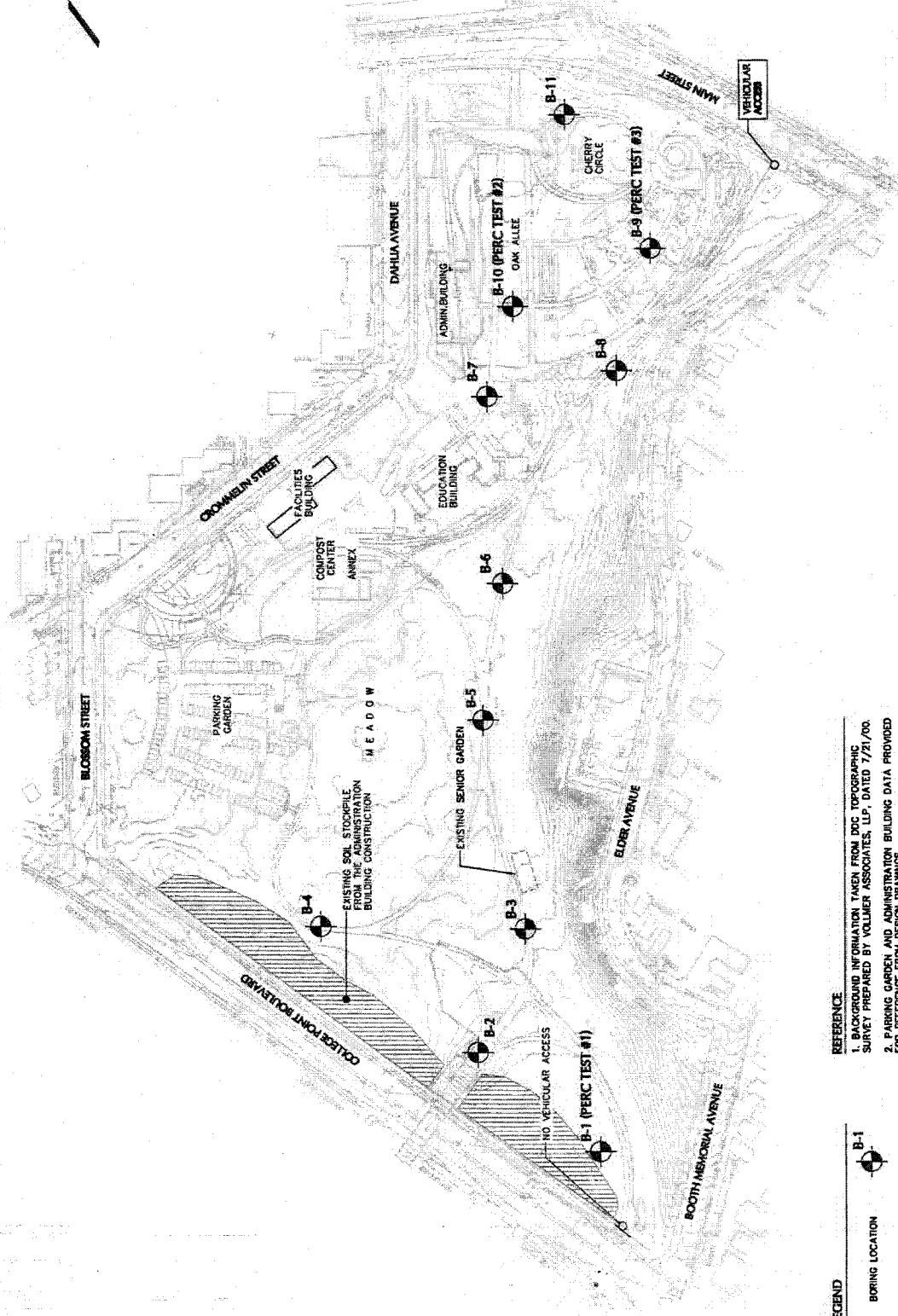
NJ Certificate of Authorization No: 24GA27996400

Project

QUEENS BOTANICAL GARDEN

QUEENS NY

Project No. 170150101	Date 8/26/11	Scale NTS	Dwg. No. 1
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REFERENCE

1. BACKGROUND INFORMATION TAKEN FROM DOC TOPOGRAPHIC SURVEY PREPARED BY VOLLMER ASSOCIATES, LLP, DATED 7/21/00.
2. PARKING GARDEN AND ADMINISTRATION BUILDING DATA PROVIDED FOR REFERENCE FROM DESIGN DRAWINGS.

LEGEND

BORING LOCATION

B-1

<p>ELANGAN ENGINEERING & ARCHITECTURE, P.C. 250 NORTH 314 STREET, SUITE 100 PHILADELPHIA, PA 19104 TEL: 215-581-1400 FAX: 215-581-1401 WWW.ELANGAN.COM</p>	Project	QUEENS BOTANICAL GARDEN	Scale	AS SHOWN
	Sheet No.	2	Date	08/11
	Project No.	10010010	Drawn By	JL
	Client	NYC DEP OF PARCS & RECREATION	Check By	JL
Project Title		BORING LOCATION PLAN		

DATE PLOTTED: 08/11/11 10:52 AM

TABLES

Table 1

Sample Summary
Waste Characterization Report
Queens Botanical Garden
Flushing, New York
Langan Project No. 170150101

Sample ID	Soil Borings	Date	Sample Material Type	Sample Depth Interval (ft bgs)	Sample Analysis
WC-1	B-5 through B-11	7/26/2011	Fill Material	0.0 to 2.0	SVOC EPA 8270, RCRA 8 Metals EPA 6010, PCBs EPA 8081, Pesticides EPA 8082, TCLP SVOCs, pesticides, herbicides, and metals.
	B-5	7/26/2011	Fill Material	0.0 to 2.0	VOCs EPA 8260 and TCLP VOCs.
WC-2	B-1 through B-4	7/26/2011	Fill Material	0.0 to 2.0	SVOC EPA 8270, RCRA 8 Metals EPA 6010, PCBs EPA 8081, Pesticides EPA 8082, TCLP SVOCs, pesticides, herbicides, and metals.
	B-4	7/26/2011	Fill Material	0.0 to 2.0	VOCs EPA 8260 and TCLP VOCs.
B-1 (0-2')	B-1	7/26/2011	Fill Material	0.0 to 2.0	TPH-DRO and TCLP Lead
B-2 (0-2')	B-2	7/26/2011	Fill Material	0.0 to 2.0	TPH-DRO and TCLP Lead
B-3 (0-2')	B-3	7/26/2011	Fill Material	0.0 to 2.0	TPH-DRO and TCLP Lead
B-4 (0-2')	B-4	7/26/2011	Fill Material	0.0 to 2.0	TPH-DRO and TCLP Lead
B-5 (0-2')	B-5	7/26/2011	Fill Material	0.0 to 2.0	TPH-DRO and TCLP Lead
B-6 (0-2')	B-6	7/26/2011	Fill Material	0.0 to 2.0	TPH-DRO and TCLP Lead
B-7 (0-2')	B-7	7/25/2011	Fill Material	0.0 to 2.0	TPH-DRO and TCLP Lead
B-8 (0-2')	B-8	7/26/2011	Fill Material	0.0 to 2.0	TPH-DRO and TCLP Lead
B-9 (0-2')	B-9	7/25/2011	Fill Material	0.0 to 2.0	TPH-DRO and TCLP Lead
B-10 (0-2')	B-10	7/25/2011	Fill Material	0.0 to 2.0	TPH-DRO and TCLP Lead
B-11 (0-2')	B-11	7/25/2011	Fill Material	0.0 to 2.0	TPH-DRO and TCLP Lead

Notes:

VOC = Volatile organic compound
SVOC = Semivolatile organic compound
PCB = Polychlorinated biphenyl
RCRA = Resource Conservation and Recovery Act
EPA = United States Environmental Protection Agency
TPH = Total Petroleum Hydrocarbons
DRO = Diesel Range Organics
TCLP = Toxicity Characteristic Leaching Procedure

Table 2

Summary of Analytical Results in Soil Samples
 Waste Characterization Report
 Queens Botanical Garden
 Flushing, New York
 Langan Project No. 170150101
 Page 1 of 2

Sample ID Laboratory ID Sample Date	Unrestricted Use SCOs	Restricted Residential SCOs	WC-1 11G0830-09 7/26/2011	WC-2 11G0898-04 7/26/2011
TCL Volatile Organics (mg/kg)				
2-Butanone	0.12	100	0.045	0.016
Acetone	0.05	100	0.12	B,D
Carbon disulfide	—	—	0.0051	J,D
Methylene chloride	0.05	100	0.031	B,D
TCL Semi-Volatiles (mg/kg)				
Bis(2-ethylhexyl)phthalate	—	—	0.632	J
Pesticides (mg/kg)				
Pesticides	—	—	ND	ND
PCBs (mg/kg)				
PCBs	—	—	ND	ND
Herbicides (mg/kg)				
Herbicides	—	—	ND	ND
TAL Metals (mg/kg)				
Aluminum	—	—	13600	10700
Antimony	—	—	1.89	0.920
Arsenic	13	16	10.1	5.88
Barium	350	400	357	221
Calcium	—	—	5370	5340
Chromium	—	—	30.9	21.5
Cobalt	—	—	9.55	7.42
Copper	50	270	260	66.5
Iron	—	—	29800	19200
Lead	63	400	1580	448
Magnesium	—	—	3670	2960
Manganese	1600	2000	575	328
Nickel	30	310	32.2	22.0
Potassium	—	—	2310	1200
Selenium	3.9	180	4.35	2.01
Sodium	—	—	223	120
Vanadium	—	—	38.7	31.9
Zinc	109	10000	422	179

Table 2

Summary of Analytical Results in Soil Samples
 Waste Characterization Report
 Queens Botanical Garden
 Flushing, New York
 Langan Project No. 170150101
 Page 2 of 2

Sample ID Laboratory ID Sample Date	EPA Toxicity Characteristic Regulatory Levels	WC-1 11G0830-09 7/26/2011	WC-2 11G0898-04 7/26/2011
TCLP Volatile Organics (mg/L)			
TCLP Volatile Organics	--	ND	ND
TCLP Semi-Volatiles (ug/L)			
TCLP Semi-Volatiles	--	ND	ND
TCLP Pesticides (ug/L)			
TCLP Pesticides	--	ND	ND
TCLP Herbicides (ug/L)			
TCLP Herbicides	--	ND	ND
TCLP Metals (mg/L)			
Arsenic	5.0	0.012	0.001
Barium	100.0	1.20	1.74
Lead	5.0	0.130	0.051

Notes and Qualifiers:

- Reference Standard for VOCs, SVOCs, TAL Metals, PCBs, and pesticides is New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted and Restricted Use Soil Cleanup Objectives (SCOs).
- Reference Standard for TCLP VOCs, SVOCs, Metals, pesticides, and herbicides is Environmental Protection Agency (EPA) Toxicity Characteristics Constituents and Regulatory Levels.
- NYSDEC Part 375 Unrestricted Use SCO exceedances are in BOLD.
- NYSDEC Part 375 Restricted Use SCO exceedances are highlighted.

B = Analyte found in the analysis batch blank.

J = Analyte detected at or above the MDL (method detection limit) but below the RL (Reporting Limit) - data is estimated.

U = Analyte not detected at or above the level indicated.

D = Result is from an analysis that required a dilution.

--- = This indicates that no regulatory limit has been established for this analyte.

PCB = Polychlorinated biphenyl

TCLP = Toxicity Characteristic Leaching Procedure

TCL = Target Compound List

ug/L = Microgram per liter

mg/L = Milligram per liter

ug/kg = Microgram per kilogram

mg/kg = Milligram per kilogram

Table 3

Summary of Analytical Results for Total Petroleum Hydrocarbons in Soil Samples
 Waste Characterization Report
 Queens Botanical Garden
 Flushing, New York
 Langan Project No. 170150101

Sample ID Laboratory ID Sample Date	B-1 (0-2') 11G0898-01 7/26/2011	B-2 (0-2') 11G0898-02 7/26/2011	B-3 (0-2') 11G0830-01 7/26/2011	B-4 (0-2') 11G0898-03 7/26/2011	B-5 (0-2') 11G0830-02 7/26/2011	B-6 (0-2') 11G0830-03 7/26/2011	B-7 (0-2') 11G0830-04 7/25/2011	B-8 (0-2') 11G0830-05 7/26/2011	B-9 (0-2') 11G0830-06 7/25/2011	B-10 (0-2') 11G0830-07 7/25/2011	B-11 (0-2') 11G0830-08 7/25/2011
Total Petroleum Hydrocarbons-DRO (mg/kg)	31.5	6.33	U	27.7	30.5	36.5	30.0	25.5	6.74	6.87	6.52
Total Petroleum Hydrocarbons-DRO											
Sample ID Laboratory ID Sample Date	B-1 (0-2') 11G0898-01 7/26/2011	B-2 (0-2') 11G0898-02 7/26/2011	B-3 (0-2') 11G0830-01 7/26/2011	B-4 (0-2') 11G0898-03 7/26/2011	B-5 (0-2') 11G0830-02 7/26/2011	B-6 (0-2') 11G0830-03 7/26/2011	B-7 (0-2') 11G0830-04 7/25/2011	B-8 (0-2') 11G0830-05 7/26/2011	B-9 (0-2') 11G0830-06 7/25/2011	B-10 (0-2') 11G0830-07 7/25/2011	B-11 (0-2') 11G0830-08 7/25/2011
Lead TCLP (mg/L)	0.0695	0.297	0.420	0.520	0.992	0.00722	0.183	0.223	0.282	0.0574	0.0502
Lead TCLP											

Notes and Qualifiers:

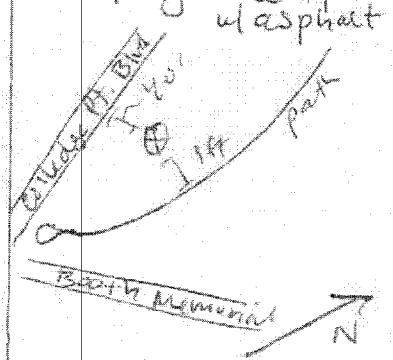
- Reference Standard is New York State Department of Environmental Conservation (NYSDEC) Part 375 Unrestricted Use Soil Cleanup Objectives (SCOs) for VOCs, SVOCs, TAL Metals, PCBs, and pesticides.
- Reference Standard for TCLP VOCs, SVOCs, Metals, pesticides, and herbicides is Environmental Protection Agency (EPA) Toxicity Characteristics Constituents and Regulatory Levels.
- mg/kg = milligram per kilogram

U = Analyte not detected at or above the level indicated.

-- = This indicates that no regulatory limit has been established for this analyte.

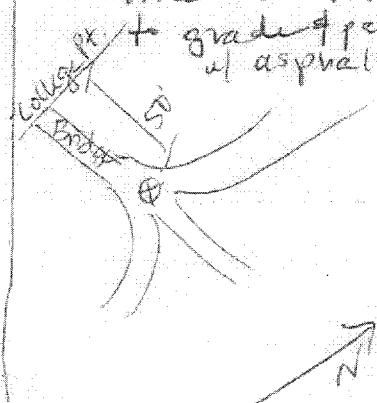
**APPENDIX A
SOIL BORING LOGS**

PROJECT Queen's Botanical Garden Pathway Replacement Project			PROJECT NO. 170150101		
LOCATION Queen's Botanical Garden, Queens, NY			ELEVATION AND DATUM		
DRILLING AGENCY ADT			DATE STARTED 7/26/11		DATE FINISHED 7/26/11
DRILLING EQUIPMENT CME 240 Track Mounted Rig			COMPLETION DEPTH 8'		ROCK DEPTH N/A
SIZE AND TYPE OF BIT N/A			NO. SAMPLES	DIST. 1	UNDIST. — CORE —
CASING 3"			WATER LEVEL	FIRST 7'	COMPL. — 24 HR. —
CASING HAMMER Safety	WEIGHT 140 lb	DROP 30"	FOREMAN Dominic		
SAMPLER OS split spoon sampler			INSPECTOR Sara Meissner		
SAMPLER HAMMER Safety	WEIGHT 140 lb	DROP 30"			

SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)	
		NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BLOW IN.		
Dark brown fine to med SAND, trace silt gravel and wood (dry)	1		SS	(12/24)	1	0.0	B-1 (0-2') sampled @ 1100 7/26/11 - no collected - no odor
	2				6	0.0	
	3		SS	(12/24)	2	0.0	
	4				4	0.0	
	5				5	0.0	
Dark brown / grey silty SAND, trace gravel, (moist)	5		SS	(15/24)	4	0.0	- no odor
	6				3	0.0	
Dark brown / grey silty SAND, trace gravel (saturated)	7		SS	(4/24)	2	0.0	Water @ 7' log
	8				2	0.0	
EOB @ 8'	8				2	0.0	Completed @ 1130 - Hole backfilled to grade & patched w/ asphalt 
	9						
	10						
	11						
	12						
	13						
	14						

PROJECT Queens Botanical Garden Pathways Replacement				PROJECT NO. 170152101				
LOCATION Queens Botanical Garden, Queens, NY				ELEVATION AND DATUM				
DRILLING AGENCY ADT				DATE STARTED 7/26/14		DATE FINISHED 7/26/14		
DRILLING EQUIPMENT CME 240 Track Mounted Rig				COMPLETION DEPTH 8'		ROCK DEPTH N/A		
SIZE AND TYPE OF BIT N/A				NO. SAMPLES		DIST. 1	UNDIST. —	CORE —
CASING 3"				WATER LEVEL		FIRST 5'	COMPL. —	24 HR. —
CASING HAMMER Safety		WEIGHT 140 lb	DROP 30"	FOREMAN Dominic				
SAMPLER OB Split Spoon Sampler				INSPECTOR SARA MEISSNER				
SAMPLER HAMMER Safety		WEIGHT 140 lb	DROP 30"					

DEPTH SCALE	SAMPLE DESCRIPTION	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BL/6 IN.	
	Asphalt					
1	Brown fine to med SAND, some gravel, silt & brick (Dry)		SS	(14/24")	10 1.4	B-2 (0-2') sampled @ 1200 7/26/14 - PID readings in ppm - WC collected
				5 2.8		
2	Dark brown fine to med SAND, trace gravel & silt, some wood pieces (Dry)			9 3.1		
				6 1.8		
3			SS	(18/24")	9 1.2	- no odors -
				22 1.1		
				28 0.8		
4				35 0.4		
5	Grey-brown fine to med SAND mixed w/ gravel (saturated)		SS	(12/24")	33 0.2	Water @ 5 Abg
				14 0.0		
6				9 0.0		
				12 0.0		
7			SS	(6/24")	9 0.0	- no odors -
				9 0.0		
				12 0.0		
8						
9	EOB @ 8'					Completed @ 1230 - Hole back filled to grade & patch w/ asphalt
10						
11						
12						
13						
14						



PROJECT Queens Botanical Garden Pathways Replacement Project				PROJECT NO. 170150101			
LOCATION Queens Botanical Garden, Queens, NY				ELEVATION AND DATUM			
DRILLING AGENCY ADT				DATE STARTED 7/26/11		DATE FINISHED 7/26/11	
DRILLING EQUIPMENT CME 240 Track Mounted Rig				COMPLETION DEPTH 8'		ROCK DEPTH N/A	
SIZE AND TYPE OF BIT N/A				NO. SAMPLES		DIST. 1	
CASING 3"				WATER LEVEL		FIRST 5' COMPL. — 24 HR. —	
CASING HAMMER Safety		WEIGHT 140 lb		DROP 30"		FOREMAN Dominic	
SAMPLER OD Split Spoon Sampler				INSPECTOR SARA MEISSNER			
SAMPLER HAMMER Safety		WEIGHT 140 lb		DROP 30"			

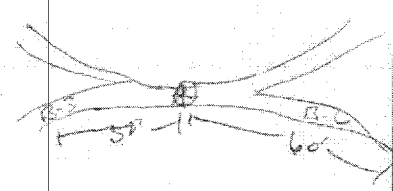
SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES					REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	REC. FT.	PENETR. RESIST. BL/6 IN.	PID	
Asphalt							
Dark brown - brown fine to med SAND, some silt & gravel (Dry)	1		SS	(10/24")	5	124	B-3(0-2') sampled @ 1030 on 7/26/11 - WC collected - light Pet. odor - - PID readings in ppm
	2				2	116	
					2	99.7	
	3				5	87.1	
					2	76.1	
Brown silty SAND, some gravel (Dry)	4		SS	(10/24")	2	44.3	
	5				3	24.8	
					3	19.2	
Brown-grey silty SAND trace gravel (Med+)	6		SS	(12/24")	2	7.1	
	7				2	6.9	
					3	5.2	
Brown-grey silty SAND (Saturated)	7				6	4.1	
					2	3.1	
					3	2.1	
EOB @ 8'	8				9	2.1	Water @ 7 ft Completed @ 1100 - Hole back filled to grade & patched w/ asphalt N 30' → Seam Garden
					7	1.8	
	9						
	10						
	11						
	12						
	13						
	14						

PROJECT Queens Botanical Pathways Replacement Project				PROJECT NO. 170150101				
LOCATION Queens Botanical Garden, Queens, NY				ELEVATION AND DATUM				
DRILLING AGENCY ADT				DATE STARTED 7/26/11		DATE FINISHED 7/26/11		
DRILLING EQUIPMENT CME 240 Track Mounted Rig				COMPLETION DEPTH 9'		ROCK DEPTH N/A		
SIZE AND TYPE OF BIT NA				NO. SAMPLES		DIST. 1	UNDIST. —	CORE —
CASING 3"				WATER LEVEL		FIRST 55'	COMPL.	24 HR.
CASING HAMMER Safety		WEIGHT 140 lb		DROP 30"		FOREMAN Dominic		
SAMPLER OD Split Spoon Sampler				INSPECTOR SMITH MEISSNER				
SAMPLER HAMMER Safety		WEIGHT 140 lb		DROP 30"				

DEPTH SCALE	SAMPLE DESCRIPTION	SAMPLES					REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BL/FT	PID	
1	Dark brown/black fine to med SAND some gravel & silt (dry). Asphalt		SS	(20/24")	110	1.5	B-4 (0.2') Sampled @ 1300 7/26/11 - PID readings in ppm - no odors -
2				7	1.8		
3	Dark brown - grey silty SAND, some gravel & some coarse SAND. (saturated)		SS	(12/24")	5	0.1	WC-2 sampled @ 1400 7/26/11
4				5	0.2		
5				5	0.0		
6				5	0.1		
7	EOB @ 8 ft		SS	(18/24")	3	0.0	water @ 515 ft
8				3	0.0		
9				10	0.0		
10			SS	(14/24")	3	0.0	Completed @ 1300 - Hole backfilled to grade & patched w/ asphalt
11				10	0.0		
12				12	0.0		
13							
14							

PROJECT Queens Botanical Pathways Replacement Project				PROJECT NO. 170150107				
LOCATION Queens Botanical Garden, Queens, NY				ELEVATION AND DATUM				
DRILLING AGENCY ADT				DATE STARTED 7/26/11		DATE FINISHED 7/26/11		
DRILLING EQUIPMENT CME 240 Track Mounted Rig				COMPLETION DEPTH 8		ROCK DEPTH N/A		
SIZE AND TYPE OF BIT N/A				NO. SAMPLES		DIST. 1	UNDIST. —	CORE —
CASING 3"				WATER LEVEL		FIRST 7'	COMPL. —	24 HR. —
CASING HAMMER Safety		WEIGHT 140 lb		DROP 30"		FOREMAN Dominic		
SAMPLER OD Split Spoon Sampler				INSPECTOR SARA MEISSNER				
SAMPLER HAMMER Safety		WEIGHT 140 lb		DROP 30"				

SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES					REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BLU in.	PI	
Dark brown - black fine SAND, some gravel + silt (Dry) Asphalt	1		SS	(18/24")	9	17.8	B-5 (0-2') sampled @ 0930 on 7/26/11 - we collected
				3	22.9		
				3	28.1		
				3	42.2		
Brown - dark brown fine to med SAND, trace gravel + silt (Dry)	2		SS	(4/24")	2	18.0	WC-1 sampled @ 1000 7/26/11 - slight odor -
	3			2	7.2		
				3	6.8		
				3	7.1		
Brown med SAND, (moist)	4		SS	(20/24")	2	3.1	- P10 readings in ppm
	5			2	2.2		
				2	1.0		
				2	0.7		
Dark brown - grey silty SAND, trace gravel (saturated)	6		SS	(12/24")	2	0.4	Water @ 7'
	7			3	1.0		
				8	0.0		
				6	0.2		
EOB @ 8'	8						Completed @ 1000 - hole backfilled to grade & patched w/ asphalt N
	9						
	10						
	11						
	12						
	13						
	14						



PROJECT Queens Botanical Pathways Replacement Project			PROJECT NO. 170150101		
LOCATION Queens Botanical Garden, Queens, NY			ELEVATION AND DATUM		
DRILLING AGENCY ADT			DATE STARTED 7/26/11		DATE FINISHED 7/26/11
DRILLING EQUIPMENT CME 240 Track Mounted Rig			COMPLETION DEPTH 8'		ROCK DEPTH
SIZE AND TYPE OF BIT N/A			NO. SAMPLES	DIST. 1	UNDIST. — CORE —
CASING 3"			WATER LEVEL	FIRST 7'	COMPL. — 24 HR. —
CASING HAMMER	Safety	WEIGHT 140 lb	DROP 30"	FOREMAN Dominic	
SAMPLER OD Split Spoon Sampler			INSPECTOR SARA MEISSNER		
SAMPLER HAMMER	Safety	WEIGHT 140 lb	DROP 30"		

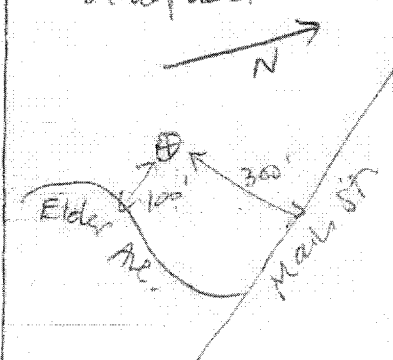
DEPTH SCALE	SAMPLE DESCRIPTION	SAMPLES					REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)	
		NO. LOC.	TYPE	REC'D. FT.	PENETR. RESIST. B/LA IN.	PID		
1	Dark brown - black fine to med SAND, trace gravel + silt (Dry). Asphalt	SS	(6/24")	9	55.1	B-6 (0-2') sampled @ 0900 on 7/26/11		
2				4	60.4	- slight pet. odor		
3				3	48.2	- WC collected		
3		SS	(18/24")	2	18.1	- PID readings in ppm		
4				2	17.2			
5				4	6.4			
5	Brown - grey fine to med SAND, some silt & gravel (saturated).	SS	(20/24")	6	4.2			
6				5	0.0			
7				9	2.0			
7				7	1.8			
7	Water @ 7' log	SS	(8/24")	7	0.4			
8				9	0.0			
8				7	0.1			
8	EOB @ 8'			10	0.0			
9								Completed @ 0930 - hole backfilled to grade & patched w/ asphalt
10								N →
11								B-5
12								B-3
13								1-60'

PROJECT Queens Botanical Pathways Replacement Project			PROJECT NO. 170150101		
LOCATION Queens Botanical Garden, Queens, NY			ELEVATION AND DATUM		
DRILLING AGENCY ADT			DATE STARTED 7/25/11		DATE FINISHED 7/25/11
DRILLING EQUIPMENT PME 240 Track Mounted Rig			COMPLETION DEPTH 8'		ROCK DEPTH
SIZE AND TYPE OF BIT N/A			NO. SAMPLES	DIST. 1	UNDIST. — CORE —
CASING 3"			WATER LEVEL	FIRST 7'	COMPL. — 24 HR. —
CASING HAMMER Safety	WEIGHT 140 lb	DROP 30"	FOREMAN Dominic		
SAMPLER OD Split Spoon Sampler			INSPECTOR SARA WEISSNER		
SAMPLER HAMMER Safety	WEIGHT 140 lb	DROP 30"			

SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				P/D	REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BLG IN.		
Dark brown fine to med SAND some wood, trace gravel & silt. (Dry) Asphalt	1		SS	(18/24")	1	0.0	B-7 (0-2') sampled @ 11:15 on 7/25/11 — no odors —
				2	0.0		
				4	2.0		
				2	2.0		
Brown fine to med SAND some gravel, trace silt (Dry)	2		SS	(16/24")	2	0.0	— PID readings in ppm
	3			1	0.0		
				2	0.0		
				2	0.0		
Brown-grey fine to med SAND some gravel & silt (Saturated @ 7')	4		SS	(8/24")	1	0.0	
	5			2	0.0		
				3	0.0		
				3	0.0		
Water @ 7'	7		SS	(10/24")	2	0.0	
				3	0.0		
				4	0.0		
EOB @ 8'	8						Completed @ 11:45 — hole back filled to grade & patched w/ asphalt N Admin BLDG EOB BLDG
	9						
	10						
	11						
	12						
	13						
	14						

PROJECT <u>Queens Botanical Pathways Replacement Project</u>			PROJECT NO. <u>170150101</u>		
LOCATION <u>Queens Botanical Garden, Queens NY</u>			ELEVATION AND DATUM		
DRILLING AGENCY <u>ADT</u>			DATE STARTED <u>7/26/11</u>	DATE FINISHED <u>7/26/11</u>	
DRILLING EQUIPMENT <u>CME 240 Track Mounted Rig</u>			COMPLETION DEPTH <u>8'</u>	ROCK DEPTH	
SIZE AND TYPE OF BIT <u>N/A</u>			NO. SAMPLES	DIST. <u>1</u>	UNDIST. <u>—</u>
CASING <u>3"</u>			WATER LEVEL	FIRST <u>7'</u>	COMPL. <u>—</u>
CASING HAMMER <u>Safety</u>	WEIGHT <u>140 lb</u>	DROP <u>30"</u>	FOREMAN <u>Dominic</u>		
SAMPLER <u>OD Split Spoon Sampler</u>			INSPECTOR <u>SARA MEISSNER</u>		
SAMPLER HAMMER <u>Safety</u>	WEIGHT <u>140 lb</u>	DROP <u>30"</u>			

SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES					REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. BL/IN.	P/D	
Asphalt	1				7	0.0	B-8(0-2') sampled @ 0800 on 7/26/11 - no odors - WC collected
	2				5	0.0	
Grey - brown fine to med SAND, some gravel & silt (Dry)	3				6	0.0	- PID readings in ppm
	4				8	0.0	
	5				12	0.0	
	6				19	0.0	
Rock w/ grey - brown fine to med SAND, some gravel, trace silt (Moist)	7				17	0.0	
	8				26	0.0	
	9				34	0.0	
	10				28	0.0	
Brown / dark brown fine to med SAND, some gravel, trace silt. (Saturated)	11				21	0.0	Water @ 7'
	12				16	0.0	
	13				12	0.0	
EOB @ 8'	14				12	0.0	Completed @ 0830 - hole back filled to grade & patched w/ asphalt



PROJECT Queens Botanical Pathways Replacement Project			PROJECT NO. 170150101		
LOCATION Queens Botanical Garden, Queens, NY			ELEVATION AND DATUM		
DRILLING AGENCY ADT			DATE STARTED 7/25/11		DATE FINISHED 7/25/11
DRILLING EQUIPMENT CME 240 Track Mounted Rig			COMPLETION DEPTH 8'		ROCK DEPTH
SIZE AND TYPE OF BIT N/A			NO. SAMPLES	DIST. 1	UNDIST. — CORE —
CASING 3"			WATER LEVEL	FIRST 7'	COMPL. — 24 HR. —
CASING HAMMER Safety	WEIGHT 140 lb	DROP 30"	FOREMAN Dominic		
SAMPLER OD Split Spoon Sampler			INSPECTOR SARA MEISSNER		
SAMPLER HAMMER Safety	WEIGHT 140 lb	DROP 30"			

DEPTH SCALE	SAMPLE DESCRIPTION	SAMPLES					REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	RECOV. FT.	PENETR. RESIST. Blg. in.	PID	
1	Brown-grey fine to med SAND some gravel & silt (Dry) Asphalt	SS	(5/24")	6	0.0	B-10 (0-2') sampled @ 1200 on 7/25/11 - PID readings in ppm-	
3				0.0			
2	Asphalt	SS	(12/24")	12	0.0	- no odors -	
12				0.0			
3	Grey fine SAND some gravel, trace silt (Dry)	SS	(12/24")	9	0.0		
9				0.0			
4	Brown fine to med SAND trace gravel, some silt (moist)	SS	(12/24")	13	0.0		
13				0.0			
5	Brown fine to med SAND trace gravel, some silt (moist)	SS	(12/24")	27	0.0		
27				0.0			
6	Brick	SS	(12/24")	14	0.0		
14				0.0			
7	Brown-grey fine to med SAND some gravel & silt (saturated)	SS	(20/24")	9	0.0	Water @ 7'	
9				0.0			
8	EOB @ 8'	SS	(20/24")	3	0.0	Computed @ 1230 on 7/25/11 - hole backfilled to grade & patched w/ asphalt	
3				0.0			
7	EOB @ 8'	SS	(20/24")	7	0.0	Admin BLDG	
7				0.0			
6	EOB @ 8'	SS	(20/24")	6	0.0		
6				0.0			

PROJECT Queens Botanical Pathways Replacement Project			PROJECT NO. 170150101		
LOCATION Queens Botanical Garden, Queens, NY			ELEVATION AND DATUM		
DRILLING AGENCY ADT			DATE STARTED 7/25/11		DATE FINISHED 7/25/11
DRILLING EQUIPMENT CME 240 Track Mounted Rig			COMPLETION DEPTH 8'		ROCK DEPTH
SIZE AND TYPE OF BIT N/A			NO. SAMPLES	DIST.	UNDIST. CORE
CASING 3"			WATER LEVEL	FIRST	COMPL. 24 HR.
CASING HAMMER	SAFETY	WEIGHT	DROP		
		140 lb	30"		
SAMPLER OD Split Spoon Sampler			FOREMAN Dominic		
SAMPLER HAMMER			INSPECTOR		
		SAFETY	SARA MEISSNER		
		WEIGHT	DROP		
		140 lb	30"		

SAMPLE DESCRIPTION	DEPTH SCALE	SAMPLES				REMARKS (DRILLING FLUID, DEPTH OF CASING, CASING BLOWS, FLUID LOSS, ETC.)
		NO. LOC.	TYPE	REC'D. FT.	PENETR. RESIST. BLU. IN.	
Asphalt						
Brown-grey fine to med SAND, some silt, trace gravel. (Dry)	1		SS	(15/24")	66	B-11 (0-2') sampled @ 1400 on 7/25/11 - PID readings in ppm - WE collected
	2				5	
	3		SS	(10/24")	66	- no odors -
	4				2	
Brown-grey brown fine to med SAND, some gravel, trace silt. (Dry)	5		SS	(16/24")	10	
Brick	6				9	
Brown fine to med SAND, moist. (Dry?)	7				7	
Dark brown fine to med SAND, (saturated)	8				9	
Dark brown fine to med SAND, trace silt & gravel (saturated)	9		SS	(12/24")	13	
	10				9	
	11				11	Water @ 7'
	12				8	
EOB @ 8'	13					Completed @ 1430 on 7/25/11 - hole back filled to grade & patched w/ asphalt
	14					Cherry Circle

APPENDIX B
ANALYTICAL LABORATORY NYSDOH CERTIFICATION



STATE OF NEW YORK
DEPARTMENT OF HEALTH

Wadsworth Center The Governor Nelson A. Rockefeller Empire State Plaza P.O. BOX 509 Albany, New York 12201-0509

LAB ID: 10854

April 27, 2011

MR. ROBERT Q. BRADLEY
YORK ANALYTICAL LABORATORIES INC
120 RESEARCH DRIVE
STRATFORD, CT 06615

Certificate Expiration Date:
April 01, 2012

Dear Mr. Bradley,

Enclosed are Certificate(s) of Approval issued to your environmental laboratory for the current permit year. The Certificate(s) supersede(s) any previously issued one(s) and is(are) in effect through the expiration date listed. Please carefully examine the Certificate(s) to insure that the categories, subcategories, analytes, and methods for which your laboratory is approved are correct. In addition, verify that your laboratory's name, address, lead technical director, and identification number are accurate.

Pursuant to NYCRR Subpart 55-2.2, original certificates must be posted conspicuously in the laboratory and copies shall be made available to any client of the laboratory upon request.

Pursuant to NYCRR Subpart 55-2.6, any misrepresentation of the Fields of Accreditation (Matrix - Method - Analyte) for which your laboratory is approved may result in denial, suspension, or revocation of your certification. Any use of the Environmental Laboratory Approval Program (ELAP) or National Environmental Laboratory Accreditation Program (NELAP) name, reference to the laboratory's approval status, and/or using the NELAP logo in any catalogs, advertising, business solicitations, proposals, quotations, laboratory analytical reports, or other materials must include the laboratory's ELAP identification number and distinguish between testing for which the laboratory is approved and testing for which the laboratory is not approved.

Please notify the ELAP office of any changes you feel need to be made to your Certificate(s). We may be reached by email - elap@health.state.ny.us - or by calling (518) 485-5570.

Sincerely,

STEPHANIE OSTROWSKI, PH.D.
Program Director
Environmental Laboratory Approval Program

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2012
Issued April 01, 2011
Revised April 27, 2011

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ROBERT Q. BRADLEY
YORK ANALYTICAL LABORATORIES INC
120 RESEARCH DRIVE
STRATFORD, CT 06615

NY Lab Id No: 10954
EPA Lab Code: CT00106

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER

All approved analytes are listed below:

Amines		Chlorinated Hydrocarbon Pesticides	
Pyridine	EPA 8270C	Dieldrin	EPA 8081A
Benzidines		Endosulfan I	EPA 608
3,3'-Dichlorobenzidine	EPA 625	Endosulfan II	EPA 8081A
	EPA 8270C		EPA 608
	EPA 8270D	Endosulfan sulfate	EPA 8081A
Benzidine	EPA 625		EPA 608
	EPA 8270C	Endrin	EPA 8081A
			EPA 608
Chlorinated Hydrocarbon Pesticides		Endrin-aldehyde	EPA 8081A
4,4'-DDD	EPA 608		EPA 608
	EPA 8081A	Heptachlor	EPA 8081A
4,4'-DDE	EPA 608		EPA 608
	EPA 8081A	Heptachlor epoxide	EPA 608
4,4'-DDT	EPA 608		EPA 8081A
	EPA 8081A	Lindane	EPA 608
Aldrin	EPA 608		EPA 8081A
	EPA 8081A	Methoxychlor	EPA 608
alpha-BHC	EPA 608		EPA 8081A
	EPA 8081A	Toxaphene	EPA 608
beta-BHC	EPA 608		EPA 8081A
	EPA 8081A	Chlorinated Hydrocarbons	
Chlordane Total	EPA 608	1,2,4,5-Tetrachlorobenzene	EPA 8270D
	EPA 8081A	1,2,4-Trichlorobenzene	EPA 625
delta-BHC	EPA 608		EPA 8270C
	EPA 8081A		
Dieldrin	EPA 608		

Serial No.: 44887

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EPA Lab Code: CT00106

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National Environmental Laboratory Accreditation Conference Standards for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below.

Chlorinated Hydrocarbons

1,2,4-Trichlorobenzene EPA 8270D

2-Chloronaphthalene EPA 625

EPA 8270C

EPA 8270D

Hexachlorobenzene EPA 625

EPA 8270C

EPA 8270D

Hexachlorobutadiene EPA 625

EPA 8270C

EPA 8270D

Hexachlorocyclopentadiene EPA 625

EPA 8270C

EPA 8270D

Hexachloroethane EPA 625

EPA 8270C

EPA 8270D

Chlorophenoxy Acid Pesticides

2,4,5-T EPA 8151A

2,4,5-TP (Silvex) EPA 8151A

2,4-D EPA 8151A

Dicamba EPA 8151A

Demand

Biochemical Oxygen Demand SM 18-21 5210B (01)

Fuel Oxygenates

Di-isopropyl ether EPA 8260B

Ethanol EPA 8260B

tert-amyl alcohol EPA 8260B

tert-amyl methyl ether (TAME) EPA 8260B

tert-butyl alcohol EPA 8260B

tert-butyl ethyl ether (ETBE) EPA 8260B

Haloethers

4-Bromophenylphenyl ether EPA 625

EPA 8270C

EPA 8270D

4-Chlorophenylphenyl ether EPA 625

EPA 8270C

EPA 8270D

Bis(2-chloroisopropyl) ether EPA 625

EPA 8270C

EPA 8270D

Bis(2-chloroethoxy)methane EPA 625

EPA 8270C

EPA 8270D

Bis(2-chloroethyl) ether EPA 625

EPA 8270C

EPA 8270D

Nitroaromatics and Isophorone

2,4-Dinitrotoluene EPA 625

EPA 8270C

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120 RESEARCH DRIVE
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EPA Lab Code: GT00106

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ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Nitroaromatics and Isophorone

2,4-Dinitrotoluene	EPA 8270D
2,6-Dinitrotoluene	EPA 625
	EPA 8270C
	EPA 8270D
Isophorone	EPA 625
	EPA 8270C
	EPA 8270D
Nitrobenzene	EPA 625
	EPA 8270C
	EPA 8270D

Nitrosoamines

N-Nitrosodi-n-propylamine	EPA 625
	EPA 8270C
	EPA 8270D
N-Nitrosodiphenylamine	EPA 625
	EPA 8270C
	EPA 8270D

Nutrient

Ammonia (as N)	SM 19-21 4500-NH3 D or E (97)
Kjeldahl Nitrogen, Total	SM 19-21 4500-NH3 D or E (97)
Nitrate (as N)	EPA 300.0 Rev. 2.1
Nitrite (as N)	EPA 300.0 Rev. 2.1
Orthophosphate (as P)	EPA 300.0 Rev. 2.1

Phthalate Esters

Benzyl butyl phthalate	EPA 625
	EPA 8270C
	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 625
	EPA 8270C
	EPA 8270D
Diethyl phthalate	EPA 625
	EPA 8270C
	EPA 8270D
Dimethyl phthalate	EPA 625
	EPA 8270C
	EPA 8270D
Di-n-butyl phthalate	EPA 625
	EPA 8270C
	EPA 8270D
Di-n-octyl phthalate	EPA 625
	EPA 8270C
	EPA 8270D

Polychlorinated Biphenyls

PCB-1016	EPA 608
	EPA 8082
PCB-1221	EPA 608
	EPA 8082
PCB-1232	EPA 608
	EPA 8082

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Polychlorinated Biphenyls

PGB-1242	EPA 608
	EPA 8082
PCB-1248	EPA 608
	EPA 8082
PCB-1254	EPA 608
	EPA 8082
PCB-1260	EPA 608
	EPA 8082

Polynuclear Aromatics

Benzo(b)fluoranthene	EPA 8270C
	EPA 8270D
Benzo(ghi)perylene	EPA 625
	EPA 8270C
	EPA 8270D
Benzo(k)fluoranthene	EPA 625
	EPA 8270C
	EPA 8270D

Polynuclear Aromatics

Acenaphthene	EPA 625
	EPA 8270C
	EPA 8270D
Acenaphthylene	EPA 625
	EPA 8270C
	EPA 8270D
Anthracene	EPA 625
	EPA 8270C
	EPA 8270D

Chrysene

EPA 625
EPA 8270C
EPA 8270D

Dibenzo(a,h)anthracene

EPA 625
EPA 8270C
EPA 8270D

Fluoranthene

EPA 625
EPA 8270C
EPA 8270D

Fluorene

EPA 625
EPA 8270C
EPA 8270D

Benzo(a)anthracene

EPA 625
EPA 8270C
EPA 8270D

Indeno(1,2,3-cd)pyrene

EPA 625
EPA 8270C
EPA 8270D

Benzo(a)pyrene

EPA 625
EPA 8270C
EPA 8270D

Naphthalene

EPA 625
EPA 8270C

Benzo(b)fluoranthene

EPA 625

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ENVIRONMENTAL ANALYSES NON POTABLE WATER

All approved analytes are listed below:

Polynuclear Aromatics

Naphthalene EPA 8270D
Rhenanthrene EPA 625
EPA 8270C
EPA 8270D
Pyrene EPA 625
EPA 8270C
EPA 8270D

Priority Pollutant Phenols

2,4,5-Trichlorophenol EPA 625
EPA 8270C
EPA 8270D
2,4,6-Trichlorophenol EPA 625
EPA 8270C
EPA 8270D
2,4-Dichlorophenol EPA 625
EPA 8270C
EPA 8270D
2,4-Dimethylphenol EPA 625
EPA 8270C
EPA 8270D
2,4-Dinitrophenol EPA 625
EPA 8270C
EPA 8270D
2-Chlorophenol EPA 625
EPA 8270C

Priority Pollutant Phenols

2-Chlorophenol EPA 8270D
2-Methyl-4,6-dinitrophenol EPA 625
EPA 8270C
EPA 8270D
2-Nitrophenol EPA 625
EPA 8270C
EPA 8270D
4-Chloro-3-methylphenol EPA 625
EPA 8270C
EPA 8270D
4-Nitrophenol EPA 625
EPA 8270C
EPA 8270D
Cresols, Total EPA 8270C
EPA 8270D
Pentachlorophenol EPA 625
EPA 8270C
EPA 8270D
Phenol EPA 625
EPA 8270C
EPA 8270D
Residue
Solids, Total SM 18-21 2540B (97)
Solids, Total Dissolved SM 18-21 2540C (97)
Solids, Total Suspended SM 18-21 2540D (97)

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ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below.

Semi-Volatile Organics

1,2-Dichlorobenzene, Semi-volatile EPA 8270C
EPA 8270D
1,3-Dichlorobenzene, Semi-volatile EPA 8270C
EPA 8270D
1,4-Dichlorobenzene, Semi-volatile EPA 8270C
EPA 8270D
Benzyl alcohol EPA 8270D

Volatile Aromatics

1,2,4-Trichlorobenzene, Volatile EPA 8260B
1,2-Dichlorobenzene EPA 624
EPA 8260B
1,3-Dichlorobenzene EPA 624
EPA 8260B
1,4-Dichlorobenzene EPA 624
EPA 8260B
Benzene EPA 624
EPA 8260B
Chlorobenzene EPA 624
EPA 8260B
Ethyl benzene EPA 624
EPA 8260B
Toluene EPA 624
EPA 8260B
Total Xylenes EPA 624
EPA 8260B

Volatile Halocarbons

1,1,1-Trichloroethane EPA 624
EPA 8260B
1,1,2,2-Tetrachloroethane EPA 624
EPA 8260B
1,1,2-Trichloroethane EPA 624
EPA 8260B
1,1-Dichloroethane EPA 624
EPA 8260B
1,1-Dichloroethene EPA 624
EPA 8260B
1,2-Dichloroethane EPA 624
EPA 8260B
1,2-Dichloropropane EPA 624
EPA 8260B
2-Chloroethylvinyl ether EPA 8260B
Bromodichloromethane EPA 624
EPA 8260B
Bromoform EPA 624
EPA 8260B
Bromomethane EPA 624
Carbon tetrachloride EPA 624
EPA 8260B
Chloroethane EPA 624
EPA 8260B
Chloroform EPA 624

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ENVIRONMENTAL ANALYSES NON POTABLE WATER

All approved analytes are listed below:

Volatile Halocarbons

Wastewater Metals I

Chloroform EPA 8260B

Barium, Total EPA 200.7 Rev. 4.4

Chloromethane EPA 624

EPA 6010B

dis-1,3-Dichloropropene EPA 8260B

Cadmium, Total EPA 200.7 Rev. 4.4

EPA 624

EPA 6010B

EPA 8260B

Chromium, Total EPA 200.7 Rev. 4.4

Dibromochloromethane EPA 624

EPA 6010B

EPA 8260B

Copper, Total EPA 200.7 Rev. 4.4

Dichlorodifluoromethane EPA 624

EPA 6010B

EPA 8260B

Iron, Total EPA 6010B

Hexachlorobutadiene, Volatile EPA 8260B

Lead, Total EPA 200.7 Rev. 4.4

Methylene chloride EPA 624

EPA 6010B

EPA 8260B

Magnesium, Total EPA 200.7 Rev. 4.4

Tetrachloroethene EPA 624

EPA 6010B

EPA 8260B

Manganese, Total EPA 200.7 Rev. 4.4

trans-1,2-Dichloroethene EPA 624

EPA 6010B

EPA 8260B

Nickel, Total EPA 200.7 Rev. 4.4

trans-1,3-Dichloropropene EPA 624

EPA 6010B

EPA 8260B

Wastewater Metals II

Trichloroethene EPA 624

Aluminum, Total EPA 200.7 Rev. 4.4

EPA 8260B

EPA 6010B

Trichlorofluoromethane EPA 8260B

Antimony, Total EPA 200.7 Rev. 4.4

Vinyl chloride EPA 624

EPA 6010B

EPA 8260B

Arsenic, Total EPA 200.7 Rev. 4.4

Volatiles Organics

EPA 6010B

2-Butanone (Methylethyl ketone) EPA 8260B

Beryllium, Total EPA 200.7 Rev. 4.4

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ENVIRONMENTAL ANALYSES NON POTABLE WATER

All approved analytes are listed below:

Wastewater Metals II

Beryllium, Total	EPA 6010B
Mercury, Total	EPA 245.1 Rev. 3.0 EPA 245.2 Rev. 1974 EPA 7470A
Selenium, Total	EPA 200.7 Rev. 4.4 EPA 6010B
Vanadium, Total	EPA 200.7 Rev. 4.4 EPA 6010B
Zinc, Total	EPA 200.7 Rev. 4.4 EPA 6010B

Sample Preparation Methods

SM 18-20 4500-CN C

Wastewater Metals III

Molybdenum, Total	EPA 200.7 Rev. 4.4 EPA 6010B
Thallium, Total	EPA 200.7 Rev. 4.4 EPA 6010B

Wastewater Miscellaneous

Oil & Grease Total Recoverable (HEM)	EPA 1664A
Surfactant (MBAS)	SM 18-21 5540C (00)

Sample Preparation Methods

EPA 3005A
EPA 3010A
EPA 3020A
EPA 3510C
EPA 5030B

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ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE

All approved analytes are listed below:

Amines

2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
Aniline	EPA 8270D
Carbazole	EPA 8270D
Diphenylamine	EPA 8270D

Chlorinated Hydrocarbon Pesticides

Endosulfan II	EPA 8081A
Endosulfan sulfate	EPA 8081A
Endrin	EPA 8081A
Endrin aldehyde	EPA 8081A
Heptachlor	EPA 8081A
Heptachlor epoxide	EPA 8081A
Lindane	EPA 8081A
Methoxychlor	EPA 8081A

Benzidines

3,3'-Dichlorobenzidine	EPA 8270D
------------------------	-----------

Chlorinated Hydrocarbons

1,2,4-Trichlorobenzene	EPA 8270C
	EPA 8270D
2-Chloronaphthalene	EPA 8270C
	EPA 8270D
Hexachlorobenzene	EPA 8270C
	EPA 8270D
Hexachlorobutadiene	EPA 8270C
	EPA 8270D
Hexachlorocyclopentadiene	EPA 8270C
	EPA 8270D
Hexachloroethane	EPA 8270C
	EPA 8270D

Characteristic Testing

Corrosivity	EPA 1110
Ignitability	EPA 1010
Reactivity	SW-846 Ch7 Sec. 7.3

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081A
4,4'-DDE	EPA 8081A
4,4'-DDT	EPA 8081A
Aldrin	EPA 8081A
alpha-BHC	EPA 8081A
beta-BHC	EPA 8081A
Chlordane Total	EPA 8081A
delta-BHC	EPA 8081A
Dieldrin	EPA 8081A
Endosulfan I	EPA 8081A

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A

Serial No.: 44888

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 486-5570 to verify the laboratory's accreditation status.



NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER



Expires 12:01 AM April 01, 2012
Issued April 01, 2011
Revised April 27, 2011

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ROBERT Q. BRADLEY
YORK ANALYTICAL LABORATORIES INC
120 RESEARCH DRIVE
STRATFORD, CT 06615

NY Lab Id No: 10854
EPA Lab Code: CT00106

is hereby APPROVED as an Environmental Laboratory in conformance with the
National Environmental Laboratory Accreditation Conference Standards for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Chlorophenoxy Acid Pesticides

Dicamba EPA 8151A

Haloethers

4-Bromophenylphenyl ether EPA 8270C

EPA 8270D

4-Chlorophenylphenyl ether EPA 8270C

EPA 8270D

Bis(2-chloroisopropyl) ether EPA 8270C

EPA 8270D

Bis(2-chloroethoxy)methane EPA 8270C

EPA 8270D

Bis(2-chloroethyl) ether EPA 8270D

Metals I

Barium, Total EPA 6010B

Cadmium, Total EPA 6010B

Chromium, Total EPA 6010B

Lead, Total EPA 6010B

Nickel, Total EPA 6010B

Silver, Total EPA 6010B

Metals II

Antimony, Total EPA 6010B

Arsenic, Total EPA 6010B

Selenium, Total EPA 6010B

Miscellaneous

Hydrogen Ion (pH) EPA 9040B

Miscellaneous

Hydrogen Ion (pH) EPA 9045C

Nitroaromatics and Isophorone

2,4-Dinitrotoluene EPA 8270C

EPA 8270D

2,6-Dinitrotoluene EPA 8270C

EPA 8270D

Isophorone EPA 8270C

EPA 8270D

Nitrobenzene EPA 8270C

EPA 8270D

Pyridine EPA 8270D

Nitrosoamines

N-Nitrosodi-n-propylamine EPA 8270C

EPA 8270D

Petroleum Hydrocarbons

Diesel Range Organics EPA 8015 B

Phthalate Esters

Benzyl butyl phthalate EPA 8270C

EPA 8270D

Bis(2-ethylhexyl) phthalate EPA 8270C

EPA 8270D

Diethyl phthalate EPA 8270C

EPA 8270D

Dimethyl phthalate EPA 8270C

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All approved analytes are listed below:

Phthalate Esters

Dimethyl phthalate	EPA 8270D
Di-n-butyl phthalate	EPA 8270C
	EPA 8270D
Di-n-octyl phthalate	EPA 8270C
	EPA 8270D

Polychlorinated Biphenyls

PCB-1016	EPA 8082
PCB-1221	EPA 8082
PGB-1232	EPA 8082
PCB-1242	EPA 8082
PCB-1248	EPA 8082
PCB-1254	EPA 8082
PCB-1260	EPA 8082

Polynuclear Aromatic Hydrocarbons

Acenaphthene	EPA 8270C
	EPA 8270D
Acenaphthylene	EPA 8270C
	EPA 8270D
Anthracene	EPA 8270C
	EPA 8270D
Benzo(a)anthracene	EPA 8270C
	EPA 8270D
Benzo(a)pyrene	EPA 8270C
	EPA 8270D
Benzo(b)fluoranthene	EPA 8270C

Polynuclear Aromatic Hydrocarbons

Benzo(b)fluoranthene	EPA 8270D
Benzo(ghi)perylene	EPA 8270C
	EPA 8270D
Benzo(k)fluoranthene	EPA 8270C
	EPA 8270D
Chrysene	EPA 8270C
	EPA 8270D
Dibenzo(a,h)anthracene	EPA 8270C
	EPA 8270D
Fluoranthene	EPA 8270C
	EPA 8270D
Fluorene	EPA 8270C
	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 8270C
	EPA 8270D

Naphthalene

Phenanthrene

Pyrene

Priority Pollutant Phenols

2,4,6-Trichlorophenol	EPA 8270C
	EPA 8270D
2,4-Dichlorophenol	EPA 8270C

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All approved analytes are listed below:

Priority Pollutant Phenols

2,4-Dichlorophenol	EPA 8270D
2,4-Dimethylphenol	EPA 8270C EPA 8270D
2,4-Dinitrophenol	EPA 8270C EPA 8270D
2-Chlorophenol	EPA 8270C EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 8270C EPA 8270D
2-Methylphenol	EPA 8270C EPA 8270D
2-Nitrophenol	EPA 8270C EPA 8270D
4-Chloro-3-methylphenol	EPA 8270C EPA 8270D
4-Nitrophenol	EPA 8270C EPA 8270D
Pentachlorophenol	EPA 8270C EPA 8270D
Phenol	EPA 8270C EPA 8270D

Semi-Volatile Organics

Benzyl alcohol EPA 8270D

Volatile Aromatics

1,2-Dichlorobenzene EPA 8260B

Volatile Aromatics

1,3-Dichlorobenzene	EPA 8260B
1,4-Dichlorobenzene	EPA 8260B
Benzene	EPA 8260B
Chlorobenzene	EPA 8260B
Ethyl benzene	EPA 8260B
Toluene	EPA 8260B
Total Xylenes	EPA 8260B

Volatile Halocarbons

1,1,1-Trichloroethane	EPA 8260B
1,1,2,2-Tetrachloroethane	EPA 8260B
1,1,2-Trichloroethane	EPA 8260B
1,1-Dichloroethane	EPA 8260B
1,1-Dichloroethene	EPA 8260B
1,2-Dichloroethane	EPA 8260B
2-Chloroethylvinyl ether	EPA 8260B
Bromodichloromethane	EPA 8260B
Bromoform	EPA 8260B
Bromomethane	EPA 8260B
Carbon tetrachloride	EPA 8260B
Chloroethane	EPA 8260B
Chloroform	EPA 8260B
Chloromethane	EPA 8260B
cis-1,3-Dichloropropene	EPA 8260B
Dibromochloromethane	EPA 8260B
Dichlorodifluoromethane	EPA 8260B

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120 RESEARCH DRIVE
STRATFORD, CT 06615

NY Lab Id No: 16854
EPA Lab Code: CT00106

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ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE

All approved analytes are listed below:

Volatile Halocarbons

Methylene chloride	EPA 8260B
Tetrachloroethene	EPA 8260B
trans-1,3-Dichloropropene	EPA 8260B
Trichloroethene	EPA 8260B
Trichlorofluoromethane	EPA 8260B
Vinyl chloride	EPA 8260B

Sample Preparation Methods

EPA 1310
EPA 1311
EPA 3005A
EPA 3010A
EPA 3031
EPA 3040A
EPA 3050B
EPA 3060A
EPA 3545
EPA 3550B
EPA 3580
EPA 3585
EPA 5030B
EPA 5035

Serial No.: 44888

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APPENDIX C
LABORATORY ANALYTICAL REPORTS

YORK

ANALYTICAL LABORATORIES, INC.

Technical Report

prepared for:

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Clay Patterson

Report Date: 08/08/2011
Client Project ID: 170150101
York Project (SDG) No.: 11G0830

CT License No. PH-0723

New Jersey License No. CT-005



New York License No. 10854

PA License No. 68-04440

120 RESEARCH DRIVE

STRATFORD, CT 06615

(203) 325-1371

FAX (203) 357-0166

Report Date: 08/08/2011
Client Project ID: 170150101
York Project (SDG) No.: 11G0830

Langan Engineering & Environmental Services (NYC)

21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Clay Patterson

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on July 26, 2011 and listed below. The project was identified as your project: **170150101**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Notes section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the attachment to this report, and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

<u>York Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
11G0830-01	B-3 (0-2')	Soil	07/26/2011	07/26/2011
11G0830-02	B-5 (0-2')	Soil	07/26/2011	07/26/2011
11G0830-03	B-6 (0-2')	Soil	07/26/2011	07/26/2011
11G0830-04	B-7 (0-2')	Soil	07/25/2011	07/26/2011
11G0830-05	B-8 (0-2')	Soil	07/26/2011	07/26/2011
11G0830-06	B-9 (0-2')	Soil	07/25/2011	07/26/2011
11G0830-07	B-10 (0-2')	Soil	07/25/2011	07/26/2011
11G0830-08	B-11 (0-2')	Soil	07/25/2011	07/26/2011
11G0830-09	WC-1	Soil	07/26/2011	07/26/2011

General Notes for York Project (SDG) No.: 11G0830

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All samples were received in proper condition for analysis with proper documentation, unless otherwise noted.
6. All analyses conducted met method or Laboratory SOP requirements. See the Qualifiers and/or Narrative sections for further information.
7. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
8. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.

Approved By:



Date: 08/08/2011

Robert Q. Bradley
Executive Vice President / Laboratory Director

YORK

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: B-3 (0-2')

York Sample ID: 11G0830-01

York Project (SDG) No.
11G0830

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 26, 2011 10:30 am

Date Received
07/26/2011

Total Petroleum Hydrocarbons-DRO

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	27.7		mg/kg dry	7.33	12.6	1	EPA SW846-8015B	08/04/2011 14:51	08/05/2011 11:55	SR
	Surrogate Recoveries	Result			Acceptance Range						
638-68-6	Surrogate: <i>Triacotane</i>	62.9 %			30-150						

Lead TCLP by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-92-1	Lead	0.420		mg/L	0.00120	0.00300	1	EPA 1311/6010B	08/01/2011 15:48	08/02/2011 04:52	MW

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	% Solids	79.1		%	0.100	0.100	1	SM 2540G	08/01/2011 12:16	08/01/2011 12:16	MZ

Sample Information

Client Sample ID: B-5 (0-2')

York Sample ID: 11G0830-02

York Project (SDG) No.
11G0830

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 26, 2011 9:30 am

Date Received
07/26/2011

Total Petroleum Hydrocarbons-DRO

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	36.7		mg/kg dry	7.18	12.4	1	EPA SW846-8015B	08/04/2011 14:51	08/05/2011 11:55	SR
	Surrogate Recoveries	Result			Acceptance Range						
638-68-6	Surrogate: <i>Triacotane</i>	70.1 %			30-150						

Lead TCLP by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-92-1	Lead	0.992		mg/L	0.00120	0.00300	1	EPA 1311/6010B	08/01/2011 15:48	08/02/2011 05:11	MW

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	% Solids	80.8		%	0.100	0.100	1	SM 2540G	08/01/2011 12:16	08/01/2011 12:16	MZ

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: B-6 (0-2')		York Sample ID: 11G0830-03	
<u>York Project (SDG) No.</u> 11G0830	<u>Client Project ID</u> 170150101	<u>Matrix</u> Soil	<u>Collection Date/Time</u> July 26, 2011 9:00 am
			<u>Date Received</u> 07/26/2011

Total Petroleum Hydrocarbons-DRO

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	36.5		mg/kg dry	6.96	12.0	1	EPA SW846-8015B	08/04/2011 14:51	08/05/2011 11:55	SR
	Surrogate Recoveries	Result			Acceptance Range						
638-68-6	<i>Surrogate: Triacontane</i>	83.7 %			30-150						

Lead TCLP by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-92-1	Lead	0.00722		mg/L	0.00120	0.00300	1	EPA 1311/6010B	08/01/2011 15:48	08/02/2011 05:16	MW

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	% Solids	83.3		%	0.100	0.100	1	SM 2540G	08/01/2011 12:16	08/01/2011 12:16	MZ

Sample Information

Client Sample ID: B-7 (0-2')		York Sample ID: 11G0830-04	
<u>York Project (SDG) No.</u> 11G0830	<u>Client Project ID</u> 170150101	<u>Matrix</u> Soil	<u>Collection Date/Time</u> July 25, 2011 11:15 am
			<u>Date Received</u> 07/26/2011

Total Petroleum Hydrocarbons-DRO

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	30.0		mg/kg dry	10.1	17.4	1	EPA SW846-8015B	08/04/2011 14:51	08/05/2011 11:55	SR
	Surrogate Recoveries	Result			Acceptance Range						
638-68-6	<i>Surrogate: Triacontane</i>	71.4 %			30-150						

Lead TCLP by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-92-1	Lead	0.183		mg/L	0.00120	0.00300	1	EPA 1311/6010B	08/01/2011 15:48	08/02/2011 05:24	MW

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	% Solids	57.6		%	0.100	0.100	1	SM 2540G	08/01/2011 12:16	08/01/2011 12:16	MZ

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: B-8 (0-2')

York Sample ID: 11G0830-05

York Project (SDG) No.
11G0830

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 26, 2011 8:00 am

Date Received
07/26/2011

Total Petroleum Hydrocarbons-DRO

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	25.5		mg/kg dry	6.53	11.3	1	EPA SW846-8015B	08/04/2011 14:51	08/05/2011 11:55	SR
	Surrogate Recoveries	Result			Acceptance Range						
638-68-6	Surrogate: Triacontane	74.6 %			30-150						

Lead TCLP by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-92-1	Lead	0.223		mg/L	0.00120	0.00300	1	EPA 1311/6010B	08/01/2011 15:48	08/02/2011 05:29	MW

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	% Solids	88.8		%	0.100	0.100	1	SM 2540G	08/01/2011 12:16	08/01/2011 12:16	MZ

Sample Information

Client Sample ID: B-9 (0-2')

York Sample ID: 11G0830-06

York Project (SDG) No.
11G0830

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 25, 2011 3:00 pm

Date Received
07/26/2011

Total Petroleum Hydrocarbons-DRO

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	ND		mg/kg dry	6.74	11.6	1	EPA SW846-8015B	08/04/2011 14:51	08/05/2011 11:55	SR
	Surrogate Recoveries	Result			Acceptance Range						
638-68-6	Surrogate: Triacontane	59.6 %			30-150						

Lead TCLP by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-92-1	Lead	0.282		mg/L	0.00120	0.00300	1	EPA 1311/6010B	08/01/2011 15:48	08/02/2011 05:34	MW

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	% Solids	86.1		%	0.100	0.100	1	SM 2540G	08/01/2011 12:16	08/01/2011 12:16	MZ

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: B-10 (0-2')		York Sample ID: 11G0830-07	
York Project (SDG) No. 11G0830	Client Project ID 170150101	Matrix Soil	Collection Date/Time July 25, 2011 12:00 pm
			Date Received 07/26/2011

Total Petroleum Hydrocarbons-DRO

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	ND		mg/kg dry	6.87	11.8	1	EPA SW846-8015B	08/04/2011 14:51	08/05/2011 11:55	SR
	Surrogate Recoveries	Result			Acceptance Range						
638-68-6	Surrogate: Triacotane	79.2 %			30-150						

Lead TCLP by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-92-1	Lead	0.0574		mg/L	0.00120	0.00300	1	EPA 1311/6010B	08/01/2011 15:48	08/02/2011 05:39	MW

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	% Solids	84.4		%	0.100	0.100	1	SM 2540G	08/01/2011 12:16	08/01/2011 12:16	MZ

Sample Information

Client Sample ID: B-11 (0-2')		York Sample ID: 11G0830-08	
York Project (SDG) No. 11G0830	Client Project ID 170150101	Matrix Soil	Collection Date/Time July 25, 2011 2:00 pm
			Date Received 07/26/2011

Total Petroleum Hydrocarbons-DRO

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	ND		mg/kg dry	6.52	11.2	1	EPA SW846-8015B	08/04/2011 14:51	08/05/2011 11:55	SR
	Surrogate Recoveries	Result			Acceptance Range						
638-68-6	Surrogate: Triacotane	70.5 %			30-150						

Lead TCLP by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-92-1	Lead	0.0502		mg/L	0.00120	0.00300	1	EPA 1311/6010B	08/01/2011 15:48	08/02/2011 05:44	MW

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	% Solids	89.0		%	0.100	0.100	1	SM 2540G	08/01/2011 12:16	08/01/2011 12:16	MZ

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: WC-1

York Sample ID: 11G0830-09

York Project (SDG) No.
11G0830

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 26, 2011 10:00 am

Date Received
07/26/2011

Volatile Organics, TCL (Target Compound List)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	2.8	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	1.7	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	1.8	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	1.8	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	2.0	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	3.9	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	1.4	27	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/kg dry	3.9	27	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	2.0	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	1.9	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	0.65	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
78-93-3	2-Butanone	45		ug/kg dry	7.6	27	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
591-78-6	2-Hexanone	ND		ug/kg dry	2.6	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	7.8	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
67-64-1	Acetone	120	B	ug/kg dry	9.2	27	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
71-43-2	Benzene	ND		ug/kg dry	1.4	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
75-27-4	Bromodichloromethane	ND		ug/kg dry	1.8	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
75-25-2	Bromoform	ND		ug/kg dry	1.7	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
74-83-9	Bromomethane	ND		ug/kg dry	3.7	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
75-15-0	Carbon disulfide	5.1	J	ug/kg dry	1.9	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
56-23-5	Carbon tetrachloride	ND		ug/kg dry	3.1	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
108-90-7	Chlorobenzene	ND		ug/kg dry	1.0	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
75-00-3	Chloroethane	ND		ug/kg dry	2.2	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
67-66-3	Chloroform	ND		ug/kg dry	1.1	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
74-87-3	Chloromethane	ND		ug/kg dry	2.6	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	2.8	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	1.0	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
124-48-1	Dibromochloromethane	ND		ug/kg dry	2.0	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
75-71-8	Dichlorodifluoromethane	ND		ug/kg dry	2.4	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
100-41-4	Ethyl Benzene	ND		ug/kg dry	1.0	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	1.1	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
75-09-2	Methylene chloride	31	B	ug/kg dry	3.1	27	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
95-47-6	o-Xylene	ND		ug/kg dry	1.5	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
1330-20-7P/M	p- & m- Xylenes	ND		ug/kg dry	1.6	27	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: WC-1

York Sample ID: 11G0830-09

York Project (SDG) No.
11G0830

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 26, 2011 10:00 am

Date Received
07/26/2011

Volatiles Organics, TCL (Target Compound List)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
100-42-5	Styrene	ND		ug/kg dry	1.3	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
127-18-4	Tetrachloroethylene	ND		ug/kg dry	1.5	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
108-88-3	Toluene	ND		ug/kg dry	0.68	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	1.9	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	2.0	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
79-01-6	Trichloroethylene	ND		ug/kg dry	1.7	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	2.7	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
75-01-4	Vinyl Chloride	ND		ug/kg dry	2.9	14	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
1330-20-7	Xylenes, Total	ND		ug/kg dry	3.1	41	2	EPA SW846-8260B	08/01/2011 18:39	08/01/2011 18:39	SS
Surrogate Recoveries		Result	Acceptance Range								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	106 %	72.6-129								
460-00-4	Surrogate: p-Bromofluorobenzene	96.3 %	63.5-145								
2037-26-5	Surrogate: Toluene-d8	100 %	86.6-116								

Volatiles Organics, TCLP RCRA List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5030B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		ug/L	13	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 13:50	SS
107-06-2	1,2-Dichloroethane	ND		ug/L	6.5	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 13:50	SS
106-46-7	1,4-Dichlorobenzene	ND		ug/L	6.8	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 13:50	SS
78-93-3	2-Butanone	ND		ug/L	26	100	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 13:50	SS
71-43-2	Benzene	ND		ug/L	4.8	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 13:50	SS
56-23-5	Carbon tetrachloride	ND		ug/L	10	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 13:50	SS
108-90-7	Chlorobenzene	ND		ug/L	3.5	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 13:50	SS
67-66-3	Chloroform	ND		ug/L	3.6	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 13:50	SS
127-18-4	Tetrachloroethylene	ND		ug/L	5.2	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 13:50	SS
79-01-6	Trichloroethylene	ND		ug/L	5.7	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 13:50	SS
75-01-4	Vinyl Chloride	ND		ug/L	9.7	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 13:50	SS
Surrogate Recoveries		Result	Acceptance Range								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	93.1 %	70-130								
460-00-4	Surrogate: p-Bromofluorobenzene	103 %	70-130								
2037-26-5	Surrogate: Toluene-d8	90.6 %	70-130								

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: WC-1

York Sample ID: 11G0830-09

York Project (SDG) No.
11G0830

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 26, 2011 10:00 am

Date Received
07/26/2011

Semi-Volatiles, EPA TCL List

Sample Prepared by Method: EPA 3550B

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	372	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	299	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	325	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	234	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
95-95-4	2,4,5-Trichlorophenol	ND		ug/kg dry	186	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
88-06-2	2,4,6-Trichlorophenol	ND		ug/kg dry	334	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
120-83-2	2,4-Dichlorophenol	ND		ug/kg dry	279	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
105-67-9	2,4-Dimethylphenol	ND		ug/kg dry	219	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
51-28-5	2,4-Dinitrophenol	ND		ug/kg dry	573	1370	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
121-14-2	2,4-Dinitrotoluene	ND		ug/kg dry	299	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
606-20-2	2,6-Dinitrotoluene	ND		ug/kg dry	325	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
91-58-7	2-Chloronaphthalene	ND		ug/kg dry	208	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
95-57-8	2-Chlorophenol	ND		ug/kg dry	398	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
91-57-6	2-Methylnaphthalene	ND		ug/kg dry	238	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
95-48-7	2-Methylphenol	ND		ug/kg dry	251	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
88-74-4	2-Nitroaniline	ND		ug/kg dry	354	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
88-75-5	2-Nitrophenol	ND		ug/kg dry	234	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
100-01-6	3- & 4-Methylphenols	ND		ug/kg dry	307	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
91-94-1	3,3'-Dichlorobenzidine	ND		ug/kg dry	172	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
99-09-2	3-Nitroaniline	ND		ug/kg dry	247	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
534-52-1	4,6-Dinitro-2-methylphenol	ND		ug/kg dry	516	1370	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
101-55-3	4-Bromophenyl phenyl ether	ND		ug/kg dry	285	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
59-50-7	4-Chloro-3-methylphenol	ND		ug/kg dry	73.6	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
106-47-8	4-Chloroaniline	ND		ug/kg dry	270	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
7005-72-3	4-Chlorophenyl phenyl ether	ND		ug/kg dry	197	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
100-02-7	4-Nitroaniline	ND		ug/kg dry	227	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
56-57-5	4-Nitrophenol	ND		ug/kg dry	247	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
83-32-9	Acenaphthene	ND		ug/kg dry	396	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
208-96-8	Acenaphthylene	ND		ug/kg dry	191	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
120-12-7	Anthracene	ND		ug/kg dry	169	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	264	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	178	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	260	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	205	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	264	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: WC-1

York Sample ID: 11G0830-09

York Project (SDG) No.
11G0830

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 26, 2011 10:00 am

Date Received
07/26/2011

Semi-Volatiles, EPA TCL List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
65-85-0	Benzoic acid	ND		ug/kg dry	467	1370	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
100-51-6	Benzyl alcohol	ND		ug/kg dry	221	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
85-68-7	Benzyl butyl phthalate	ND		ug/kg dry	285	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
111-91-1	Bis(2-chloroethoxy)methane	ND		ug/kg dry	252	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
111-44-4	Bis(2-chloroethyl)ether	ND		ug/kg dry	232	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
108-60-1	Bis(2-chloroisopropyl)ether	ND		ug/kg dry	254	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
117-81-7	Bis(2-ethylhexyl)phthalate	632	J	ug/kg dry	229	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
218-01-9	Chrysene	ND		ug/kg dry	275	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	173	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
132-64-9	Dibenzofuran	ND		ug/kg dry	220	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
84-66-2	Diethyl phthalate	ND		ug/kg dry	358	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
131-11-3	Dimethyl phthalate	ND		ug/kg dry	197	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
84-74-2	Di-n-butyl phthalate	ND		ug/kg dry	204	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
117-84-0	Di-n-octyl phthalate	ND		ug/kg dry	307	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
206-44-0	Fluoranthene	ND		ug/kg dry	396	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
86-73-7	Fluorene	ND		ug/kg dry	191	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
118-74-1	Hexachlorobenzene	ND		ug/kg dry	111	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	273	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
77-47-4	Hexachlorocyclopentadiene	ND		ug/kg dry	508	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
67-72-1	Hexachloroethane	ND		ug/kg dry	246	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	252	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
78-59-1	Isophorone	ND		ug/kg dry	254	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
91-20-3	Naphthalene	ND		ug/kg dry	204	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
98-95-3	Nitrobenzene	ND		ug/kg dry	307	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
621-64-7	N-nitroso-di-n-propylamine	ND		ug/kg dry	178	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
86-30-6	N-Nitrosodiphenylamine	ND		ug/kg dry	396	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
87-86-5	Pentachlorophenol	ND		ug/kg dry	191	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
85-01-8	Phenanthrene	ND		ug/kg dry	252	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
108-95-2	Phenol	ND		ug/kg dry	273	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD
129-00-0	Pyrene	ND		ug/kg dry	245	683	1	EPA SW846-8270C	08/04/2011 11:18	08/04/2011 21:54	TD

Surrogate Recoveries

Result

Acceptance Range

5175-83-7	Surrogate: 2,4,6-Tribromophenol	63.7 %	15-110
321-60-8	Surrogate: 2-Fluorobiphenyl	37.4 %	30-130
367-12-4	Surrogate: 2-Fluorophenol	47.7 %	15-110
4165-60-0	Surrogate: Nitrobenzene-d5	33.0 %	30-130
4165-62-2	Surrogate: Phenol-d5	46.0 %	15-110

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: WC-1

York Sample ID: 11G0830-09

York Project (SDG) No.

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11G0830

170150101

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July 26, 2011 10:00 am

07/26/2011

Semi-Volatiles, EPA TCL List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
1718-51-0	Surrogate: Terphenyl-d14	65.3 %			30-130						

Semi-Volatiles, TCLP RCRA Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
106-46-7	1,4-Dichlorobenzene	ND		ug/L	6.45	10.0	1	EPA SW846- 8270C/1311	07/28/2011 11:31	07/29/2011 12:39	TD
95-95-4	2,4,5-Trichlorophenol	ND		ug/L	7.22	10.0	1	EPA SW846- 8270C/1311	07/28/2011 11:31	07/29/2011 12:39	TD
88-06-2	2,4,6-Trichlorophenol	ND		ug/L	6.54	10.0	1	EPA SW846- 8270C/1311	07/28/2011 11:31	07/29/2011 12:39	TD
121-14-2	2,4-Dinitrotoluene	ND		ug/L	4.73	10.0	1	EPA SW846- 8270C/1311	07/28/2011 11:31	07/29/2011 12:39	TD
95-48-7	2-Methylphenol	ND		ug/L	1.71	10.0	1	EPA SW846- 8270C/1311	07/28/2011 11:31	07/29/2011 12:39	TD
100-01-6	3- & 4-Methylphenols	ND		ug/L	7.43	10.0	1	EPA SW846- 8270C/1311	07/28/2011 11:31	07/29/2011 12:39	TD
1319-77-3	Cresols, total	ND		ug/L	23.2	30.0	1	EPA SW846- 8270C/1311	07/28/2011 11:31	07/29/2011 12:39	TD
118-74-1	Hexachlorobenzene	ND		ug/L	5.91	10.0	1	EPA SW846- 8270C/1311	07/28/2011 11:31	07/29/2011 12:39	TD
87-68-3	Hexachlorobutadiene	ND		ug/L	6.62	10.0	1	EPA SW846- 8270C/1311	07/28/2011 11:31	07/29/2011 12:39	TD
67-72-1	Hexachloroethane	ND		ug/L	7.26	10.0	1	EPA SW846- 8270C/1311	07/28/2011 11:31	07/29/2011 12:39	TD
98-95-3	Nitrobenzene	ND		ug/L	3.93	10.0	1	EPA SW846- 8270C/1311	07/28/2011 11:31	07/29/2011 12:39	TD
87-86-5	Pentachlorophenol	ND		ug/L	7.53	10.0	1	EPA SW846- 8270C/1311	07/28/2011 11:31	07/29/2011 12:39	TD
110-86-1	Pyridine	ND		ug/L	6.37	10.0	1	EPA SW846- 8270C/1311	07/28/2011 11:31	07/29/2011 12:39	TD
	Surrogate Recoveries	Result			Acceptance Range						
5175-83-7	Surrogate: 2,4,6-Tribromophenol	32.1 %			15-110						
321-60-8	Surrogate: 2-Fluorobiphenyl	34.9 %			30-130						
367-12-4	Surrogate: 2-Fluorophenol	14.1 %	S-04		15-110						
4165-60-0	Surrogate: Nitrobenzene-d5	35.4 %			30-130						
4165-62-2	Surrogate: Phenol-d5	7.96 %	S-04		10-110						
1718-51-0	Surrogate: Terphenyl-d14	39.0 %			30-130						

Pesticides, 8081 target list

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		ug/kg dry	4.41	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
72-55-9	4,4'-DDE	ND		ug/kg dry	5.67	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
50-29-3	4,4'-DDT	ND		ug/kg dry	4.44	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
309-00-2	Aldrin	ND		ug/kg dry	6.33	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
319-84-6	alpha-BHC	ND		ug/kg dry	7.47	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
5103-71-9	alpha-Chlordane	ND		ug/kg dry	5.58	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
319-85-7	beta-BHC	ND		ug/kg dry	6.24	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
319-86-8	delta-BHC	ND		ug/kg dry	5.40	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
60-57-1	Dieldrin	ND		ug/kg dry	5.85	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: WC-1

York Sample ID: 11G0830-09

York Project (SDG) No.
11G0830

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170150101

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Pesticides, 8081 target list

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
959-98-8	Endosulfan I	ND		ug/kg dry	4.80	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
33213-65-9	Endosulfan II	ND		ug/kg dry	6.06	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
1031-07-8	Endosulfan sulfate	ND		ug/kg dry	5.07	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
72-20-8	Endrin	ND		ug/kg dry	6.00	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
7421-93-4	Endrin aldehyde	ND		ug/kg dry	6.66	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
53494-70-5	Endrin ketone	ND		ug/kg dry	4.35	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
58-89-9	gamma-BHC (Lindane)	ND		ug/kg dry	6.87	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
5103-74-2	gamma-Chlordane	ND		ug/kg dry	4.35	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
76-44-8	Heptachlor	ND		ug/kg dry	7.89	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
1024-57-3	Heptachlor epoxide	ND		ug/kg dry	4.35	9.90	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
72-43-5	Methoxychlor	ND		ug/kg dry	25.5	49.5	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
8001-35-2	Toxaphene	ND		ug/kg dry	429	990	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 17:54	JW
Surrogate Recoveries		Result			Acceptance Range						
2051-24-3	Surrogate: Decachlorobiphenyl	71.7 %			30-150						
877-09-8	Surrogate: Tetrachloro-m-xylene	79.5 %			30-150						

Pesticides, TCLP RCRA List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
57-74-9	Chlordane, total	ND		ug/L	0.0114	0.0114	1	EPA SW 846-8081/1311	08/01/2011 07:55	08/01/2011 20:16	JW
72-20-8	Endrin	ND		ug/L	0.00269	0.00286	1	EPA SW 846-8081/1311	08/01/2011 07:55	08/01/2011 20:16	JW
58-89-9	gamma-BHC (Lindane)	ND		ug/L	0.00274	0.00286	1	EPA SW 846-8081/1311	08/01/2011 07:55	08/01/2011 20:16	JW
76-44-8	Heptachlor	ND		ug/L	0.00271	0.00286	1	EPA SW 846-8081/1311	08/01/2011 07:55	08/01/2011 20:16	JW
1024-57-3	Heptachlor epoxide	ND		ug/L	0.00214	0.00286	1	EPA SW 846-8081/1311	08/01/2011 07:55	08/01/2011 20:16	JW
72-43-5	Methoxychlor	ND		ug/L	0.00560	0.0143	1	EPA SW 846-8081/1311	08/01/2011 07:55	08/01/2011 20:16	JW
8001-35-2	Toxaphene	ND		ug/L	0.286	0.286	1	EPA SW 846-8081/1311	08/01/2011 07:55	08/01/2011 20:16	JW
Surrogate Recoveries		Result			Acceptance Range						
2051-24-3	Surrogate: Decachlorobiphenyl	45.2 %			30-150						
877-09-8	Surrogate: Tetrachloro-m-xylene	65.9 %			30-150						

Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.0324	0.0696	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 18:54	JW
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.0324	0.0696	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 18:54	JW
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.0324	0.0696	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 18:54	JW
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.0324	0.0696	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 18:54	JW

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

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Polychlorinated Biphenyls (PCB)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.0324	0.0696	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 18:54	JW
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.0278	0.0696	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 18:54	JW
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.0278	0.0696	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 18:54	JW
37324-23-5	Aroclor 1262	ND		mg/kg dry	0.0278	0.0696	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 18:54	JW
11100-14-4	Aroclor 1268	ND		mg/kg dry	0.0278	0.0696	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 18:54	JW
1336-36-3	Total PCBs	ND		mg/kg dry	0.0278	0.0696	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 18:54	JW
Surrogate Recoveries		Result			Acceptance Range						
2051-24-3	Surrogate: Decachlorobiphenyl	64.5 %			30-150						
877-09-8	Surrogate: Tetrachloro-m-xylene	69.0 %			30-150						

Herbicides, Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B/8151A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
93-76-5	2,4,5-T	ND		ug/kg dry	81.9	137	1	EPA SW846-8151B	08/02/2011 08:17	08/02/2011 14:00	JW
93-72-1	2,4,5-TP (Silvex)	ND		ug/kg dry	88.7	137	1	EPA SW846-8151B	08/02/2011 08:17	08/02/2011 14:00	JW
94-75-7	2,4-D	ND		ug/kg dry	98.3	137	1	EPA SW846-8151B	08/02/2011 08:17	08/02/2011 14:00	JW
Surrogate Recoveries		Result			Acceptance Range						
19719-28-9	Surrogate: 2,4-Dichlorophenylacetic acid	146 %			10-148						

Herbicides, TCLP Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3553A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
93-72-1	2,4,5-TP (Silvex)	ND		ug/L	0.0180	5.00	1	EPA SW846-8151B/1311	08/01/2011 08:24	08/02/2011 00:00	JW
94-75-7	2,4-D	ND		ug/L	0.0197	5.00	1	EPA SW846-8151B/1311	08/01/2011 08:24	08/02/2011 00:00	JW
Surrogate Recoveries		Result			Acceptance Range						
19719-28-9	Surrogate: 2,4-Dichlorophenylacetic acid	125 %			30-150						

Metals, Target Analyte

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW 846-3050B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7429-90-5	Aluminum	13600		mg/kg dry	1.72	2.73	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7440-36-0	Antimony	1.89		mg/kg dry	0.191	0.683	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7440-38-2	Arsenic	10.1		mg/kg dry	0.259	0.683	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7440-39-3	Barium	357		mg/kg dry	0.328	0.683	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7440-41-7	Beryllium	ND		mg/kg dry	0.011	0.014	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7440-43-9	Cadmium	ND		mg/kg dry	0.177	0.683	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7440-70-2	Calcium	5370		mg/kg dry	0.059	2.73	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7440-47-3	Chromium	30.9		mg/kg dry	0.109	0.683	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7440-48-4	Cobalt	9.55		mg/kg dry	0.109	0.683	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW

YORK

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July 26, 2011 10:00 am

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Metals, Target Analyte

Sample Prepared by Method: EPA SW 846-3050B

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-50-8	Copper	260		mg/kg dry	0.191	0.683	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7439-89-6	Iron	29800		mg/kg dry	0.751	1.37	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7439-92-1	Lead	1580		mg/kg dry	0.137	0.410	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7439-95-4	Magnesium	3670		mg/kg dry	1.12	2.73	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7439-96-5	Manganese	575		mg/kg dry	0.109	1.37	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7440-02-0	Nickel	32.2		mg/kg dry	0.096	0.683	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7440-09-7	Potassium	2310		mg/kg dry	3.71	13.7	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7782-49-2	Selenium	4.35		mg/kg dry	0.288	0.683	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7440-22-4	Silver	ND		mg/kg dry	0.123	0.683	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7440-23-5	Sodium	223		mg/kg dry	9.17	13.7	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7440-28-0	Thallium	ND		mg/kg dry	0.259	0.683	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7440-62-2	Vanadium	38.7		mg/kg dry	0.109	0.683	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW
7440-66-6	Zinc	422		mg/kg dry	0.096	0.683	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:07	MW

Metals, TCLP RCRA

Sample Prepared by Method: EPA SW 846-3010A

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-38-2	Arsenic	0.012		mg/L	0.001	0.010	1	EPA SW846-6010B/1311	08/01/2011 15:48	08/02/2011 06:01	MW
7440-39-3	Barium	1.20		mg/L	0.004	0.010	1	EPA SW846-6010B/1311	08/01/2011 15:48	08/02/2011 06:01	MW
7440-43-9	Cadmium	ND		mg/L	0.001	0.003	1	EPA SW846-6010B/1311	08/01/2011 15:48	08/02/2011 06:01	MW
7440-47-3	Chromium	ND		mg/L	0.0009	0.005	1	EPA SW846-6010B/1311	08/01/2011 15:48	08/02/2011 06:01	MW
7439-92-1	Lead	0.130		mg/L	0.001	0.003	1	EPA SW846-6010B/1311	08/01/2011 15:48	08/02/2011 06:01	MW
7782-49-2	Selenium	ND		mg/L	0.002	0.010	1	EPA SW846-6010B/1311	08/01/2011 15:48	08/02/2011 06:01	MW
7440-22-4	Silver	ND		mg/L	0.001	0.005	1	EPA SW846-6010B/1311	08/01/2011 15:48	08/02/2011 06:01	MW

Mercury by 7470/7471

Sample Prepared by Method: EPA SW846-7471

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	Mercury	ND		mg/kg dry	0.132	0.137	1	EPA SW846-7471	07/29/2011 11:28	07/29/2011 11:28	AA

Mercury, TCLP

Sample Prepared by Method: EPA SW846-7470

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	Mercury	ND		mg/L	0.000039000	0.0002000	1	EPA SW846-7470/1311	08/01/2011 13:33	08/01/2011 13:33	AA

YORK

ANALYTICAL LABORATORIES, INC.

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Soil

July 26, 2011 10:00 am

07/26/2011

Ignitability

Log-in Notes:

Sample Notes:

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Ignitability	Non-Ignit.		P/F			1	EPA SW846-1030P	07/27/2011 13:29	07/27/2011 13:29	AD

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	% Solids	73.3		%	0.100	0.100	1	SM 2540G	08/01/2011 12:16	08/01/2011 12:16	MZ

pH

Log-in Notes:

Sample Notes:

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	pH	7.98		pH units		0.500	1	SM 4500 H+B	07/27/2011 16:20	07/27/2011 16:20	MZ

Reactivity-Cyanide

Log-in Notes:

Sample Notes:

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Reactivity - Cyanide	ND		mg/kg	0.250	0.250	1	EPA SW-846 Ch.7.3.3	08/02/2011 13:04	08/02/2011 13:04	AD

Reactivity-Sulfide

Log-in Notes:

Sample Notes:

Sample Prepared by Method: Analysis Preparation

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Reactivity - Sulfide	ND		mg/kg	15.0	15.0	1	EPA SW846 Ch.7.3.4	08/02/2011 14:23	08/02/2011 14:23	AD

YORK

ANALYTICAL LABORATORIES, INC.

Analytical Batch Summary

Batch ID: BG10978 **Preparation Method:** Analysis Preparation **Prepared By:** AD

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-09	WC-1	07/27/11

Batch ID: BG10981 **Preparation Method:** Analysis Preparation **Prepared By:** MZ

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-09	WC-1	07/27/11
BG10981-DUP1	Duplicate	07/27/11

Batch ID: BG11026 **Preparation Method:** EPA 3510C **Prepared By:** KAM

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-09	WC-1	07/28/11
BG11026-BLK1	Blank	07/28/11
BG11026-BS1	LCS	07/28/11
BG11026-BSD1	LCS Dup	07/28/11

Batch ID: BG11039 **Preparation Method:** EPA SW846-7471 **Prepared By:** AA

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-09	WC-1	07/29/11
BG11039-BLK1	Blank	07/29/11
BG11039-BS1	LCS	07/29/11

Batch ID: BG11066 **Preparation Method:** EPA SW846-7470 **Prepared By:** AA

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-09	WC-1	08/01/11
BG11066-BLK1	Blank	08/01/11
BG11066-BS1	LCS	08/01/11

Batch ID: BH10001 **Preparation Method:** % Solids Prep **Prepared By:** CC

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-01	B-3 (0-2')	08/01/11
11G0830-02	B-5 (0-2')	08/01/11
11G0830-03	B-6 (0-2')	08/01/11
11G0830-04	B-7 (0-2')	08/01/11
11G0830-05	B-8 (0-2')	08/01/11
11G0830-06	B-9 (0-2')	08/01/11
11G0830-07	B-10 (0-2')	08/01/11
11G0830-08	B-11 (0-2')	08/01/11
11G0830-09	WC-1	08/01/11

YORK

ANALYTICAL LABORATORIES, INC.

Batch ID: BH10008

Preparation Method: EPA 3510C

Prepared By: KAM

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-09	WC-1	08/01/11
BH10008-BLK1	Blank	08/01/11
BH10008-BS1	LCS	08/01/11
BH10008-BSD1	LCS Dup	08/01/11

Batch ID: BH10032

Preparation Method: EPA 5035B

Prepared By: AY

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-09	WC-1	08/01/11
BH10032-BLK1	Blank	08/01/11
BH10032-BS1	LCS	08/01/11
BH10032-BSD1	LCS Dup	08/01/11

Batch ID: BH10051

Preparation Method: EPA SW 846-3050B

Prepared By: MW

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-09	WC-1	08/01/11
BH10051-BLK1	Blank	08/01/11
BH10051-SRM1	Reference	08/01/11

Batch ID: BH10053

Preparation Method: EPA SW 846-3010A

Prepared By: MW

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-01	B-3 (0-2')	08/01/11
11G0830-02	B-5 (0-2')	08/01/11
11G0830-03	B-6 (0-2')	08/01/11
11G0830-04	B-7 (0-2')	08/01/11
11G0830-05	B-8 (0-2')	08/01/11
11G0830-06	B-9 (0-2')	08/01/11
11G0830-07	B-10 (0-2')	08/01/11
11G0830-08	B-11 (0-2')	08/01/11
11G0830-09	WC-1	08/01/11
BH10053-BLK1	Blank	08/01/11
BH10053-BLK1	Blank	08/01/11
BH10053-BLK2	Blank	08/01/11
BH10053-BLK2	Blank	08/01/11
BH10053-DUP1	Duplicate	08/01/11
BH10053-DUP1	Duplicate	08/01/11
BH10053-MS1	Matrix Spike	08/01/11
BH10053-MS1	Matrix Spike	08/01/11
BH10053-SRM1	Reference	08/01/11
BH10053-SRM1	Reference	08/01/11

Batch ID: BH10066

Preparation Method: EPA 3550B/8151A

Prepared By: TFD

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-09	WC-1	08/02/11
BH10066-BLK1	Blank	08/02/11

YORK

ANALYTICAL LABORATORIES, INC.

BH10066-BS1 LCS 08/02/11
BH10066-BSD1 LCS Dup 08/02/11

Batch ID: BH10067 **Preparation Method:** EPA 3535A **Prepared By:** TFD

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-09	WC-1	08/01/11
BH10067-BLK1	Blank	08/01/11
BH10067-BS1	LCS	08/01/11
BH10067-BSD1	LCS Dup	08/01/11

Batch ID: BH10077 **Preparation Method:** Analysis Preparation **Prepared By:** AD

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-09	WC-1	08/02/11
BH10077-BLK1	Blank	08/02/11

Batch ID: BH10097 **Preparation Method:** EPA 5030B **Prepared By:** AY

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-09	WC-1	08/02/11
BH10097-BLK1	Blank	08/02/11
BH10097-BLK2	Blank	08/02/11

Batch ID: BH10098 **Preparation Method:** Analysis Preparation **Prepared By:** AD

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-09	WC-1	08/02/11
BH10098-BLK1	Blank	08/02/11

Batch ID: BH10207 **Preparation Method:** EPA 3550B **Prepared By:** CM

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-09	WC-1	08/04/11
11G0830-09	WC-1	08/04/11
BH10207-BLK1	Blank	08/04/11
BH10207-BLK1	Blank	08/04/11
BH10207-BS2	LCS	08/04/11

Batch ID: BH10214 **Preparation Method:** EPA 3550B **Prepared By:** TFD

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-09	WC-1	08/04/11
BH10214-BLK1	Blank	08/04/11
BH10214-BS1	LCS	08/04/11

Batch ID: BH10227 **Preparation Method:** EPA 3550B **Prepared By:** CM

YORK

ANALYTICAL LABORATORIES, INC.

YORK Sample ID	Client Sample ID	Preparation Date
11G0830-01	B-3 (0-2')	08/04/11
11G0830-02	B-5 (0-2')	08/04/11
11G0830-03	B-6 (0-2')	08/04/11
11G0830-04	B-7 (0-2')	08/04/11
11G0830-05	B-8 (0-2')	08/04/11
11G0830-06	B-9 (0-2')	08/04/11
11G0830-07	B-10 (0-2')	08/04/11
11G0830-08	B-11 (0-2')	08/04/11
BH10227-BLK1	Blank	08/04/11
BH10227-BS1	LCS	08/04/11

YORK

ANALYTICAL LABORATORIES, INC.

Volatile Organic Compounds by EPA SW846-8260B - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10032 - EPA 5035B											
Blank (BH10032-BLK1)											
										Prepared & Analyzed: 08/01/2011	
1,1,1-Trichloroethane	ND	5.0	ug/kg wet								
1,1,2,2-Tetrachloroethane	ND	5.0	"								
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	5.0	"								
1,1,2-Trichloroethane	ND	5.0	"								
1,1-Dichloroethane	ND	5.0	"								
1,1-Dichloroethylene	ND	5.0	"								
1,2,4-Trichlorobenzene	ND	10	"								
1,2-Dibromo-3-chloropropane	ND	10	"								
1,2-Dibromoethane	ND	5.0	"								
1,2-Dichloroethane	ND	5.0	"								
1,2-Dichloropropane	ND	5.0	"								
2-Butanone	ND	10	"								
2-Hexanone	ND	5.0	"								
4-Methyl-2-pentanone	ND	5.0	"								
Acetone	3.8	10	"								
Benzene	ND	5.0	"								
Bromodichloromethane	ND	5.0	"								
Bromoform	ND	5.0	"								
Bromomethane	ND	5.0	"								
Carbon disulfide	ND	5.0	"								
Carbon tetrachloride	ND	5.0	"								
Chlorobenzene	ND	5.0	"								
Chloroethane	ND	5.0	"								
Chloroform	ND	5.0	"								
Chloromethane	ND	5.0	"								
cis-1,2-Dichloroethylene	ND	5.0	"								
cis-1,3-Dichloropropylene	ND	5.0	"								
Dibromochloromethane	ND	5.0	"								
Dichlorodifluoromethane	ND	5.0	"								
Ethyl Benzene	ND	5.0	"								
Methyl tert-butyl ether (MTBE)	ND	5.0	"								
Methylene chloride	7.4	10	"								
o-Xylene	ND	5.0	"								
p- & m- Xylenes	ND	10	"								
Styrene	ND	5.0	"								
Tetrachloroethylene	ND	5.0	"								
Toluene	ND	5.0	"								
trans-1,2-Dichloroethylene	ND	5.0	"								
trans-1,3-Dichloropropylene	ND	5.0	"								
Trichloroethylene	ND	5.0	"								
Trichlorofluoromethane	ND	5.0	"								
Vinyl Chloride	ND	5.0	"								
Xylenes, Total	ND	15	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	51.2		ug/L	50.0		102	72.6-129				
<i>Surrogate: p-Bromofluorobenzene</i>	47.9		"	50.0		95.8	63.5-145				
<i>Surrogate: Toluene-d8</i>	49.5		"	50.0		99.0	86.6-116				

YORK

ANALYTICAL LABORATORIES, INC.

Volatile Organic Compounds by EPA SW846-8260B - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD Limit	Flag
Batch BH10032 - EPA 5035B									
LCS (BH10032-BS1)					Prepared & Analyzed: 08/01/2011				
1,1,1-Trichloroethane	56		ug/L	50.0		112 72.6-137			
1,1,2,2-Tetrachloroethane	50		"	50.0		101 65.4-135			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	53		"	50.0		106 67.8-129			
1,1,2-Trichloroethane	54		"	50.0		109 68.6-132			
1,1-Dichloroethane	56		"	50.0		112 71.7-131			
1,1-Dichloroethylene	56		"	50.0		113 74.4-148			
1,2,4-Trichlorobenzene	55		"	50.0		110 65-139			
1,2-Dibromo-3-chloropropane	49		"	50.0		98.1 53.3-149			
1,2-Dibromoethane	58		"	50.0		116 72.7-134			
1,2-Dichloroethane	56		"	50.0		113 68.7-136			
1,2-Dichloropropane	55		"	50.0		110 68.2-136			
2-Butanone	51		"	50.0		102 51.9-137			
2-Hexanone	45		"	50.0		90.8 51.6-150			
4-Methyl-2-pentanone	50		"	50.0		99.9 50.6-142			
Acetone	27		"	50.0		53.0 16-155			
Benzene	54		"	50.0		109 70.4-128			
Bromodichloromethane	56		"	50.0		112 70.6-136			
Bromoform	53		"	50.0		106 63.2-139			
Bromomethane	24		"	50.0		48.8 50.2-135	Low Bias		
Carbon disulfide	100		"	100		100 40.4-124			
Carbon tetrachloride	58		"	50.0		115 71.9-140			
Chlorobenzene	55		"	50.0		111 76.4-127			
Chloroethane	50		"	50.0		101 50.8-142			
Chloroform	57		"	50.0		113 73.6-132			
Chloromethane	43		"	50.0		86.9 32.9-131			
cis-1,2-Dichloroethylene	56		"	50.0		112 69.5-128			
cis-1,3-Dichloropropylene	53		"	50.0		107 66.6-129			
Dibromochloromethane	56		"	50.0		112 71.4-135			
Dichlorodifluoromethane	38		"	50.0		76.7 39.4-108			
Ethyl Benzene	56		"	50.0		112 75.2-131			
Methyl tert-butyl ether (MTBE)	55		"	50.0		110 56.5-140			
Methylene chloride	37		"	50.0		73.6 58.4-120			
o-Xylene	53		"	50.0		107 70.4-126			
p- & m- Xylenes	110		"	100		111 73.8-130			
Styrene	54		"	50.0		108 71.7-126			
Tetrachloroethylene	60		"	50.0		120 65-168			
Toluene	54		"	50.0		109 72.5-127			
trans-1,2-Dichloroethylene	55		"	50.0		110 62.2-144			
trans-1,3-Dichloropropylene	54		"	50.0		108 66-135			
Trichloroethylene	55		"	50.0		109 72.6-133			
Trichlorofluoromethane	48		"	50.0		96.7 51.5-131			
Vinyl Chloride	44		"	50.0		88.8 47-126			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	52.6		"	50.0		105 72.6-129			
<i>Surrogate: p-Bromofluorobenzene</i>	48.2		"	50.0		96.5 63.5-145			
<i>Surrogate: Toluene-d8</i>	49.4		"	50.0		98.8 86.6-116			

YORK

ANALYTICAL LABORATORIES, INC.

Volatile Organic Compounds by EPA SW846-8260B - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10032 - EPA 5035B											
LCS Dup (BH10032-BSD1)						Prepared & Analyzed: 08/01/2011					
1,1,1-Trichloroethane	58		ug/L	50.0		116	72.6-137		3.70	22.5	
1,1,2,2-Tetrachloroethane	50		"	50.0		101	65.4-135		0.0795	23.8	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	55		"	50.0		111	67.8-129		3.91	25	
1,1,2-Trichloroethane	54		"	50.0		108	68.6-132		0.295	22.6	
1,1-Dichloroethane	58		"	50.0		115	71.7-131		3.37	22.8	
1,1-Dichloroethylene	58		"	50.0		115	74.4-148		2.26	26.8	
1,2,4-Trichlorobenzene	56		"	50.0		111	65-139		1.74	26.6	
1,2-Dibromo-3-chloropropane	48		"	50.0		96.5	53.3-149		1.67	29.1	
1,2-Dibromoethane	57		"	50.0		114	72.7-134		1.63	21.1	
1,2-Dichloroethane	57		"	50.0		113	68.7-136		0.266	21.6	
1,2-Dichloropropane	56		"	50.0		111	68.2-136		0.632	22.5	
2-Butanone	50		"	50.0		101	51.9-137		0.553	32.2	
2-Hexanone	44		"	50.0		88.4	51.6-150		2.61	34	
4-Methyl-2-pentanone	48		"	50.0		96.7	50.6-142		3.32	15.5	
Acetone	28		"	50.0		56.1	16-155		5.68	51	
Benzene	56		"	50.0		112	70.4-128		3.06	21.8	
Bromodichloromethane	57		"	50.0		114	70.6-136		1.24	22.7	
Bromoform	53		"	50.0		106	63.2-139		0.452	23.3	
Bromomethane	53		"	50.0		106	50.2-135		73.8	29.1	Non-dir.
Carbon disulfide	100		"	100		104	40.4-124		3.65	25.2	
Carbon tetrachloride	61		"	50.0		122	71.9-140		5.63	22.4	
Chlorobenzene	57		"	50.0		113	76.4-127		1.95	21.8	
Chloroethane	53		"	50.0		106	50.8-142		4.91	24	
Chloroform	58		"	50.0		115	73.6-132		1.82	21.9	
Chloromethane	45		"	50.0		90.1	32.9-131		3.55	22.8	
cis-1,2-Dichloroethylene	48		"	50.0		95.8	69.5-128		15.3	22	
cis-1,3-Dichloropropylene	54		"	50.0		108	66.6-129		0.653	22.7	
Dibromochloromethane	56		"	50.0		113	71.4-135		0.231	22.1	
Dichlorodifluoromethane	39		"	50.0		78.5	39.4-108		2.29	26	
Ethyl Benzene	57		"	50.0		114	75.2-131		1.27	22.5	
Methyl tert-butyl ether (MTBE)	55		"	50.0		111	56.5-140		0.652	30.6	
Methylene chloride	41		"	50.0		82.5	58.4-120		11.5	23.8	
o-Xylene	55		"	50.0		110	70.4-126		2.49	22.7	
p- & m- Xylenes	110		"	100		113	73.8-130		2.02	23	
Styrene	54		"	50.0		109	71.7-126		0.775	21.9	
Tetrachloroethylene	61		"	50.0		122	65-168		1.88	27.9	
Toluene	56		"	50.0		112	72.5-127		2.88	22.9	
trans-1,2-Dichloroethylene	57		"	50.0		114	62.2-144		4.09	24.6	
trans-1,3-Dichloropropylene	54		"	50.0		109	66-135		0.314	23	
Trichloroethylene	56		"	50.0		111	72.6-133		1.96	21.9	
Trichlorofluoromethane	54		"	50.0		108	51.5-131		11.1	24.2	
Vinyl Chloride	48		"	50.0		95.3	47-126		7.10	25.5	
Surrogate: 1,2-Dichloroethane-d4	51.2		"	50.0		102	72.6-129				
Surrogate: p-Bromofluorobenzene	48.3		"	50.0		96.6	63.5-145				
Surrogate: Toluene-d8	49.0		"	50.0		97.9	86.6-116				

YORK

ANALYTICAL LABORATORIES, INC.

Volatile Organic Compounds by EPA SW846-8260B - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10097 - EPA 5030B										
Blank (BH10097-BLK1)						Prepared & Analyzed: 08/02/2011				
1,1-Dichloroethylene	ND	50	ug/L							
1,2-Dichloroethane	ND	50	"							
1,4-Dichlorobenzene	ND	50	"							
2-Butanone	ND	100	"							
Benzene	ND	50	"							
Carbon tetrachloride	ND	50	"							
Chlorobenzene	ND	50	"							
Chloroform	ND	50	"							
Tetrachloroethylene	ND	50	"							
Trichloroethylene	ND	50	"							
Vinyl Chloride	ND	50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	47.8		"	50.0		95.5			70-130	
<i>Surrogate: p-Bromofluorobenzene</i>	53.3		"	50.0		107			70-130	
<i>Surrogate: Toluene-d8</i>	42.6		"	50.0		85.3			70-130	
Blank (BH10097-BLK2)						Prepared & Analyzed: 08/02/2011				
1,1-Dichloroethylene	ND	50	ug/L							
1,2-Dichloroethane	ND	50	"							
1,4-Dichlorobenzene	ND	50	"							
2-Butanone	ND	100	"							
Benzene	ND	50	"							
Carbon tetrachloride	ND	50	"							
Chlorobenzene	ND	50	"							
Chloroform	ND	50	"							
Tetrachloroethylene	ND	50	"							
Trichloroethylene	ND	50	"							
Vinyl Chloride	ND	50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	48.4		"	50.0		96.9			70-130	
<i>Surrogate: p-Bromofluorobenzene</i>	52.6		"	50.0		105			70-130	
<i>Surrogate: Toluene-d8</i>	44.1		"	50.0		88.2			70-130	

YORK

ANALYTICAL LABORATORIES, INC.

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	
									RPD	Limit

Batch BG11026 - EPA 3510C

Blank (BG11026-BLK1)

Prepared: 07/28/2011 Analyzed: 07/29/2011

1,4-Dichlorobenzene	ND	5.00	ug/L							
2,4,5-Trichlorophenol	ND	5.00	"							
2,4,6-Trichlorophenol	ND	5.00	"							
2,4-Dinitrotoluene	ND	5.00	"							
2-Methylphenol	ND	5.00	"							
3- & 4-Methylphenols	ND	5.00	"							
Cresols, total	ND	15.0	"							
Hexachlorobenzene	ND	5.00	"							
Hexachlorobutadiene	ND	5.00	"							
Hexachloroethane	ND	5.00	"							
Nitrobenzene	ND	5.00	"							
Pentachlorophenol	ND	5.00	"							
Pyridine	ND	5.00	"							
<i>Surrogate: 2-Fluorophenol</i>	40.7		"	75.2		54.1	15-110			
<i>Surrogate: Phenol-d5</i>	38.4		"	75.1		51.2	10-110			
<i>Surrogate: 2,4,6-Tribromophenol</i>	30.9		"	75.1		41.1	15-110			
<i>Surrogate: 2-Fluorobiphenyl</i>	27.1		"	50.0		54.2	30-130			
<i>Surrogate: Nitrobenzene-d5</i>	28.9		"	50.1		57.7	30-130			
<i>Surrogate: Terphenyl-d14</i>	26.4		"	50.0		52.7	30-130			

LCS (BG11026-BS1)

Prepared: 07/28/2011 Analyzed: 07/29/2011

1,4-Dichlorobenzene	28.0	5.00	ug/L	50.0		56.0	40-140			
2,4,5-Trichlorophenol	24.5	5.00	"	50.0		49.1	30-130			
2,4,6-Trichlorophenol	26.7	5.00	"	50.0		53.5	30-130			
2,4-Dinitrotoluene	27.1	5.00	"	50.0		54.1	40-140			
2-Methylphenol	26.8	5.00	"	50.0		53.6	30-130			
3- & 4-Methylphenols	24.0	5.00	"	50.0		48.0	30-130			
Cresols, total	ND	15.0	"				30-130			
Hexachlorobenzene	26.9	5.00	"	50.0		53.8	40-140			
Hexachlorobutadiene	24.7	5.00	"	50.0		49.3	40-140			
Hexachloroethane	26.4	5.00	"	50.0		52.8	40-140			
Nitrobenzene	26.0	5.00	"	50.0		52.0	40-140			
Pentachlorophenol	26.3	5.00	"	50.0		52.6	30-130			
Pyridine	13.8	5.00	"	50.0		27.5	40-140	Low Bias		
<i>Surrogate: 2-Fluorophenol</i>	36.5		"	75.2		48.5	15-110			
<i>Surrogate: Phenol-d5</i>	35.4		"	75.1		47.2	10-110			
<i>Surrogate: 2,4,6-Tribromophenol</i>	34.6		"	75.1		46.1	15-110			
<i>Surrogate: 2-Fluorobiphenyl</i>	24.0		"	50.0		48.1	30-130			
<i>Surrogate: Nitrobenzene-d5</i>	30.2		"	50.1		60.2	30-130			
<i>Surrogate: Terphenyl-d14</i>	26.3		"	50.0		52.6	30-130			

YORK

ANALYTICAL LABORATORIES, INC.

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BG11026 - EPA 3510C

LCS Dup (BG11026-BSD1)

Prepared: 07/28/2011 Analyzed: 07/29/2011

1,4-Dichlorobenzene	26.8	5.00	ug/L	50.0		53.6	40-140		4.45	20	
2,4,5-Trichlorophenol	23.6	5.00	"	50.0		47.2	30-130		3.95	20	
2,4,6-Trichlorophenol	27.0	5.00	"	50.0		54.1	30-130		1.19	20	
2,4-Dinitrotoluene	27.3	5.00	"	50.0		54.7	40-140		0.992	20	
2-Methylphenol	26.7	5.00	"	50.0		53.5	30-130		0.262	20	
3- & 4-Methylphenols	24.0	5.00	"	50.0		47.9	30-130		0.167	20	
Cresols, total	ND	15.0	"				30-130			20	
Hexachlorobenzene	26.8	5.00	"	50.0		53.7	40-140		0.298	20	
Hexachlorobutadiene	24.8	5.00	"	50.0		49.5	40-140		0.405	20	
Hexachloroethane	26.5	5.00	"	50.0		52.9	40-140		0.227	20	
Nitrobenzene	25.5	5.00	"	50.0		51.1	40-140		1.79	20	
Pentachlorophenol	23.9	5.00	"	50.0		47.7	30-130		9.72	20	
Pyridine	13.0	5.00	"	50.0		26.0	40-140	Low Bias	5.60	20	
<i>Surrogate: 2-Fluorophenol</i>	42.3		"	75.2		56.2	15-110				
<i>Surrogate: Phenol-d5</i>	33.8		"	75.1		45.0	10-110				
<i>Surrogate: 2,4,6-Tribromophenol</i>	32.4		"	75.1		43.1	15-110				
<i>Surrogate: 2-Fluorobiphenyl</i>	22.9		"	50.0		45.8	30-130				
<i>Surrogate: Nitrobenzene-d5</i>	28.7		"	50.1		57.2	30-130				
<i>Surrogate: Terphenyl-d14</i>	25.0		"	50.0		49.9	30-130				

Batch BH10214 - EPA 3550B

Blank (BH10214-BLK1)

Prepared & Analyzed: 08/04/2011

Acenaphthene	ND	167	ug/kg wet								
Acenaphthylene	ND	167	"								
Anthracene	ND	167	"								
Benzo(a)anthracene	ND	167	"								
Benzo(a)pyrene	ND	167	"								
Benzoic acid	ND	333	"								
Benzo(b)fluoranthene	ND	167	"								
Benzo(g,h,i)perylene	ND	167	"								
Benzyl alcohol	ND	167	"								
Benzo(k)fluoranthene	ND	167	"								
Benzyl butyl phthalate	ND	167	"								
4-Bromophenyl phenyl ether	ND	167	"								
4-Chloro-3-methylphenol	ND	167	"								
4-Chloroaniline	ND	167	"								
Bis(2-chloroethoxy)methane	ND	167	"								
Bis(2-chloroethyl)ether	ND	167	"								
Bis(2-chloroisopropyl)ether	ND	167	"								
Bis(2-ethylhexyl)phthalate	ND	167	"								
2-Chloronaphthalene	ND	167	"								
2-Chlorophenol	ND	167	"								
4-Chlorophenyl phenyl ether	ND	167	"								
Chrysene	ND	167	"								
Dibenzo(a,h)anthracene	ND	167	"								
Dibenzofuran	ND	167	"								
Di-n-butyl phthalate	ND	167	"								
1,2-Dichlorobenzene	ND	167	"								
1,4-Dichlorobenzene	ND	167	"								
1,3-Dichlorobenzene	ND	167	"								
3,3'-Dichlorobenzidine	ND	167	"								
2,4-Dichlorophenol	ND	167	"								
Diethyl phthalate	ND	167	"								

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ANALYTICAL LABORATORIES, INC.

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10214 - EPA 3550B										
Blank (BH10214-BLK1)										
Prepared & Analyzed: 08/04/2011										
2,4-Dimethylphenol	ND	167	ug/kg wet							
Dimethyl phthalate	ND	167	"							
4,6-Dinitro-2-methylphenol	ND	333	"							
2-Nitroaniline	ND	167	"							
2,4-Dinitrophenol	ND	333	"							
2,6-Dinitrotoluene	ND	167	"							
2,4-Dinitrotoluene	ND	167	"							
Di-n-octyl phthalate	ND	167	"							
Fluoranthene	ND	167	"							
Fluorene	ND	167	"							
Hexachlorobenzene	ND	167	"							
Hexachlorobutadiene	ND	167	"							
Hexachlorocyclopentadiene	ND	167	"							
Hexachloroethane	ND	167	"							
Indeno(1,2,3-cd)pyrene	ND	167	"							
Isophorone	ND	167	"							
2-Methylnaphthalene	ND	167	"							
2-Methylphenol	ND	167	"							
3- & 4-Methylphenols	ND	167	"							
Naphthalene	ND	167	"							
3-Nitroaniline	ND	167	"							
4-Nitroaniline	ND	167	"							
Nitrobenzene	ND	167	"							
4-Nitrophenol	ND	167	"							
2-Nitrophenol	ND	167	"							
N-nitroso-di-n-propylamine	ND	167	"							
N-Nitrosodiphenylamine	ND	167	"							
Pentachlorophenol	ND	167	"							
Phenanthrene	ND	167	"							
Phenol	ND	167	"							
Pyrene	ND	167	"							
1,2,4-Trichlorobenzene	ND	167	"							
2,4,5-Trichlorophenol	ND	167	"							
2,4,6-Trichlorophenol	ND	167	"							
<i>Surrogate: 2,4,6-Tribromophenol</i>	1680		"	2500		66.9		15-110		
<i>Surrogate: 2-Fluorobiphenyl</i>	1860		"	1670		112		30-130		
<i>Surrogate: 2-Fluorophenol</i>	1680		"	2510		66.8		15-110		
<i>Surrogate: Nitrobenzene-d5</i>	1680		"	1670		100		30-130		
<i>Surrogate: Phenol-d5</i>	1670		"	2500		66.9		15-110		
<i>Surrogate: Terphenyl-d14</i>	2150		"	1670		129		30-130		

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ANALYTICAL LABORATORIES, INC.

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10214 - EPA 3550B										
LCS (BH10214-BS1)						Prepared & Analyzed: 08/04/2011				
Acenaphthene	1240	167	ug/kg wet	1670		74.2			40-140	
Acenaphthylene	1230	167	"	1670		73.6			40-140	
Anthracene	1270	167	"	1670		76.2			40-140	
Benzo(a)anthracene	1240	167	"	1670		74.3			40-140	
Benzo(a)pyrene	1380	167	"	1670		82.8			40-140	
Benzoic acid	ND	333	"	1670					30-130	Low Bias
Benzo(b)fluoranthene	1440	167	"	1670		86.3			40-140	
Benzo(g,h,i)perylene	1680	167	"	1670		100			40-140	
Benzyl alcohol	1270	167	"	1670		76.1			30-130	
Benzo(k)fluoranthene	1290	167	"	1670		77.6			40-140	
Benzyl butyl phthalate	1230	167	"	1670		74.0			40-140	
4-Bromophenyl phenyl ether	1300	167	"	1670		78.3			40-140	
4-Chloro-3-methylphenol	1280	167	"	1670		77.1			30-130	
4-Chloroaniline	1260	167	"	1670		75.8			40-140	
Bis(2-chloroethoxy)methane	1280	167	"	1670		77.0			40-140	
Bis(2-chloroethyl)ether	1150	167	"	1670		68.9			40-140	
Bis(2-chloroisopropyl)ether	1150	167	"	1670		68.9			40-140	
Bis(2-ethylhexyl)phthalate	1230	167	"	1670		73.8			40-140	
2-Chloronaphthalene	1210	167	"	1670		72.6			40-140	
2-Chlorophenol	1230	167	"	1670		73.7			30-130	
4-Chlorophenyl phenyl ether	1180	167	"	1670		71.1			40-140	
Chrysene	1260	167	"	1670		75.4			40-140	
Dibenzo(a,h)anthracene	884	167	"	1670		53.1			40-140	
Dibenzofuran	1190	167	"	1670		71.7			40-140	
Di-n-butyl phthalate	1220	167	"	1670		73.1			40-140	
1,2-Dichlorobenzene	1210	167	"	1670		72.8			40-140	
1,4-Dichlorobenzene	1220	167	"	1670		73.4			40-140	
1,3-Dichlorobenzene	1150	167	"	1670		69.3			40-140	
3,3'-Dichlorobenzidine	1230	167	"	1670		73.8			40-140	
2,4-Dichlorophenol	1260	167	"	1670		75.6			30-130	
Diethyl phthalate	1210	167	"	1670		72.5			40-140	
2,4-Dimethylphenol	1320	167	"	1670		79.1			30-130	
Dimethyl phthalate	1230	167	"	1670		73.7			40-140	
4,6-Dinitro-2-methylphenol	1110	333	"	1670		66.8			30-130	
2-Nitroaniline	1140	167	"	1670		68.3			40-140	
2,4-Dinitrophenol	1250	333	"	1670		74.8			30-130	
2,6-Dinitrotoluene	1220	167	"	1670		73.5			40-140	
2,4-Dinitrotoluene	1200	167	"	1670		71.8			40-140	
Di-n-octyl phthalate	1440	167	"	1670		86.6			40-140	
Fluoranthene	1680	167	"	1670		100			40-140	
Fluorene	1180	167	"	1670		70.5			40-140	
Hexachlorobenzene	1250	167	"	1670		75.2			40-140	
Hexachlorobutadiene	1200	167	"	1670		72.3			40-140	
Hexachlorocyclopentadiene	668	167	"	1670		40.1			40-140	
Hexachloroethane	1210	167	"	1670		72.6			40-140	
Indeno(1,2,3-cd)pyrene	812	167	"	1670		48.7			40-140	
Isophorone	1210	167	"	1670		72.5			40-140	
2-Methylnaphthalene	1290	167	"	1670		77.3			40-140	
2-Methylphenol	1260	167	"	1670		75.7			30-130	
3- & 4-Methylphenols	ND	167	"	1670					30-130	Low Bias
Naphthalene	1200	167	"	1670		72.2			40-140	
3-Nitroaniline	1170	167	"	1670		70.4			40-140	
4-Nitroaniline	1150	167	"	1670		69.0			40-140	
Nitrobenzene	1180	167	"	1670		70.9			40-140	

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ANALYTICAL LABORATORIES, INC.

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BH10214 - EPA 3550B

LCS (BH10214-BS1)

Prepared & Analyzed: 08/04/2011

4-Nitrophenol	1210	167	ug/kg wet	1670		72.3	30-130				
2-Nitrophenol	1260	167	"	1670		75.6	30-130				
N-nitroso-di-n-propylamine	1220	167	"	1670		73.2	40-140				
N-Nitrosodiphenylamine	1430	167	"	1670		85.7	40-140				
Pentachlorophenol	1270	167	"	1670		76.2	30-130				
Phenanthrene	1270	167	"	1670		76.2	40-140				
Phenol	1360	167	"	1670		81.8	30-130				
Pyrene	1290	167	"	1670		77.3	40-140				
1,2,4-Trichlorobenzene	1220	167	"	1670		73.0	40-140				
2,4,5-Trichlorophenol	1250	167	"	1670		75.1	30-130				
2,4,6-Trichlorophenol	1180	167	"	1670		70.9	30-130				
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>2090</i>		<i>"</i>	<i>2500</i>		<i>83.5</i>	<i>15-110</i>				
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1150</i>		<i>"</i>	<i>1670</i>		<i>69.3</i>	<i>30-130</i>				
<i>Surrogate: 2-Fluorophenol</i>	<i>2040</i>		<i>"</i>	<i>2510</i>		<i>81.3</i>	<i>15-110</i>				
<i>Surrogate: Nitrobenzene-d5</i>	<i>1220</i>		<i>"</i>	<i>1670</i>		<i>72.9</i>	<i>30-130</i>				
<i>Surrogate: Phenol-d5</i>	<i>1950</i>		<i>"</i>	<i>2500</i>		<i>77.9</i>	<i>15-110</i>				
<i>Surrogate: Terphenyl-d14</i>	<i>1330</i>		<i>"</i>	<i>1670</i>		<i>79.9</i>	<i>30-130</i>				

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ANALYTICAL LABORATORIES, INC.

Organochlorine Pesticides by EPA SW 846-8081 - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD	Limit	Flag
Batch BH10008 - EPA 3510C										
Blank (BH10008-BLK1)						Prepared & Analyzed: 08/01/2011				
Toxaphene	ND	0.100	ug/L							
Methoxychlor	ND	0.00500	"							
Heptachlor epoxide	ND	0.00100	"							
Heptachlor	ND	0.00100	"							
gamma-BHC (Lindane)	ND	0.00100	"							
Endrin	ND	0.00100	"							
Chlordane, total	ND	0.00400	"							
<i>Surrogate: Tetrachloro-m-xylene</i>	2.27		"	2.00		113			30-150	
<i>Surrogate: Decachlorobiphenyl</i>	1.84		"	2.00		92.1			30-150	
LCS (BH10008-BS1)						Prepared & Analyzed: 08/01/2011				
Methoxychlor	0.688	0.00500	ug/L	1.00		68.8			40-140	
Heptachlor epoxide	0.830	0.00100	"	1.00		83.0			40-140	
Heptachlor	0.822	0.00100	"	1.00		82.2			40-140	
gamma-BHC (Lindane)	0.877	0.00100	"	1.00		87.7			40-140	
Endrin	0.735	0.00100	"	1.00		73.5			40-140	
<i>Surrogate: Tetrachloro-m-xylene</i>	2.05		"	2.00		103			30-150	
<i>Surrogate: Decachlorobiphenyl</i>	1.55		"	2.00		77.3			30-150	
LCS Dup (BH10008-BSD1)						Prepared: 08/01/2011 Analyzed: 08/02/2011				
Methoxychlor	0.790	0.00500	ug/L	1.00		79.0		13.8	40-140	200
Heptachlor epoxide	0.873	0.00100	"	1.00		87.3		4.98	40-140	200
Heptachlor	0.856	0.00100	"	1.00		85.6		4.04	40-140	200
gamma-BHC (Lindane)	0.893	0.00100	"	1.00		89.3		1.80	40-140	200
Endrin	0.817	0.00100	"	1.00		81.7		10.6	40-140	200
<i>Surrogate: Tetrachloro-m-xylene</i>	2.15		"	2.00		107			30-150	
<i>Surrogate: Decachlorobiphenyl</i>	1.92		"	2.00		96.2			30-150	

YORK

ANALYTICAL LABORATORIES, INC.

Organochlorine Pesticides by EPA SW 846-8081 - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting		Spike	Source*	%REC		Flag	RPD	
		Limit	Units			Level	Result		Limits	RPD
Batch BH10207 - EPA 3550B										
Blank (BH10207-BLK1)						Prepared & Analyzed: 08/04/2011				
4,4'-DDD	ND	0.330	ug/kg wet							
4,4'-DDE	ND	0.330	"							
4,4'-DDT	ND	0.330	"							
Aldrin	ND	0.330	"							
alpha-BHC	ND	0.330	"							
beta-BHC	ND	0.330	"							
gamma-Chlordane	ND	0.330	"							
delta-BHC	ND	0.330	"							
Dieldrin	ND	0.330	"							
Endosulfan I	ND	0.330	"							
Endosulfan II	ND	0.330	"							
Endosulfan sulfate	ND	0.330	"							
Endrin	ND	0.330	"							
Endrin aldehyde	ND	0.330	"							
Endrin ketone	ND	0.330	"							
gamma-BHC (Lindane)	ND	0.330	"							
Heptachlor	ND	0.330	"							
Heptachlor epoxide	ND	0.330	"							
Methoxychlor	ND	1.65	"							
alpha-Chlordane	ND	0.330	"							
Toxaphene	ND	33.0	"							
<i>Surrogate: Decachlorobiphenyl</i>	65.9		"	66.7		98.9	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	79.1		"	66.7		119	30-150			

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ANALYTICAL LABORATORIES, INC.

Polychlorinated Biphenyls (PCB) by EPA SW 846-8082/EPA Compendium Methods - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10207 - EPA 3550B										
Blank (BH10207-BLK1)						Prepared & Analyzed: 08/04/2011				
Aroclor 1016	ND	0.0170	mg/kg wet							
Aroclor 1221	ND	0.0170	"							
Aroclor 1232	ND	0.0170	"							
Aroclor 1242	ND	0.0170	"							
Aroclor 1248	ND	0.0170	"							
Aroclor 1254	ND	0.0170	"							
Aroclor 1260	ND	0.0170	"							
Aroclor 1262	ND	0.0170	"							
Aroclor 1268	ND	0.0170	"							
Total PCBs	ND	0.0170	"							
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0737		"	0.0667		110			30-150	
<i>Surrogate: Decachlorobiphenyl</i>	0.0727		"	0.0667		109			30-150	
LCS (BH10207-BS2)						Prepared & Analyzed: 08/04/2011				
Aroclor 1016	0.328	0.0170	mg/kg wet	0.333		98.5			40-140	
Aroclor 1260	0.315	0.0170	"	0.333		94.5			40-140	
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0827		"	0.0667		124			30-150	
<i>Surrogate: Decachlorobiphenyl</i>	0.0787		"	0.0667		118			30-150	

YORK

ANALYTICAL LABORATORIES, INC.

Chlorinated Herbicides by EPA Method 8151 - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BH10066 - EPA 3550B/8151A

Blank (BH10066-BLK1)

Prepared: 08/02/2011 Analyzed: 08/03/2011

2,4-D	ND	100	ug/kg wet							
2,4,5-TP (Silvex)	ND	100	"							
2,4,5-T	ND	100	"							

<i>Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)</i>	3240		"	2500		130	10-148			
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LCS (BH10066-BS1)

Prepared: 08/02/2011 Analyzed: 08/03/2011

2,4-D	895	100	ug/kg wet	800		112	10-186			
2,4,5-TP (Silvex)	940	100	"	800		118	13.3-189			
2,4,5-T	940	100	"	800		118	11.2-181			

<i>Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)</i>	3000		"	2500		120	10-148			
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LCS Dup (BH10066-BSD1)

Prepared: 08/02/2011 Analyzed: 08/03/2011

2,4-D	870	100	ug/kg wet	800		109	10-186	2.83	38	
2,4,5-TP (Silvex)	895	100	"	800		112	13.3-189	4.90	39	
2,4,5-T	910	100	"	800		114	11.2-181	3.24	39	

<i>Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)</i>	3080		"	2500		123	10-148			
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Batch BH10067 - EPA 3535A

Blank (BH10067-BLK1)

Prepared: 08/01/2011 Analyzed: 08/02/2011

2,4-D	ND	5.00	ug/L							
2,4,5-TP (Silvex)	ND	5.00	"							

<i>Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)</i>	159		"	125		127	30-150			
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LCS (BH10067-BS1)

Prepared: 08/01/2011 Analyzed: 08/02/2011

2,4-D	27.0	5.00	ug/L	40.0		67.5	30-120			
2,4,5-TP (Silvex)	34.2	5.00	"	40.0		85.6	30-127			

<i>Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)</i>	118		"	125		94.2	30-150			
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YORK

ANALYTICAL LABORATORIES, INC.

Chlorinated Herbicides by EPA Method 8151 - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BH10067 - EPA 3535A

LCS Dup (BH10067-BSD1)

Prepared: 08/01/2011 Analyzed: 08/02/2011

2,4-D	30.2	5.00	ug/L	40.0		75.6	30-120		11.4	25	
2,4,5-TP (Silvex)	37.8	5.00	"	40.0		94.4	30-127		9.72	25	
Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)	132		"	125		106	30-150				

YORK

ANALYTICAL LABORATORIES, INC.

Gas Chromatography/Flame Ionization Determination - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10227 - EPA 3550B											
Blank (BH10227-BLK1)						Prepared: 08/04/2011 Analyzed: 08/05/2011					
Total Petroleum Hydrocarbons-DRO	ND	10.0	mg/kg wet								
Surrogate: Triacontane	0.00		"	10.0			30-150				
LCS (BH10227-BS1)						Prepared: 08/04/2011 Analyzed: 08/05/2011					
Total Petroleum Hydrocarbons-DRO	188	10.0	mg/kg wet	172		109	40-150				
Surrogate: Triacontane	10.2		"	10.0		102	30-150				

YORK

ANALYTICAL LABORATORIES, INC.

Metals by EPA 6000 Series Methods - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	RPD			
							%REC Limits	Flag	RPD	Limit

Batch BH10051 - EPA SW 846-3050B

Blank (BH10051-BLK1)

Prepared & Analyzed: 08/01/2011

Aluminum	ND	2.00	mg/kg wet							
Antimony	ND	0.500	"							
Arsenic	ND	0.500	"							
Barium	ND	0.500	"							
Beryllium	ND	0.010	"							
Cadmium	ND	0.500	"							
Calcium	ND	2.00	"							
Chromium	ND	0.500	"							
Cobalt	ND	0.500	"							
Copper	ND	0.500	"							
Iron	ND	1.00	"							
Lead	ND	0.300	"							
Magnesium	ND	2.00	"							
Manganese	ND	1.00	"							
Nickel	ND	0.500	"							
Potassium	ND	10.0	"							
Selenium	ND	0.500	"							
Silver	ND	0.500	"							
Sodium	ND	10.0	"							
Thallium	ND	0.500	"							
Vanadium	ND	0.500	"							
Zinc	ND	0.500	"							

Reference (BH10051-SRM1)

Prepared & Analyzed: 08/01/2011

Aluminum	6780	2.00	mg/kg wet	9780	69.3	44.4-155
Antimony	126	0.500	"	121	104	21.4-251
Arsenic	115	0.500	"	109	105	69.9-131
Barium	335	0.500	"	325	103	74.2-126
Beryllium	94.9	0.010	"	92.1	103	74.5-126
Cadmium	117	0.500	"	110	106	73.3-126
Calcium	6770	2.00	"	6700	101	74-126
Chromium	90.6	0.500	"	93.4	97.0	69.3-131
Cobalt	147	0.500	"	133	111	74.3-126
Copper	85.0	0.500	"	74.7	114	73.6-127
Iron	9950	1.00	"	13100	76.0	32.4-167
Lead	156	0.300	"	152	103	73.7-126
Magnesium	2320	2.00	"	2980	78.0	65.8-134
Manganese	484	1.00	"	443	109	76.7-124
Nickel	129	0.500	"	109	119	72.3-127
Potassium	2280	10.0	"	2770	82.1	61.7-138
Selenium	219	0.500	"	207	106	68.6-131
Silver	50.3	0.500	"	51.9	96.8	66.5-133
Sodium	990	10.0	"	724	137	56.6-144
Thallium	184	0.500	"	171	108	68.4-131
Vanadium	106	0.500	"	110	96.2	67-133
Zinc	288	0.500	"	299	96.3	71.6-128

YORK

ANALYTICAL LABORATORIES, INC.

Metals by EPA 6000 Series Methods - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting	Units	Spike	Source*	%REC	%REC	Flag	RPD	RPD	RPD
		Limit		Level	Result		Limits		Limit		Flag
Batch BH10053 - EPA SW 846-3010A											
Blank (BH10053-BLK1)											
										Prepared: 08/01/2011 Analyzed: 08/02/2011	
Arsenic	ND	0.010	mg/L								
Barium	ND	0.010	"								
Cadmium	ND	0.003	"								
Chromium	ND	0.005	"								
Lead	ND	0.003	"								
Selenium	ND	0.010	"								
Silver	ND	0.005	"								
Blank (BH10053-BLK2)											
										Prepared: 08/01/2011 Analyzed: 08/02/2011	
Arsenic	ND	0.010	mg/L								
Barium	ND	0.010	"								
Cadmium	ND	0.003	"								
Chromium	ND	0.005	"								
Lead	ND	0.003	"								
Selenium	0.013	0.010	"								
Silver	ND	0.005	"								
Duplicate (BH10053-DUP1)											
										Prepared: 08/01/2011 Analyzed: 08/02/2011	
*Source(Sample used for MS/MSD): 11G0830-01											
Arsenic	ND	0.010	mg/L		ND						20
Barium	2.40	0.010	"		2.40				0.127		20
Cadmium	ND	0.003	"		ND						20
Chromium	0.003	0.005	"		0.003				4.62		20
Lead	0.422	0.003	"		0.420				0.589		20
Selenium	0.021	0.010	"		0.019				12.6		20
Silver	ND	0.005	"		ND						20
Matrix Spike (BH10053-MS1)											
										Prepared: 08/01/2011 Analyzed: 08/02/2011	
*Source(Sample used for MS/MSD): 11G0830-01											
Arsenic	2.00	0.010	mg/L	2.00	ND	100	75-125				
Barium	4.28	0.010	"	2.00	2.40	93.9	75-125				
Cadmium	0.046	0.003	"	0.0500	ND	91.6	75-125				
Chromium	0.178	0.005	"	0.200	0.003	87.3	75-125				
Lead	0.836	0.003	"	0.500	0.420	83.2	75-125				
Selenium	2.14	0.010	"	2.00	0.019	106	75-125				
Silver	0.044	0.005	"	0.0500	ND	88.8	75-125				

YORK

ANALYTICAL LABORATORIES, INC.

Metals by EPA 6000 Series Methods - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BH10053 - EPA SW 846-3010A

Reference (BH10053-SRM1)

Prepared: 08/01/2011 Analyzed: 08/02/2011

Arsenic	0.518	0.010	mg/L	0.547		94.7	83.9-117				
Barium	0.320	0.010	"	0.301		106	86.7-113				
Cadmium	0.241	0.003	"	0.239		101	84.9-114				
Chromium	0.630	0.005	"	0.626		101	87.1-113				
Lead	0.481	0.003	"	0.466		103	86.9-113				
Selenium	0.866	0.010	"	0.928		93.3	79.4-115				
Silver	0.249	0.005	"	0.260		95.8	85.8-115				

YORK

ANALYTICAL LABORATORIES, INC.

TCLP Metals by EPA SW846-1311/6010B - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10053 - EPA SW 846-3010A										
Blank (BH10053-BLK1)										
						Prepared: 08/01/2011 Analyzed: 08/02/2011				
Lead	ND	0.00300	mg/L							
Blank (BH10053-BLK2)										
						Prepared: 08/01/2011 Analyzed: 08/02/2011				
Lead	ND	0.00300	mg/L							
Duplicate (BH10053-DUP1)										
*Source(Sample used for MS/MSD): 11G0830-01						Prepared: 08/01/2011 Analyzed: 08/02/2011				
Lead	0.422	0.00300	mg/L		0.420			0.589	20	
Matrix Spike (BH10053-MS1)										
*Source(Sample used for MS/MSD): 11G0830-01						Prepared: 08/01/2011 Analyzed: 08/02/2011				
Lead	0.836	0.00300	mg/L	0.500	0.420	83.2	75-125			
Reference (BH10053-SRM1)										
						Prepared: 08/01/2011 Analyzed: 08/02/2011				
Lead	0.481	0.00300	mg/L	0.466		103	86.9-113			

YORK

ANALYTICAL LABORATORIES, INC.

Mercury by EPA 7000/200 Series Methods - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BG11039 - EPA SW846-7471											
Blank (BG11039-BLK1)						Prepared & Analyzed: 07/29/2011					
Mercury	ND	0.100	mg/kg wet								
LCS (BG11039-BS1)						Prepared & Analyzed: 07/29/2011					
Mercury	2.97		mg/kg	2.96		100	80-120				
Batch BG11066 - EPA SW846-7470											
Blank (BG11066-BLK1)						Prepared & Analyzed: 08/01/2011					
Mercury	ND	0.0002000	mg/L								
LCS (BG11066-BS1)						Prepared & Analyzed: 08/01/2011					
Mercury	0.002880	0.0002000	mg/L	0.00300		96.0	80-120				

YORK

ANALYTICAL LABORATORIES, INC.

Wet Chemistry Parameters - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BG10981 - Analysis Preparation

Duplicate (BG10981-DUP1)	*Source(Sample used for MS/MSD): 11G0830-09				Prepared & Analyzed: 07/27/2011						
pH	7.97	0.500	pH units		7.98				0.125	10	

Batch BH10077 - Analysis Preparation

Blank (BH10077-BLK1)	Prepared & Analyzed: 08/02/2011										
Reactivity - Cyanide	ND	0.250	mg/kg								

Batch BH10098 - Analysis Preparation

Blank (BH10098-BLK1)	Prepared & Analyzed: 08/02/2011										
Reactivity - Sulfide	ND	15.0	mg/kg								

YORK

ANALYTICAL LABORATORIES, INC.

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QL-02	This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.
J	Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL); therefore, the result is an estimated concentration.
IGN-01	Non-Ignit.
B	Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants. Data users should consider anything <10x the blank value as artifact.
<hr/>	
ND	Analyte NOT DETECTED at the stated Reporting Limit (RL) or above.
RL	REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
MDL	METHOD DETECTION LIMIT - the minimum concentration that can be measured and reported with a 99% confidence that the concentration is greater than zero. If requested or required, a value reported below the RL and above the MDL is considered estimated and is noted with a "J" flag.
NR	Not reported
RPD	Relative Percent Difference
Wet	The data has been reported on an as-received (wet weight) basis
Low Bias	Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
High Bias	High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
Non-Dir.	Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

Corrective Action:

YORK

ANALYTICAL LABORATORIES, INC.

Technical Report

prepared for:

Langan Engineering & Environmental Services (NYC)

21 Penn Plaza, 360 West 31st Street

New York NY, 10001

Attention: Clay Patterson

Report Date: 08/08/2011

Client Project ID: 170150101

York Project (SDG) No.: 11G0898

CT License No. PH-0723

New Jersey License No. CT-005



New York License No. 10854

PA License No. 68-04440

120 RESEARCH DRIVE

STRATFORD, CT 06615

(203) 325-1371

FAX (203) 357-0166

Report Date: 08/08/2011
Client Project ID: 170150101
York Project (SDG) No.: 11G0898

Langan Engineering & Environmental Services (NYC)
21 Penn Plaza, 360 West 31st Street
New York NY, 10001
Attention: Clay Patterson

Purpose and Results

This report contains the analytical data for the sample(s) identified on the attached chain-of-custody received in our laboratory on July 27, 2011 and listed below. The project was identified as your project: **170150101**.

The analyses were conducted utilizing appropriate EPA, Standard Methods, and ASTM methods as detailed in the data summary tables.

All samples were received in proper condition meeting the customary acceptance requirements for environmental samples except those indicated under the Notes section of this report.

All analyses met the method and laboratory standard operating procedure requirements except as indicated by any data flags, the meaning of which are explained in the attachment to this report, and case narrative if applicable.

The results of the analyses, which are all reported on dry weight basis (soils) unless otherwise noted, are detailed in the following pages.

Please contact Client Services at 203.325.1371 with any questions regarding this report.

<u>York Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
11G0898-01	B-1 (0-2')	Soil	07/26/2011	07/27/2011
11G0898-02	B-2 (0-2')	Soil	07/26/2011	07/27/2011
11G0898-03	B-4 (0-2')	Soil	07/26/2011	07/27/2011
11G0898-04	WC-2	Soil	07/26/2011	07/27/2011

General Notes for York Project (SDG) No.: 11G0898

1. The RLs and MDLs (Reporting Limit and Method Detection Limit respectively) reported are adjusted for any dilution necessary due to the levels of target and/or non-target analytes and matrix interference. The RL(REPORTING LIMIT) is based upon the lowest standard utilized for the calibration where applicable.
2. Samples are retained for a period of thirty days after submittal of report, unless other arrangements are made.
3. York's liability for the above data is limited to the dollar value paid to York for the referenced project.
4. This report shall not be reproduced without the written approval of York Analytical Laboratories, Inc.
5. All samples were received in proper condition for analysis with proper documentation, unless otherwise noted.
6. All analyses conducted met method or Laboratory SOP requirements. See the Qualifiers and/or Narrative sections for further information.
7. It is noted that no analyses reported herein were subcontracted to another laboratory, unless noted in the report.
8. This report reflects results that relate only to the samples submitted on the attached chain-of-custody form(s) received by York.

Approved By:



Date: 08/08/2011

Robert Q. Bradley
Executive Vice President / Laboratory Director

YORK

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: B-1 (0-2')

York Sample ID: 11G0898-01

York Project (SDG) No.
11G0898

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 26, 2011 11:00 am

Date Received
07/27/2011

Total Petroleum Hydrocarbons-DRO

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	31.5		mg/kg dry	6.85	11.8	1	EPA SW846-8015B	08/04/2011 14:51	08/05/2011 11:55	SR
	Surrogate Recoveries	Result			Acceptance Range						
638-68-6	Surrogate: Triacontane	142 %			30-150						

Lead TCLP by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-92-1	Lead	0.0695		mg/L	0.00120	0.00300	1	EPA 1311/6010B	08/01/2011 10:00	08/01/2011 15:58	MW

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	% Solids	84.7		%	0.100	0.100	1	SM 2540G	08/02/2011 14:50	08/02/2011 14:50	AA

Sample Information

Client Sample ID: B-2 (0-2')

York Sample ID: 11G0898-02

York Project (SDG) No.
11G0898

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 26, 2011 12:00 pm

Date Received
07/27/2011

Total Petroleum Hydrocarbons-DRO

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	ND		mg/kg dry	6.33	10.9	1	EPA SW846-8015B	08/04/2011 14:51	08/05/2011 11:55	SR
	Surrogate Recoveries	Result			Acceptance Range						
638-68-6	Surrogate: Triacontane	124 %			30-150						

Lead TCLP by EPA 6010

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA SW 846-3010A

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-92-1	Lead	0.297		mg/L	0.00120	0.00300	1	EPA 1311/6010B	08/01/2011 10:00	08/01/2011 16:03	MW

Total Solids

Log-in Notes:

Sample Notes:

Sample Prepared by Method: % Solids Prep

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	% Solids	91.6		%	0.100	0.100	1	SM 2540G	08/02/2011 14:50	08/02/2011 14:50	AA

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: B-4 (0-2')

York Sample ID: 11G0898-03

York Project (SDG) No.
11G0898

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 26, 2011 1:00 pm

Date Received
07/27/2011

Total Petroleum Hydrocarbons-DRO

Sample Prepared by Method: EPA 3550B

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Total Petroleum Hydrocarbons-DRO	30.5		mg/kg dry	7.82	13.5	1	EPA SW846-8015B	08/04/2011 14:51	08/05/2011 11:55	SR
	Surrogate Recoveries	Result			Acceptance Range						
638-68-6	Surrogate: Triacotane	107 %			30-150						

Lead TCLP by EPA 6010

Sample Prepared by Method: EPA SW 846-3010A

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-92-1	Lead	0.520		mg/L	0.00120	0.00300	1	EPA 1311/6010B	08/01/2011 10:00	08/01/2011 16:08	MW

Total Solids

Sample Prepared by Method: % Solids Prep

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	% Solids	74.2		%	0.100	0.100	1	SM 2540G	08/02/2011 14:50	08/02/2011 14:50	AA

Sample Information

Client Sample ID: WC-2

York Sample ID: 11G0898-04

York Project (SDG) No.
11G0898

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 26, 2011 2:00 pm

Date Received
07/27/2011

Volatile Organics, TCL (Target Compound List)

Sample Prepared by Method: EPA 5035B

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
71-55-6	1,1,1-Trichloroethane	ND		ug/kg dry	2.3	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
79-34-5	1,1,2,2-Tetrachloroethane	ND		ug/kg dry	1.4	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND		ug/kg dry	1.5	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
79-00-5	1,1,2-Trichloroethane	ND		ug/kg dry	1.5	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
75-34-3	1,1-Dichloroethane	ND		ug/kg dry	1.7	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
75-35-4	1,1-Dichloroethylene	ND		ug/kg dry	3.2	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	1.2	22	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
96-12-8	1,2-Dibromo-3-chloropropane	ND		ug/kg dry	3.2	22	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
106-93-4	1,2-Dibromoethane	ND		ug/kg dry	1.6	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
107-06-2	1,2-Dichloroethane	ND		ug/kg dry	1.6	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
78-87-5	1,2-Dichloropropane	ND		ug/kg dry	0.53	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
78-93-3	2-Butanone	16	J	ug/kg dry	6.2	22	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
591-78-6	2-Hexanone	ND		ug/kg dry	2.1	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
108-10-1	4-Methyl-2-pentanone	ND		ug/kg dry	6.4	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: WC-2

York Sample ID: 11G0898-04

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

11G0898

170150101

Soil

July 26, 2011 2:00 pm

07/27/2011

Volatile Organics, TCL (Target Compound List)

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 5035B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
67-64-1	Acetone	66	B	ug/kg dry	7.5	22	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
71-43-2	Benzene	ND		ug/kg dry	1.2	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
75-27-4	Bromodichloromethane	ND		ug/kg dry	1.5	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
75-25-2	Bromoform	ND		ug/kg dry	1.4	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
74-83-9	Bromomethane	ND		ug/kg dry	3.0	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
75-15-0	Carbon disulfide	3.2	J	ug/kg dry	1.5	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
56-23-5	Carbon tetrachloride	ND		ug/kg dry	2.5	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
108-90-7	Chlorobenzene	ND		ug/kg dry	0.85	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
75-00-3	Chloroethane	ND		ug/kg dry	1.8	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
67-66-3	Chloroform	ND		ug/kg dry	0.87	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
74-87-3	Chloromethane	ND		ug/kg dry	2.2	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
156-59-2	cis-1,2-Dichloroethylene	ND		ug/kg dry	2.3	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
10061-01-5	cis-1,3-Dichloropropylene	ND		ug/kg dry	0.85	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
124-48-1	Dibromochloromethane	ND		ug/kg dry	1.6	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
75-71-8	Dichlorodifluoromethane	ND		ug/kg dry	2.0	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
100-41-4	Ethyl Benzene	ND		ug/kg dry	0.85	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
1634-04-4	Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	0.92	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
75-09-2	Methylene chloride	26	B	ug/kg dry	2.6	22	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
95-47-6	o-Xylene	ND		ug/kg dry	1.2	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
1330-20-7P/M	p- & m- Xylenes	ND		ug/kg dry	1.3	22	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
100-42-5	Styrene	ND		ug/kg dry	1.0	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
127-18-4	Tetrachloroethylene	ND		ug/kg dry	1.3	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
108-88-3	Toluene	ND		ug/kg dry	0.56	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
156-60-5	trans-1,2-Dichloroethylene	ND		ug/kg dry	1.6	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
10061-02-6	trans-1,3-Dichloropropylene	ND		ug/kg dry	1.6	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
79-01-6	Trichloroethylene	ND		ug/kg dry	1.4	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
75-69-4	Trichlorofluoromethane	ND		ug/kg dry	2.2	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
75-01-4	Vinyl Chloride	ND		ug/kg dry	2.3	11	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
1330-20-7	Xylenes, Total	ND		ug/kg dry	2.5	34	2	EPA SW846-8260B	08/03/2011 14:48	08/03/2011 14:48	SS
Surrogate Recoveries		Result	Acceptance Range								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	102 %	72.6-129								
460-00-4	Surrogate: p-Bromofluorobenzene	98.1 %	63.5-145								
2037-26-5	Surrogate: Toluene-d8	100 %	86.6-116								

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: WC-2

York Sample ID: 11G0898-04

York Project (SDG) No.
11G0898

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 26, 2011 2:00 pm

Date Received
07/27/2011

Volatile Organics, TCLP RCRA List

Sample Prepared by Method: EPA 5030B

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
75-35-4	1,1-Dichloroethylene	ND		ug/L	13	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 15:03	SS
107-06-2	1,2-Dichloroethane	ND		ug/L	6.5	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 15:03	SS
106-46-7	1,4-Dichlorobenzene	ND		ug/L	6.8	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 15:03	SS
78-93-3	2-Butanone	ND		ug/L	26	100	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 15:03	SS
71-43-2	Benzene	ND		ug/L	4.8	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 15:03	SS
56-23-5	Carbon tetrachloride	ND		ug/L	10	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 15:03	SS
108-90-7	Chlorobenzene	ND		ug/L	3.5	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 15:03	SS
67-66-3	Chloroform	ND		ug/L	3.6	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 15:03	SS
127-18-4	Tetrachloroethylene	ND		ug/L	5.2	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 15:03	SS
79-01-6	Trichloroethylene	ND		ug/L	5.7	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 15:03	SS
75-01-4	Vinyl Chloride	ND		ug/L	9.7	50	10	EPA SW846-8260B/1311	08/02/2011 12:49	08/02/2011 15:03	SS
Surrogate Recoveries		Result	Acceptance Range								
17060-07-0	Surrogate: 1,2-Dichloroethane-d4	99.1 %	70-130								
460-00-4	Surrogate: p-Bromofluorobenzene	108 %	70-130								
2037-26-5	Surrogate: Toluene-d8	89.2 %	70-130								

Semi-Volatiles, EPA TCL List

Sample Prepared by Method: EPA 3550B

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
120-82-1	1,2,4-Trichlorobenzene	ND		ug/kg dry	102	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
95-50-1	1,2-Dichlorobenzene	ND		ug/kg dry	81.8	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
541-73-1	1,3-Dichlorobenzene	ND		ug/kg dry	89.0	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
106-46-7	1,4-Dichlorobenzene	ND		ug/kg dry	64.1	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
95-95-4	2,4,5-Trichlorophenol	ND		ug/kg dry	50.8	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
88-06-2	2,4,6-Trichlorophenol	ND		ug/kg dry	91.4	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
120-83-2	2,4-Dichlorophenol	ND		ug/kg dry	76.3	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
105-67-9	2,4-Dimethylphenol	ND		ug/kg dry	59.9	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
51-28-5	2,4-Dinitrophenol	ND		ug/kg dry	157	374	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
121-14-2	2,4-Dinitrotoluene	ND		ug/kg dry	81.8	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
606-20-2	2,6-Dinitrotoluene	ND		ug/kg dry	89.0	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
91-58-7	2-Chloronaphthalene	ND		ug/kg dry	57.1	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
95-57-8	2-Chlorophenol	ND		ug/kg dry	109	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
91-57-6	2-Methylnaphthalene	ND		ug/kg dry	65.1	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
95-48-7	2-Methylphenol	ND		ug/kg dry	68.7	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
88-74-4	2-Nitroaniline	ND		ug/kg dry	97.0	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
88-75-5	2-Nitrophenol	ND		ug/kg dry	64.1	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
100-01-6	3- & 4-Methylphenols	ND		ug/kg dry	84.1	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: WC-2

York Sample ID: 11G0898-04

York Project (SDG) No.
11G0898

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 26, 2011 2:00 pm

Date Received
07/27/2011

Semi-Volatiles, EPA TCL List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
91-94-1	3,3'-Dichlorobenzidine	ND		ug/kg dry	47.1	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
99-09-2	3-Nitroaniline	ND		ug/kg dry	67.8	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
534-52-1	4,6-Dinitro-2-methylphenol	ND		ug/kg dry	141	374	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
101-55-3	4-Bromophenyl phenyl ether	ND		ug/kg dry	77.9	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
59-50-7	4-Chloro-3-methylphenol	ND		ug/kg dry	20.1	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
106-47-8	4-Chloroaniline	ND		ug/kg dry	73.8	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
7005-72-3	4-Chlorophenyl phenyl ether	ND		ug/kg dry	53.9	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
100-02-7	4-Nitroaniline	ND		ug/kg dry	62.1	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
56-57-5	4-Nitrophenol	ND		ug/kg dry	67.6	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
83-32-9	Acenaphthene	ND		ug/kg dry	108	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
208-96-8	Acenaphthylene	ND		ug/kg dry	52.4	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
120-12-7	Anthracene	ND		ug/kg dry	46.3	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
56-55-3	Benzo(a)anthracene	ND		ug/kg dry	72.3	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
50-32-8	Benzo(a)pyrene	ND		ug/kg dry	48.7	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
205-99-2	Benzo(b)fluoranthene	ND		ug/kg dry	71.1	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
191-24-2	Benzo(g,h,i)perylene	ND		ug/kg dry	56.2	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
207-08-9	Benzo(k)fluoranthene	ND		ug/kg dry	72.3	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
65-85-0	Benzoic acid	ND		ug/kg dry	128	374	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
100-51-6	Benzyl alcohol	ND		ug/kg dry	60.5	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
85-68-7	Benzyl butyl phthalate	ND		ug/kg dry	78.0	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
111-91-1	Bis(2-chloroethoxy)methane	ND		ug/kg dry	68.9	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
111-44-4	Bis(2-chloroethyl)ether	ND		ug/kg dry	63.5	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
108-60-1	Bis(2-chloroisopropyl)ether	ND		ug/kg dry	69.4	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
117-81-7	Bis(2-ethylhexyl)phthalate	ND		ug/kg dry	62.6	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
218-01-9	Chrysene	ND		ug/kg dry	75.3	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
53-70-3	Dibenzo(a,h)anthracene	ND		ug/kg dry	47.2	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
132-64-9	Dibenzofuran	ND		ug/kg dry	60.3	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
84-66-2	Diethyl phthalate	ND		ug/kg dry	98.1	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
131-11-3	Dimethyl phthalate	ND		ug/kg dry	53.9	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
84-74-2	Di-n-butyl phthalate	ND		ug/kg dry	55.8	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
117-84-0	Di-n-octyl phthalate	ND		ug/kg dry	84.1	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
206-44-0	Fluoranthene	ND		ug/kg dry	108	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
86-73-7	Fluorene	ND		ug/kg dry	52.4	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
118-74-1	Hexachlorobenzene	ND		ug/kg dry	30.5	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
87-68-3	Hexachlorobutadiene	ND		ug/kg dry	74.8	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: WC-2

York Sample ID: 11G0898-04

York Project (SDG) No.
11G0898

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 26, 2011 2:00 pm

Date Received
07/27/2011

Semi-Volatiles, EPA TCL List

Sample Prepared by Method: EPA 3550B

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
77-47-4	Hexachlorocyclopentadiene	ND		ug/kg dry	139	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
67-72-1	Hexachloroethane	ND		ug/kg dry	67.2	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
193-39-5	Indeno(1,2,3-cd)pyrene	ND		ug/kg dry	68.9	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
78-59-1	Isophorone	ND		ug/kg dry	69.4	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
91-20-3	Naphthalene	ND		ug/kg dry	55.8	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
98-95-3	Nitrobenzene	ND		ug/kg dry	84.1	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
621-64-7	N-nitroso-di-n-propylamine	ND		ug/kg dry	48.8	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
86-30-6	N-Nitrosodiphenylamine	ND		ug/kg dry	108	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
87-86-5	Pentachlorophenol	ND		ug/kg dry	52.4	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
85-01-8	Phenanthrene	ND		ug/kg dry	68.9	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
108-95-2	Phenol	ND		ug/kg dry	74.8	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD
129-00-0	Pyrene	ND		ug/kg dry	67.0	187	1	EPA SW846-8270C	08/04/2011 11:18	08/05/2011 19:50	TD

Surrogate Recoveries

Surrogate	Result	Acceptance Range
5175-83-7 Surrogate: 2,4,6-Tribromophenol	19.4 %	15-110
321-60-8 Surrogate: 2-Fluorobiphenyl	30.5 %	30-130
367-12-4 Surrogate: 2-Fluorophenol	26.2 %	15-110
4165-60-0 Surrogate: Nitrobenzene-d5	26.8 %	30-130
4165-62-2 Surrogate: Phenol-d5	25.0 %	15-110
1718-51-0 Surrogate: Terphenyl-d14	31.8 %	30-130

Semi-Volatiles, TCLP RCRA Target List

Sample Prepared by Method: EPA 3510C

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
106-46-7	1,4-Dichlorobenzene	ND		ug/L	6.45	10.0	1	EPA SW846- 8270C/1311	08/01/2011 07:57	08/02/2011 03:57	TD
95-95-4	2,4,5-Trichlorophenol	ND		ug/L	7.22	10.0	1	EPA SW846- 8270C/1311	08/01/2011 07:57	08/02/2011 03:57	TD
88-06-2	2,4,6-Trichlorophenol	ND		ug/L	6.54	10.0	1	EPA SW846- 8270C/1311	08/01/2011 07:57	08/02/2011 03:57	TD
121-14-2	2,4-Dinitrotoluene	ND		ug/L	4.73	10.0	1	EPA SW846- 8270C/1311	08/01/2011 07:57	08/02/2011 03:57	TD
95-48-7	2-Methylphenol	ND		ug/L	1.71	10.0	1	EPA SW846- 8270C/1311	08/01/2011 07:57	08/02/2011 03:57	TD
100-01-6	3- & 4-Methylphenols	ND		ug/L	7.43	10.0	1	EPA SW846- 8270C/1311	08/01/2011 07:57	08/02/2011 03:57	TD
1319-77-3	Cresols, total	ND		ug/L	23.2	30.0	1	EPA SW846- 8270C/1311	08/01/2011 07:57	08/02/2011 03:57	TD
118-74-1	Hexachlorobenzene	ND		ug/L	5.91	10.0	1	EPA SW846- 8270C/1311	08/01/2011 07:57	08/02/2011 03:57	TD
87-68-3	Hexachlorobutadiene	ND		ug/L	6.62	10.0	1	EPA SW846- 8270C/1311	08/01/2011 07:57	08/02/2011 03:57	TD
67-72-1	Hexachloroethane	ND		ug/L	7.26	10.0	1	EPA SW846- 8270C/1311	08/01/2011 07:57	08/02/2011 03:57	TD
98-95-3	Nitrobenzene	ND		ug/L	3.93	10.0	1	EPA SW846- 8270C/1311	08/01/2011 07:57	08/02/2011 03:57	TD
87-86-5	Pentachlorophenol	ND		ug/L	7.53	10.0	1	EPA SW846- 8270C/1311	08/01/2011 07:57	08/02/2011 03:57	TD
110-86-1	Pyridine	ND		ug/L	6.37	10.0	1	EPA SW846- 8270C/1311	08/01/2011 07:57	08/02/2011 03:57	TD

Surrogate Recoveries

Surrogate	Result	Acceptance Range
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YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: WC-2

York Sample ID: 11G0898-04

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

11G0898

170150101

Soil

July 26, 2011 2:00 pm

07/27/2011

Semi-Volatiles, TCLP RCRA Target List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
5175-83-7	Surrogate: 2,4,6-Tribromophenol	20.2 %	S-04		15-110						
321-60-8	Surrogate: 2-Fluorobiphenyl	20.6 %	S-04		30-130						
367-12-4	Surrogate: 2-Fluorophenol	8.06 %	S-04		15-110						
4165-60-0	Surrogate: Nitrobenzene-d5	22.6 %	S-04		30-130						
4165-62-2	Surrogate: Phenol-d5	5.43 %	S-04		10-110						
1718-51-0	Surrogate: Terphenyl-d14	29.1 %	S-04		30-130						

Pesticides, 8081 target list

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3550B

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
72-54-8	4,4'-DDD	ND		ug/kg dry	1.47	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
72-55-9	4,4'-DDE	ND		ug/kg dry	1.89	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
50-29-3	4,4'-DDT	ND		ug/kg dry	1.48	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
309-00-2	Aldrin	ND		ug/kg dry	2.11	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
319-84-6	alpha-BHC	ND		ug/kg dry	2.49	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
5103-71-9	alpha-Chlordane	ND		ug/kg dry	1.86	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
319-85-7	beta-BHC	ND		ug/kg dry	2.08	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
319-86-8	delta-BHC	ND		ug/kg dry	1.80	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
60-57-1	Dieldrin	ND		ug/kg dry	1.95	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
959-98-8	Endosulfan I	ND		ug/kg dry	1.60	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
33213-65-9	Endosulfan II	ND		ug/kg dry	2.02	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
1031-07-8	Endosulfan sulfate	ND		ug/kg dry	1.69	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
72-20-8	Endrin	ND		ug/kg dry	2.00	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
7421-93-4	Endrin aldehyde	ND		ug/kg dry	2.22	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
53494-70-5	Endrin ketone	ND		ug/kg dry	1.45	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
58-89-9	gamma-BHC (Lindane)	ND		ug/kg dry	2.29	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
5103-74-2	gamma-Chlordane	ND		ug/kg dry	1.45	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
76-44-8	Heptachlor	ND		ug/kg dry	2.63	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
1024-57-3	Heptachlor epoxide	ND		ug/kg dry	1.45	3.30	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
72-43-5	Methoxychlor	ND		ug/kg dry	8.51	16.5	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
8001-35-2	Toxaphene	ND		ug/kg dry	143	330	10	EPA SW 846-8081	08/04/2011 09:25	08/04/2011 18:09	JW
	Surrogate Recoveries	Result			Acceptance Range						
2051-24-3	Surrogate: Decachlorobiphenyl	79.8 %			30-150						
877-09-8	Surrogate: Tetrachloro-m-xylene	84.3 %			30-150						

Pesticides, TCLP RCRA List

Log-in Notes:

Sample Notes:

Sample Prepared by Method: EPA 3510C

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
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YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: WC-2		York Sample ID: 11G0898-04
York Project (SDG) No. 11G0898	Client Project ID 170150101	Matrix Soil
		Collection Date/Time July 26, 2011 2:00 pm
		Date Received 07/27/2011

Pesticides, TCLP RCRA List

Sample Prepared by Method: EPA 3510C

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
57-74-9	Chlordane, total	ND		ug/L	0.00762	0.00762	1	EPA SW 846-8081/1311	08/01/2011 07:55	08/01/2011 20:31	JW
72-20-8	Endrin	ND		ug/L	0.00179	0.00190	1	EPA SW 846-8081/1311	08/01/2011 07:55	08/01/2011 20:31	JW
58-89-9	gamma-BHC (Lindane)	ND		ug/L	0.00183	0.00190	1	EPA SW 846-8081/1311	08/01/2011 07:55	08/01/2011 20:31	JW
76-44-8	Heptachlor	ND		ug/L	0.00181	0.00190	1	EPA SW 846-8081/1311	08/01/2011 07:55	08/01/2011 20:31	JW
1024-57-3	Heptachlor epoxide	ND		ug/L	0.00143	0.00190	1	EPA SW 846-8081/1311	08/01/2011 07:55	08/01/2011 20:31	JW
72-43-5	Methoxychlor	ND		ug/L	0.00373	0.00952	1	EPA SW 846-8081/1311	08/01/2011 07:55	08/01/2011 20:31	JW
8001-35-2	Toxaphene	ND		ug/L	0.190	0.190	1	EPA SW 846-8081/1311	08/01/2011 07:55	08/01/2011 20:31	JW
	Surrogate Recoveries	Result			Acceptance Range						
2051-24-3	Surrogate: Decachlorobiphenyl	51.1 %			30-150						
877-09-8	Surrogate: Tetrachloro-m-xylene	67.2 %			30-150						

Polychlorinated Biphenyls (PCB)

Sample Prepared by Method: EPA 3550B

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
12674-11-2	Aroclor 1016	ND		mg/kg dry	0.00886	0.0191	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 19:26	JW
11104-28-2	Aroclor 1221	ND		mg/kg dry	0.00886	0.0191	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 19:26	JW
11141-16-5	Aroclor 1232	ND		mg/kg dry	0.00886	0.0191	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 19:26	JW
53469-21-9	Aroclor 1242	ND		mg/kg dry	0.00886	0.0191	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 19:26	JW
12672-29-6	Aroclor 1248	ND		mg/kg dry	0.00886	0.0191	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 19:26	JW
11097-69-1	Aroclor 1254	ND		mg/kg dry	0.00762	0.0191	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 19:26	JW
11096-82-5	Aroclor 1260	ND		mg/kg dry	0.00762	0.0191	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 19:26	JW
37324-23-5	Aroclor 1262	ND		mg/kg dry	0.00762	0.0191	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 19:26	JW
11100-14-4	Aroclor 1268	ND		mg/kg dry	0.00762	0.0191	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 19:26	JW
1336-36-3	Total PCBs	ND		mg/kg dry	0.00762	0.0191	1	EPA SW 846-8082	08/04/2011 09:25	08/04/2011 19:26	JW
	Surrogate Recoveries	Result			Acceptance Range						
2051-24-3	Surrogate: Decachlorobiphenyl	72.5 %			30-150						
877-09-8	Surrogate: Tetrachloro-m-xylene	71.5 %			30-150						

Herbicides, Target List

Sample Prepared by Method: EPA 3550B/8151A

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
93-76-5	2,4,5-T	ND		ug/kg dry	67.3	112	1	EPA SW846-8151B	08/02/2011 08:17	08/05/2011 00:00	JW
93-72-1	2,4,5-TP (Silvex)	ND		ug/kg dry	72.9	112	1	EPA SW846-8151B	08/02/2011 08:17	08/05/2011 00:00	JW
94-75-7	2,4-D	ND		ug/kg dry	80.7	112	1	EPA SW846-8151B	08/02/2011 08:17	08/05/2011 00:00	JW
	Surrogate Recoveries	Result			Acceptance Range						
19719-28-9	Surrogate: 2,4-Dichlorophenylacetic acid	11.6 %			10-148						

YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: WC-2

York Sample ID: 11G0898-04

York Project (SDG) No.
11G0898

Client Project ID
170150101

Matrix
Soil

Collection Date/Time
July 26, 2011 2:00 pm

Date Received
07/27/2011

Herbicides, TCLP Target List

Sample Prepared by Method: EPA 3535A

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
93-72-1	2,4,5-TP (Silvex)	ND		ug/L	0.0180	5.00	1	EPA SW846-8151B/1311	08/01/2011 08:24	08/02/2011 00:00	JW
94-75-7	2,4-D	ND		ug/L	0.0197	5.00	1	EPA SW846-8151B/1311	08/01/2011 08:24	08/02/2011 00:00	JW
Surrogate Recoveries		Result			Acceptance Range						
19719-28-9	Surrogate: 2,4-Dichlorophenylacetic acid 108 %				30-150						

Metals, Target Analyte

Sample Prepared by Method: EPA SW 846-3050B

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7429-90-5	Aluminum	10700		mg/kg dry	1.41	2.24	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-36-0	Antimony	0.920		mg/kg dry	0.157	0.561	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-38-2	Arsenic	5.88		mg/kg dry	0.213	0.561	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-39-3	Barium	221		mg/kg dry	0.269	0.561	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-41-7	Beryllium	ND		mg/kg dry	0.009	0.011	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-43-9	Cadmium	ND		mg/kg dry	0.146	0.561	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-70-2	Calcium	5340		mg/kg dry	0.049	2.24	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-47-3	Chromium	21.5		mg/kg dry	0.090	0.561	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-48-4	Cobalt	7.42		mg/kg dry	0.090	0.561	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-50-8	Copper	66.5		mg/kg dry	0.157	0.561	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7439-89-6	Iron	19200		mg/kg dry	0.617	1.12	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7439-92-1	Lead	448		mg/kg dry	0.112	0.336	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7439-95-4	Magnesium	2960		mg/kg dry	0.919	2.24	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7439-96-5	Manganese	328		mg/kg dry	0.090	1.12	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-02-0	Nickel	22.0		mg/kg dry	0.078	0.561	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-09-7	Potassium	1200		mg/kg dry	3.05	11.2	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7782-49-2	Selenium	2.01		mg/kg dry	0.237	0.561	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-22-4	Silver	ND		mg/kg dry	0.101	0.561	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-23-5	Sodium	120		mg/kg dry	7.53	11.2	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-28-0	Thallium	ND		mg/kg dry	0.213	0.561	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-62-2	Vanadium	31.9		mg/kg dry	0.090	0.561	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW
7440-66-6	Zinc	179		mg/kg dry	0.078	0.561	1	EPA SW846-6010B	08/01/2011 15:38	08/02/2011 01:47	MW

Metals, TCLP RCRA

Sample Prepared by Method: EPA SW 846-3010A

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7440-38-2	Arsenic	ND		mg/L	0.001	0.010	1	EPA SW846-6010B/1311	08/01/2011 10:00	08/01/2011 16:12	MW
7440-39-3	Barium	1.74		mg/L	0.004	0.010	1	EPA SW846-6010B/1311	08/01/2011 10:00	08/01/2011 16:12	MW
7440-43-9	Cadmium	ND		mg/L	0.001	0.003	1	EPA SW846-6010B/1311	08/01/2011 10:00	08/01/2011 16:12	MW
7440-47-3	Chromium	ND		mg/L	0.0009	0.005	1	EPA SW846-6010B/1311	08/01/2011 10:00	08/01/2011 16:12	MW
7439-92-1	Lead	0.051		mg/L	0.001	0.003	1	EPA SW846-6010B/1311	08/01/2011 10:00	08/01/2011 16:12	MW

120 RESEARCH DRIVE

STRATFORD, CT 06615

(203) 325-1371

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YORK

ANALYTICAL LABORATORIES, INC.

Sample Information

Client Sample ID: WC-2

York Sample ID: 11G0898-04

York Project (SDG) No.

Client Project ID

Matrix

Collection Date/Time

Date Received

11G0898

170150101

Soil

July 26, 2011 2:00 pm

07/27/2011

Metals, TCLP RCRA

Sample Prepared by Method: EPA SW 846-3010A

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7782-49-2	Selenium	ND		mg/L	0.002	0.010	1	EPA SW846-6010B/1311	08/01/2011 10:00	08/01/2011 16:12	MW
7440-22-4	Silver	ND		mg/L	0.001	0.005	1	EPA SW846-6010B/1311	08/01/2011 10:00	08/01/2011 16:12	MW

Mercury by 7470/7471

Sample Prepared by Method: EPA SW846-7471

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	Mercury	ND		mg/kg dry	0.109	0.112	1	EPA SW846-7471	08/01/2011 13:38	08/01/2011 13:38	AA

Mercury, TCLP

Sample Prepared by Method: EPA SW846-7470

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
7439-97-6	Mercury	ND		mg/L	0.000039000	0.000200C	1	EPA SW846-7470/1311	08/01/2011 13:33	08/01/2011 13:33	AA

Ignitability

Sample Prepared by Method: Analysis Preparation

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Ignitability	Non-Ignit.		P/F			1	EPA SW846-1030P	08/01/2011 15:50	08/01/2011 15:50	AA

Total Solids

Sample Prepared by Method: % Solids Prep

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
solids	% Solids	89.2		%	0.100	0.100	1	SM 2540G	08/02/2011 14:50	08/02/2011 14:50	AA

pH

Sample Prepared by Method: Analysis Preparation

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	pH	8.01		pH units		0.500	1	EPA SW846-9045D	08/02/2011 12:40	08/02/2011 12:40	MZ

Reactivity-Cyanide

Sample Prepared by Method: Analysis Preparation

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Reactivity - Cyanide	ND		mg/kg	0.250	0.250	1	EPA SW-846 Ch.7.3.3	08/02/2011 13:04	08/02/2011 13:04	AD

Reactivity-Sulfide

Sample Prepared by Method: Analysis Preparation

Log-in Notes:

Sample Notes:

CAS No.	Parameter	Result	Flag	Units	MDL	RL	Dilution	Reference Method	Date/Time Prepared	Date/Time Analyzed	Analyst
	Reactivity - Sulfide	ND		mg/kg	15.0	15.0	1	EPA SW846 Ch.7.3.4	08/02/2011 14:23	08/02/2011 14:23	AD

YORK

ANALYTICAL LABORATORIES, INC.

Analytical Batch Summary

Batch ID: BG11066 **Preparation Method:** EPA SW846-7470 **Prepared By:** AA

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-04	WC-2	08/01/11
BG11066-BLK1	Blank	08/01/11
BG11066-BS1	LCS	08/01/11

Batch ID: BG11084 **Preparation Method:** EPA SW846-7471 **Prepared By:** AA

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-04	WC-2	08/01/11
BG11084-BLK1	Blank	08/01/11
BG11084-BS1	LCS	08/01/11

Batch ID: BH10008 **Preparation Method:** EPA 3510C **Prepared By:** KAM

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-04	WC-2	08/01/11
BH10008-BLK1	Blank	08/01/11
BH10008-BS1	LCS	08/01/11
BH10008-BSD1	LCS Dup	08/01/11

Batch ID: BH10009 **Preparation Method:** EPA 3510C **Prepared By:** KAM

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-04	WC-2	08/01/11
BH10009-BLK1	Blank	08/01/11
BH10009-BS1	LCS	08/01/11
BH10009-BSD1	LCS Dup	08/01/11

Batch ID: BH10011 **Preparation Method:** Analysis Preparation **Prepared By:** AA

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-04	WC-2	08/01/11

Batch ID: BH10022 **Preparation Method:** EPA SW 846-3010A **Prepared By:** MW

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-01	B-1 (0-2')	08/01/11
11G0898-02	B-2 (0-2')	08/01/11
11G0898-03	B-4 (0-2')	08/01/11
11G0898-04	WC-2	08/01/11
BH10022-BLK1	Blank	08/01/11
BH10022-BLK1	Blank	08/01/11
BH10022-BLK2	Blank	08/01/11
BH10022-BLK2	Blank	08/01/11
BH10022-SRM1	Reference	08/01/11
BH10022-SRM1	Reference	08/01/11

YORK

ANALYTICAL LABORATORIES, INC.

Batch ID: BH10051 **Preparation Method:** EPA SW 846-3050B **Prepared By:** MW

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-04	WC-2	08/01/11
BH10051-BLK1	Blank	08/01/11
BH10051-SRM1	Reference	08/01/11

Batch ID: BH10066 **Preparation Method:** EPA 3550B/8151A **Prepared By:** TFD

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-04	WC-2	08/02/11
BH10066-BLK1	Blank	08/02/11
BH10066-BS1	LCS	08/02/11
BH10066-BSD1	LCS Dup	08/02/11

Batch ID: BH10067 **Preparation Method:** EPA 3535A **Prepared By:** TFD

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-04	WC-2	08/01/11
BH10067-BLK1	Blank	08/01/11
BH10067-BS1	LCS	08/01/11
BH10067-BSD1	LCS Dup	08/01/11

Batch ID: BH10077 **Preparation Method:** Analysis Preparation **Prepared By:** AD

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-04	WC-2	08/02/11
BH10077-BLK1	Blank	08/02/11

Batch ID: BH10087 **Preparation Method:** Analysis Preparation **Prepared By:** MZ

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-04	WC-2	08/02/11

Batch ID: BH10089 **Preparation Method:** % Solids Prep **Prepared By:** AA

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-01	B-1 (0-2')	08/02/11
11G0898-02	B-2 (0-2')	08/02/11
11G0898-03	B-4 (0-2')	08/02/11
11G0898-04	WC-2	08/02/11

Batch ID: BH10097 **Preparation Method:** EPA 5030B **Prepared By:** AY

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-04	WC-2	08/02/11
BH10097-BLK1	Blank	08/02/11

YORK

ANALYTICAL LABORATORIES, INC.

BH10097-BLK2 Blank 08/02/11

Batch ID: BH10098 **Preparation Method:** Analysis Preparation **Prepared By:** AD

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-04	WC-2	08/02/11
BH10098-BLK1	Blank	08/02/11

Batch ID: BH10167 **Preparation Method:** EPA 5035B **Prepared By:** AY

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-04	WC-2	08/03/11
BH10167-BLK1	Blank	08/03/11
BH10167-BS1	LCS	08/03/11
BH10167-BSD1	LCS Dup	08/03/11

Batch ID: BH10207 **Preparation Method:** EPA 3550B **Prepared By:** CM

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-04	WC-2	08/04/11
11G0898-04	WC-2	08/04/11
BH10207-BLK1	Blank	08/04/11
BH10207-BLK1	Blank	08/04/11
BH10207-BS1	LCS	08/04/11
BH10207-BS2	LCS	08/04/11

Batch ID: BH10214 **Preparation Method:** EPA 3550B **Prepared By:** KAM

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-04	WC-2	08/04/11
BH10214-BLK1	Blank	08/04/11
BH10214-BS1	LCS	08/04/11

Batch ID: BH10227 **Preparation Method:** EPA 3550B **Prepared By:** CM

YORK Sample ID	Client Sample ID	Preparation Date
11G0898-01	B-1 (0-2')	08/04/11
11G0898-02	B-2 (0-2')	08/04/11
11G0898-03	B-4 (0-2')	08/04/11
BH10227-BLK1	Blank	08/04/11
BH10227-BS1	LCS	08/04/11

YORK

ANALYTICAL LABORATORIES, INC.

Volatile Organic Compounds by EPA SW846-8260B - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BH10097 - EPA 5030B

Blank (BH10097-BLK1)

Prepared & Analyzed: 08/02/2011

1,1-Dichloroethylene	ND	50	ug/L								
1,2-Dichloroethane	ND	50	"								
1,4-Dichlorobenzene	ND	50	"								
2-Butanone	ND	100	"								
Benzene	ND	50	"								
Carbon tetrachloride	ND	50	"								
Chlorobenzene	ND	50	"								
Chloroform	ND	50	"								
Tetrachloroethylene	ND	50	"								
Trichloroethylene	ND	50	"								
Vinyl Chloride	ND	50	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	47.8		"	50.0		95.5	70-130				
<i>Surrogate: p-Bromofluorobenzene</i>	53.3		"	50.0		107	70-130				
<i>Surrogate: Toluene-d8</i>	42.6		"	50.0		85.3	70-130				

Blank (BH10097-BLK2)

Prepared & Analyzed: 08/02/2011

1,1-Dichloroethylene	ND	50	ug/L								
1,2-Dichloroethane	ND	50	"								
1,4-Dichlorobenzene	ND	50	"								
2-Butanone	ND	100	"								
Benzene	ND	50	"								
Carbon tetrachloride	ND	50	"								
Chlorobenzene	ND	50	"								
Chloroform	ND	50	"								
Tetrachloroethylene	ND	50	"								
Trichloroethylene	ND	50	"								
Vinyl Chloride	ND	50	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	48.4		"	50.0		96.9	70-130				
<i>Surrogate: p-Bromofluorobenzene</i>	52.6		"	50.0		105	70-130				
<i>Surrogate: Toluene-d8</i>	44.1		"	50.0		88.2	70-130				

YORK

ANALYTICAL LABORATORIES, INC.

Volatile Organic Compounds by EPA SW846-8260B - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10167 - EPA 5035B										
Blank (BH10167-BLK1)						Prepared & Analyzed: 08/03/2011				
1,1,1-Trichloroethane	ND	5.0	ug/kg wet							
1,1,2,2-Tetrachloroethane	ND	5.0	"							
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	ND	5.0	"							
1,1,2-Trichloroethane	ND	5.0	"							
1,1-Dichloroethane	ND	5.0	"							
1,1-Dichloroethylene	ND	5.0	"							
1,2,4-Trichlorobenzene	ND	10	"							
1,2-Dibromo-3-chloropropane	ND	10	"							
1,2-Dibromoethane	ND	5.0	"							
1,2-Dichloroethane	ND	5.0	"							
1,2-Dichloropropane	ND	5.0	"							
2-Butanone	ND	10	"							
2-Hexanone	ND	5.0	"							
4-Methyl-2-pentanone	ND	5.0	"							
Acetone	4.6	10	"							
Benzene	ND	5.0	"							
Bromodichloromethane	ND	5.0	"							
Bromoform	ND	5.0	"							
Bromomethane	ND	5.0	"							
Carbon disulfide	ND	5.0	"							
Carbon tetrachloride	ND	5.0	"							
Chlorobenzene	ND	5.0	"							
Chloroethane	ND	5.0	"							
Chloroform	ND	5.0	"							
Chloromethane	ND	5.0	"							
cis-1,2-Dichloroethylene	ND	5.0	"							
cis-1,3-Dichloropropylene	ND	5.0	"							
Dibromochloromethane	ND	5.0	"							
Dichlorodifluoromethane	ND	5.0	"							
Ethyl Benzene	ND	5.0	"							
Methyl tert-butyl ether (MTBE)	ND	5.0	"							
Methylene chloride	6.4	10	"							
o-Xylene	ND	5.0	"							
p- & m- Xylenes	ND	10	"							
Styrene	ND	5.0	"							
Tetrachloroethylene	ND	5.0	"							
Toluene	ND	5.0	"							
trans-1,2-Dichloroethylene	ND	5.0	"							
trans-1,3-Dichloropropylene	ND	5.0	"							
Trichloroethylene	ND	5.0	"							
Trichlorofluoromethane	ND	5.0	"							
Vinyl Chloride	ND	5.0	"							
Xylenes, Total	ND	15	"							
Surrogate: 1,2-Dichloroethane-d4	51.0		ug/L	50.0		102		72.6-129		
Surrogate: p-Bromofluorobenzene	48.2		"	50.0		96.4		63.5-145		
Surrogate: Toluene-d8	49.6		"	50.0		99.3		86.6-116		

YORK

ANALYTICAL LABORATORIES, INC.

Volatile Organic Compounds by EPA SW846-8260B - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting		Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	
		Limit	Units						RPD	Limit
Batch BH10167 - EPA 5035B										
LCS (BH10167-BS1)						Prepared & Analyzed: 08/03/2011				
1,1,1-Trichloroethane	57		ug/L	50.0		114	72.6-137			
1,1,2,2-Tetrachloroethane	51		"	50.0		101	65.4-135			
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	55		"	50.0		110	67.8-129			
1,1,2-Trichloroethane	55		"	50.0		110	68.6-132			
1,1-Dichloroethane	57		"	50.0		114	71.7-131			
1,1-Dichloroethylene	58		"	50.0		115	74.4-148			
1,2,4-Trichlorobenzene	54		"	50.0		109	65-139			
1,2-Dibromo-3-chloropropane	47		"	50.0		94.6	53.3-149			
1,2-Dibromoethane	59		"	50.0		118	72.7-134			
1,2-Dichloroethane	57		"	50.0		114	68.7-136			
1,2-Dichloropropane	56		"	50.0		113	68.2-136			
2-Butanone	63		"	50.0		126	51.9-137			
2-Hexanone	45		"	50.0		89.7	51.6-150			
4-Methyl-2-pentanone	50		"	50.0		101	50.6-142			
Acetone	28		"	50.0		55.5	16-155			
Benzene	56		"	50.0		112	70.4-128			
Bromodichloromethane	57		"	50.0		114	70.6-136			
Bromoform	54		"	50.0		107	63.2-139			
Bromomethane	55		"	50.0		109	50.2-135			
Carbon disulfide	100		"	100		104	40.4-124			
Carbon tetrachloride	59		"	50.0		118	71.9-140			
Chlorobenzene	56		"	50.0		113	76.4-127			
Chloroethane	54		"	50.0		107	50.8-142			
Chloroform	58		"	50.0		116	73.6-132			
Chloromethane	45		"	50.0		90.6	32.9-131			
cis-1,2-Dichloroethylene	69		"	50.0		139	69.5-128	High Bias		
cis-1,3-Dichloropropylene	54		"	50.0		108	66.6-129			
Dibromochloromethane	57		"	50.0		114	71.4-135			
Dichlorodifluoromethane	38		"	50.0		75.4	39.4-108			
Ethyl Benzene	57		"	50.0		115	75.2-131			
Methyl tert-butyl ether (MTBE)	56		"	50.0		113	56.5-140			
Methylene chloride	41		"	50.0		82.1	58.4-120			
o-Xylene	55		"	50.0		110	70.4-126			
p- & m- Xylenes	110		"	100		113	73.8-130			
Styrene	55		"	50.0		110	71.7-126			
Tetrachloroethylene	63		"	50.0		125	65-168			
Toluene	57		"	50.0		113	72.5-127			
trans-1,2-Dichloroethylene	56		"	50.0		113	62.2-144			
trans-1,3-Dichloropropylene	55		"	50.0		109	66-135			
Trichloroethylene	57		"	50.0		113	72.6-133			
Trichlorofluoromethane	56		"	50.0		113	51.5-131			
Vinyl Chloride	48		"	50.0		95.9	47-126			
Surrogate: 1,2-Dichloroethane-d4	50.8		"	50.0		102	72.6-129			
Surrogate: p-Bromofluorobenzene	48.9		"	50.0		97.9	63.5-145			
Surrogate: Toluene-d8	49.5		"	50.0		99.0	86.6-116			

YORK

ANALYTICAL LABORATORIES, INC.

Volatile Organic Compounds by EPA SW846-8260B - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD	Limit	Flag
Batch BH10167 - EPA 5035B										
LCS Dup (BH10167-BSD1)					Prepared & Analyzed: 08/03/2011					
1,1,1-Trichloroethane	57		ug/L	50.0		115 72.6-137		0.964	22.5	
1,1,2,2-Tetrachloroethane	51		"	50.0		102 65.4-135		0.747	23.8	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	54		"	50.0		108 67.8-129		1.79	25	
1,1,2-Trichloroethane	55		"	50.0		111 68.6-132		0.652	22.6	
1,1-Dichloroethane	57		"	50.0		114 71.7-131		0.105	22.8	
1,1-Dichloroethylene	57		"	50.0		113 74.4-148		1.49	26.8	
1,2,4-Trichlorobenzene	57		"	50.0		114 65-139		4.75	26.6	
1,2-Dibromo-3-chloropropane	50		"	50.0		100 53.3-149		5.61	29.1	
1,2-Dibromoethane	58		"	50.0		117 72.7-134		0.834	21.1	
1,2-Dichloroethane	56		"	50.0		111 68.7-136		2.19	21.6	
1,2-Dichloropropane	56		"	50.0		112 68.2-136		0.838	22.5	
2-Butanone	58		"	50.0		117 51.9-137		7.59	32.2	
2-Hexanone	45		"	50.0		90.3 51.6-150		0.711	34	
4-Methyl-2-pentanone	50		"	50.0		101 50.6-142		0.0597	15.5	
Acetone	22		"	50.0		44.5 16-155		22.1	51	
Benzene	56		"	50.0		111 70.4-128		0.520	21.8	
Bromodichloromethane	58		"	50.0		116 70.6-136		1.74	22.7	
Bromoform	54		"	50.0		108 63.2-139		0.335	23.3	
Bromomethane	55		"	50.0		111 50.2-135		1.33	29.1	
Carbon disulfide	100		"	100		104 40.4-124		0.221	25.2	
Carbon tetrachloride	59		"	50.0		118 71.9-140		0.220	22.4	
Chlorobenzene	58		"	50.0		115 76.4-127		2.44	21.8	
Chloroethane	53		"	50.0		106 50.8-142		1.47	24	
Chloroform	58		"	50.0		115 73.6-132		0.364	21.9	
Chloromethane	45		"	50.0		89.6 32.9-131		1.09	22.8	
cis-1,2-Dichloroethylene	65		"	50.0		130 69.5-128	High Bias	6.77	22	
cis-1,3-Dichloropropylene	54		"	50.0		108 66.6-129		0.223	22.7	
Dibromochloromethane	58		"	50.0		116 71.4-135		1.39	22.1	
Dichlorodifluoromethane	38		"	50.0		75.8 39.4-108		0.423	26	
Ethyl Benzene	58		"	50.0		116 75.2-131		1.56	22.5	
Methyl tert-butyl ether (MTBE)	55		"	50.0		110 56.5-140		2.73	30.6	
Methylene chloride	36		"	50.0		72.7 58.4-120		12.1	23.8	
o-Xylene	56		"	50.0		113 70.4-126		2.57	22.7	
p- & m- Xylenes	120		"	100		115 73.8-130		1.82	23	
Styrene	56		"	50.0		111 71.7-126		1.38	21.9	
Tetrachloroethylene	62		"	50.0		124 65-168		0.900	27.9	
Toluene	57		"	50.0		113 72.5-127		0.283	22.9	
trans-1,2-Dichloroethylene	56		"	50.0		112 62.2-144		0.499	24.6	
trans-1,3-Dichloropropylene	54		"	50.0		109 66-135		0.239	23	
Trichloroethylene	56		"	50.0		112 72.6-133		1.30	21.9	
Trichlorofluoromethane	55		"	50.0		110 51.5-131		2.32	24.2	
Vinyl Chloride	48		"	50.0		96.2 47-126		0.271	25.5	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	50.6		"	50.0		101 72.6-129				
<i>Surrogate: p-Bromofluorobenzene</i>	48.6		"	50.0		97.1 63.5-145				
<i>Surrogate: Toluene-d8</i>	49.7		"	50.0		99.5 86.6-116				

YORK

ANALYTICAL LABORATORIES, INC.

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting	Units	Spike	Source*	%REC	Flag	RPD	RPD	Limit	Flag
		Limit		Level	Result	Limits		Limit			

Batch BH10009 - EPA 3510C

Blank (BH10009-BLK1)

Prepared: 08/01/2011 Analyzed: 08/02/2011

1,4-Dichlorobenzene	ND	5.00	ug/L								
2,4,5-Trichlorophenol	ND	5.00	"								
2,4,6-Trichlorophenol	ND	5.00	"								
2,4-Dinitrotoluene	ND	5.00	"								
2-Methylphenol	ND	5.00	"								
3- & 4-Methylphenols	ND	5.00	"								
Cresols, total	ND	15.0	"								
Hexachlorobenzene	ND	5.00	"								
Hexachlorobutadiene	ND	5.00	"								
Hexachloroethane	ND	5.00	"								
Nitrobenzene	ND	5.00	"								
Pentachlorophenol	ND	5.00	"								
Pyridine	ND	5.00	"								

<i>Surrogate: 2-Fluorophenol</i>	30.1		"	75.2		40.0	15-110				
<i>Surrogate: Phenol-d5</i>	30.4		"	75.1		40.5	10-110				
<i>Surrogate: 2,4,6-Tribromophenol</i>	23.0		"	75.1		30.7	15-110				
<i>Surrogate: 2-Fluorobiphenyl</i>	22.6		"	50.0		45.3	30-130				
<i>Surrogate: Nitrobenzene-d5</i>	22.0		"	50.1		44.0	30-130				
<i>Surrogate: Terphenyl-d14</i>	22.6		"	50.0		45.2	30-130				

LCS (BH10009-BS1)

Prepared: 08/01/2011 Analyzed: 08/02/2011

1,4-Dichlorobenzene	25.0	5.00	ug/L	50.0		50.0	40-140				
2,4,5-Trichlorophenol	20.4	5.00	"	50.0		40.7	30-130				
2,4,6-Trichlorophenol	22.7	5.00	"	50.0		45.3	30-130				
2,4-Dinitrotoluene	22.6	5.00	"	50.0		45.1	40-140				
2-Methylphenol	24.2	5.00	"	50.0		48.4	30-130				
3- & 4-Methylphenols	21.9	5.00	"	50.0		43.9	30-130				
Cresols, total	ND	15.0	"				30-130				
Hexachlorobenzene	27.2	5.00	"	50.0		54.3	40-140				
Hexachlorobutadiene	22.5	5.00	"	50.0		45.1	40-140				
Hexachloroethane	25.8	5.00	"	50.0		51.5	40-140				
Nitrobenzene	23.3	5.00	"	50.0		46.7	40-140				
Pentachlorophenol	20.5	5.00	"	50.0		41.1	30-130				
Pyridine	20.2	5.00	"	50.0		40.5	40-140				

<i>Surrogate: 2-Fluorophenol</i>	30.9		"	75.2		41.1	15-110				
<i>Surrogate: Phenol-d5</i>	31.9		"	75.1		42.5	10-110				
<i>Surrogate: 2,4,6-Tribromophenol</i>	27.6		"	75.1		36.7	15-110				
<i>Surrogate: 2-Fluorobiphenyl</i>	21.7		"	50.0		43.4	30-130				
<i>Surrogate: Nitrobenzene-d5</i>	27.1		"	50.1		54.1	30-130				
<i>Surrogate: Terphenyl-d14</i>	23.2		"	50.0		46.5	30-130				

YORK

ANALYTICAL LABORATORIES, INC.

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BH10009 - EPA 3510C

LCS Dup (BH10009-BSD1)

Prepared: 08/01/2011 Analyzed: 08/02/2011

1,4-Dichlorobenzene	27.4	5.00	ug/L	50.0		54.9	40-140	9.34	20	
2,4,5-Trichlorophenol	30.2	5.00	"	50.0		60.5	30-130	39.1	20	Non-dir.
2,4,6-Trichlorophenol	27.4	5.00	"	50.0		54.9	30-130	19.0	20	
2,4-Dinitrotoluene	26.5	5.00	"	50.0		53.1	40-140	16.2	20	
2-Methylphenol	27.9	5.00	"	50.0		55.8	30-130	14.2	20	
3- & 4-Methylphenols	25.0	5.00	"	50.0		50.0	30-130	13.1	20	
Cresols, total	ND	15.0	"				30-130		20	
Hexachlorobenzene	30.9	5.00	"	50.0		61.9	40-140	13.0	20	
Hexachlorobutadiene	24.9	5.00	"	50.0		49.9	40-140	10.1	20	
Hexachloroethane	29.4	5.00	"	50.0		58.8	40-140	13.2	20	
Nitrobenzene	27.2	5.00	"	50.0		54.4	40-140	15.3	20	
Pentachlorophenol	21.7	5.00	"	50.0		43.3	30-130	5.31	20	
Pyridine	20.2	5.00	"	50.0		40.5	40-140	0.00	20	
<i>Surrogate: 2-Fluorophenol</i>	20.2		"	75.2		26.9	15-110			
<i>Surrogate: Phenol-d5</i>	34.1		"	75.1		45.5	10-110			
<i>Surrogate: 2,4,6-Tribromophenol</i>	29.6		"	75.1		39.5	15-110			
<i>Surrogate: 2-Fluorobiphenyl</i>	22.9		"	50.0		45.8	30-130			
<i>Surrogate: Nitrobenzene-d5</i>	29.1		"	50.1		58.0	30-130			
<i>Surrogate: Terphenyl-d14</i>	24.9		"	50.0		49.8	30-130			

Batch BH10214 - EPA 3550B

Blank (BH10214-BLK1)

Prepared & Analyzed: 08/04/2011

Acenaphthene	ND	167	ug/kg wet							
Acenaphthylene	ND	167	"							
Anthracene	ND	167	"							
Benzo(a)anthracene	ND	167	"							
Benzo(a)pyrene	ND	167	"							
Benzoic acid	ND	333	"							
Benzo(b)fluoranthene	ND	167	"							
Benzo(g,h,i)perylene	ND	167	"							
Benzyl alcohol	ND	167	"							
Benzo(k)fluoranthene	ND	167	"							
Benzyl butyl phthalate	ND	167	"							
4-Bromophenyl phenyl ether	ND	167	"							
4-Chloro-3-methylphenol	ND	167	"							
4-Chloroaniline	ND	167	"							
Bis(2-chloroethoxy)methane	ND	167	"							
Bis(2-chloroethyl)ether	ND	167	"							
Bis(2-chloroisopropyl)ether	ND	167	"							
Bis(2-ethylhexyl)phthalate	ND	167	"							
2-Chloronaphthalene	ND	167	"							
2-Chlorophenol	ND	167	"							
4-Chlorophenyl phenyl ether	ND	167	"							
Chrysene	ND	167	"							
Dibenzo(a,h)anthracene	ND	167	"							
Dibenzofuran	ND	167	"							
Di-n-butyl phthalate	ND	167	"							
1,2-Dichlorobenzene	ND	167	"							
1,4-Dichlorobenzene	ND	167	"							
1,3-Dichlorobenzene	ND	167	"							
3,3'-Dichlorobenzidine	ND	167	"							
2,4-Dichlorophenol	ND	167	"							
Diethyl phthalate	ND	167	"							

YORK

ANALYTICAL LABORATORIES, INC.

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BH10214 - EPA 3550B

Blank (BH10214-BLK1)

Prepared & Analyzed: 08/04/2011

2,4-Dimethylphenol	ND	167	ug/kg wet								
Dimethyl phthalate	ND	167	"								
2-Nitroaniline	ND	167	"								
4,6-Dinitro-2-methylphenol	ND	333	"								
2,4-Dinitrophenol	ND	333	"								
2,6-Dinitrotoluene	ND	167	"								
2,4-Dinitrotoluene	ND	167	"								
Di-n-octyl phthalate	ND	167	"								
Fluoranthene	ND	167	"								
Fluorene	ND	167	"								
Hexachlorobenzene	ND	167	"								
Hexachlorobutadiene	ND	167	"								
Hexachlorocyclopentadiene	ND	167	"								
Hexachloroethane	ND	167	"								
Indeno(1,2,3-cd)pyrene	ND	167	"								
Isophorone	ND	167	"								
2-Methylnaphthalene	ND	167	"								
2-Methylphenol	ND	167	"								
3- & 4-Methylphenols	ND	167	"								
Naphthalene	ND	167	"								
3-Nitroaniline	ND	167	"								
4-Nitroaniline	ND	167	"								
Nitrobenzene	ND	167	"								
4-Nitrophenol	ND	167	"								
2-Nitrophenol	ND	167	"								
N-nitroso-di-n-propylamine	ND	167	"								
N-Nitrosodiphenylamine	ND	167	"								
Pentachlorophenol	ND	167	"								
Phenanthrene	ND	167	"								
Phenol	ND	167	"								
Pyrene	ND	167	"								
1,2,4-Trichlorobenzene	ND	167	"								
2,4,5-Trichlorophenol	ND	167	"								
2,4,6-Trichlorophenol	ND	167	"								
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>1680</i>		<i>"</i>	<i>2500</i>		<i>66.9</i>	<i>15-110</i>				
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1860</i>		<i>"</i>	<i>1670</i>		<i>112</i>	<i>30-130</i>				
<i>Surrogate: 2-Fluorophenol</i>	<i>1680</i>		<i>"</i>	<i>2510</i>		<i>66.8</i>	<i>15-110</i>				
<i>Surrogate: Nitrobenzene-d5</i>	<i>1680</i>		<i>"</i>	<i>1670</i>		<i>100</i>	<i>30-130</i>				
<i>Surrogate: Phenol-d5</i>	<i>1670</i>		<i>"</i>	<i>2500</i>		<i>66.9</i>	<i>15-110</i>				
<i>Surrogate: Terphenyl-d14</i>	<i>2150</i>		<i>"</i>	<i>1670</i>		<i>129</i>	<i>30-130</i>				

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ANALYTICAL LABORATORIES, INC.

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	
									RPD	Limit Flag
Batch BH10214 - EPA 3550B										
LCS (BH10214-BS1)						Prepared & Analyzed: 08/04/2011				
Acenaphthene	1240	167	ug/kg wet	1670		74.2	40-140			
Accnaphthylene	1230	167	"	1670		73.6	40-140			
Anthracene	1270	167	"	1670		76.2	40-140			
Benzo(a)anthracene	1240	167	"	1670		74.3	40-140			
Benzo(a)pyrene	1380	167	"	1670		82.8	40-140			
Benzoic acid	ND	333	"	1670			30-130	Low Bias		
Benzo(b)fluoranthene	1440	167	"	1670		86.3	40-140			
Benzo(g,h,i)perylene	1680	167	"	1670		100	40-140			
Benzyl alcohol	1270	167	"	1670		76.1	30-130			
Benzo(k)fluoranthene	1290	167	"	1670		77.6	40-140			
Benzyl butyl phthalate	1230	167	"	1670		74.0	40-140			
4-Bromophenyl phenyl ether	1300	167	"	1670		78.3	40-140			
4-Chloro-3-methylphenol	1280	167	"	1670		77.1	30-130			
4-Chloroaniline	1260	167	"	1670		75.8	40-140			
Bis(2-chloroethoxy)methane	1280	167	"	1670		77.0	40-140			
Bis(2-chloroethyl)ether	1150	167	"	1670		68.9	40-140			
Bis(2-chloroisopropyl)ether	1150	167	"	1670		68.9	40-140			
Bis(2-ethylhexyl)phthalate	1230	167	"	1670		73.8	40-140			
2-Chloronaphthalene	1210	167	"	1670		72.6	40-140			
2-Chlorophenol	1230	167	"	1670		73.7	30-130			
4-Chlorophenyl phenyl ether	1180	167	"	1670		71.1	40-140			
Chrysene	1260	167	"	1670		75.4	40-140			
Dibenzo(a,h)anthracene	884	167	"	1670		53.1	40-140			
Dibenzofuran	1190	167	"	1670		71.7	40-140			
Di-n-butyl phthalate	1220	167	"	1670		73.1	40-140			
1,2-Dichlorobenzene	1210	167	"	1670		72.8	40-140			
1,4-Dichlorobenzene	1220	167	"	1670		73.4	40-140			
1,3-Dichlorobenzene	1150	167	"	1670		69.3	40-140			
3,3'-Dichlorobenzidine	1230	167	"	1670		73.8	40-140			
2,4-Dichlorophenol	1260	167	"	1670		75.6	30-130			
Diethyl phthalate	1210	167	"	1670		72.5	40-140			
2,4-Dimethylphenol	1320	167	"	1670		79.1	30-130			
Dimethyl phthalate	1230	167	"	1670		73.7	40-140			
4,6-Dinitro-2-methylphenol	1110	333	"	1670		66.8	30-130			
2-Nitroaniline	1140	167	"	1670		68.3	40-140			
2,4-Dinitrophenol	1250	333	"	1670		74.8	30-130			
2,6-Dinitrotoluene	1220	167	"	1670		73.5	40-140			
2,4-Dinitrotoluene	1200	167	"	1670		71.8	40-140			
Di-n-octyl phthalate	1440	167	"	1670		86.6	40-140			
Fluoranthene	1680	167	"	1670		100	40-140			
Fluorene	1180	167	"	1670		70.5	40-140			
Hexachlorobenzene	1250	167	"	1670		75.2	40-140			
Hexachlorobutadiene	1200	167	"	1670		72.3	40-140			
Hexachlorocyclopentadiene	668	167	"	1670		40.1	40-140			
Hexachloroethane	1210	167	"	1670		72.6	40-140			
Indeno(1,2,3-cd)pyrene	812	167	"	1670		48.7	40-140			
Isophorone	1210	167	"	1670		72.5	40-140			
2-Methylnaphthalene	1290	167	"	1670		77.3	40-140			
2-Methylphenol	1260	167	"	1670		75.7	30-130			
3- & 4-Methylphenols	ND	167	"	1670			30-130	Low Bias		
Naphthalene	1200	167	"	1670		72.2	40-140			
3-Nitroaniline	1170	167	"	1670		70.4	40-140			
4-Nitroaniline	1150	167	"	1670		69.0	40-140			
Nitrobenzene	1180	167	"	1670		70.9	40-140			

YORK

ANALYTICAL LABORATORIES, INC.

Semivolatile Organic Compounds by EPA Method 8270C - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10214 - EPA 3550B										
LCS (BH10214-BS1)						Prepared & Analyzed: 08/04/2011				
4-Nitrophenol	1210	167	ug/kg wet	1670		72.3			30-130	
2-Nitrophenol	1260	167	"	1670		75.6			30-130	
N-nitroso-di-n-propylamine	1220	167	"	1670		73.2			40-140	
N-Nitrosodiphenylamine	1430	167	"	1670		85.7			40-140	
Pentachlorophenol	1270	167	"	1670		76.2			30-130	
Phenanthrene	1270	167	"	1670		76.2			40-140	
Phenol	1360	167	"	1670		81.8			30-130	
Pyrene	1290	167	"	1670		77.3			40-140	
1,2,4-Trichlorobenzene	1220	167	"	1670		73.0			40-140	
2,4,5-Trichlorophenol	1250	167	"	1670		75.1			30-130	
2,4,6-Trichlorophenol	1180	167	"	1670		70.9			30-130	
<i>Surrogate: 2,4,6-Tribromophenol</i>	<i>2090</i>		<i>"</i>	<i>2500</i>		<i>83.5</i>			<i>15-110</i>	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1150</i>		<i>"</i>	<i>1670</i>		<i>69.3</i>			<i>30-130</i>	
<i>Surrogate: 2-Fluorophenol</i>	<i>2040</i>		<i>"</i>	<i>2510</i>		<i>81.3</i>			<i>15-110</i>	
<i>Surrogate: Nitrobenzene-d5</i>	<i>1220</i>		<i>"</i>	<i>1670</i>		<i>72.9</i>			<i>30-130</i>	
<i>Surrogate: Phenol-d5</i>	<i>1950</i>		<i>"</i>	<i>2500</i>		<i>77.9</i>			<i>15-110</i>	
<i>Surrogate: Terphenyl-d14</i>	<i>1330</i>		<i>"</i>	<i>1670</i>		<i>79.9</i>			<i>30-130</i>	

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ANALYTICAL LABORATORIES, INC.

Organochlorine Pesticides by EPA SW 846-8081 - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10008 - EPA 3510C										
Blank (BH10008-BLK1)						Prepared & Analyzed: 08/01/2011				
Toxaphene	ND	0.100	ug/L							
Methoxychlor	ND	0.00500	"							
Heptachlor epoxide	ND	0.00100	"							
Heptachlor	ND	0.00100	"							
gamma-BHC (Lindane)	ND	0.00100	"							
Endrin	ND	0.00100	"							
Chlordane, total	ND	0.00400	"							
<i>Surrogate: Tetrachloro-m-xylene</i>	2.27		"	2.00		113			30-150	
<i>Surrogate: Decachlorobiphenyl</i>	1.84		"	2.00		92.1			30-150	
LCS (BH10008-BS1)						Prepared & Analyzed: 08/01/2011				
Methoxychlor	0.688	0.00500	ug/L	1.00		68.8			40-140	
Heptachlor epoxide	0.830	0.00100	"	1.00		83.0			40-140	
Heptachlor	0.822	0.00100	"	1.00		82.2			40-140	
gamma-BHC (Lindane)	0.877	0.00100	"	1.00		87.7			40-140	
Endrin	0.735	0.00100	"	1.00		73.5			40-140	
<i>Surrogate: Tetrachloro-m-xylene</i>	2.05		"	2.00		103			30-150	
<i>Surrogate: Decachlorobiphenyl</i>	1.55		"	2.00		77.3			30-150	
LCS Dup (BH10008-BSD1)						Prepared: 08/01/2011 Analyzed: 08/02/2011				
Methoxychlor	0.790	0.00500	ug/L	1.00		79.0		13.8	200	
Heptachlor epoxide	0.873	0.00100	"	1.00		87.3		4.98	200	
Heptachlor	0.856	0.00100	"	1.00		85.6		4.04	200	
gamma-BHC (Lindane)	0.893	0.00100	"	1.00		89.3		1.80	200	
Endrin	0.817	0.00100	"	1.00		81.7		10.6	200	
<i>Surrogate: Tetrachloro-m-xylene</i>	2.15		"	2.00		107			30-150	
<i>Surrogate: Decachlorobiphenyl</i>	1.92		"	2.00		96.2			30-150	

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ANALYTICAL LABORATORIES, INC.

Organochlorine Pesticides by EPA SW 846-8081 - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	
									RPD	Limit Flag
Batch BH10207 - EPA 3550B										
Blank (BH10207-BLK1)						Prepared & Analyzed: 08/04/2011				
4,4'-DDD	ND	0.330	ug/kg wet							
4,4'-DDE	ND	0.330	"							
4,4'-DDT	ND	0.330	"							
Aldrin	ND	0.330	"							
alpha-BHC	ND	0.330	"							
beta-BHC	ND	0.330	"							
gamma-Chlordane	ND	0.330	"							
delta-BHC	ND	0.330	"							
Dieldrin	ND	0.330	"							
Endosulfan I	ND	0.330	"							
Endosulfan II	ND	0.330	"							
Endosulfan sulfate	ND	0.330	"							
Endrin	ND	0.330	"							
Endrin aldehyde	ND	0.330	"							
Endrin ketone	ND	0.330	"							
gamma-BHC (Lindane)	ND	0.330	"							
Heptachlor	ND	0.330	"							
Heptachlor epoxide	ND	0.330	"							
Methoxychlor	ND	1.65	"							
alpha-Chlordane	ND	0.330	"							
Toxaphene	ND	33.0	"							
<i>Surrogate: Decachlorobiphenyl</i>	65.9		"	66.7		98.9	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	79.1		"	66.7		119	30-150			
LCS (BH10207-BS1)						Prepared & Analyzed: 08/04/2011				
4,4'-DDD	30.7	0.330	ug/kg wet	33.3		92.2	40-140			
4,4'-DDE	28.8	0.330	"	33.3		86.4	40-140			
4,4'-DDT	26.7	0.330	"	33.3		80.0	40-140			
Aldrin	30.8	0.330	"	33.3		92.3	40-140			
alpha-BHC	30.7	0.330	"	33.3		92.0	40-140			
beta-BHC	32.3	0.330	"	33.3		96.8	40-140			
gamma-Chlordane	29.7	0.330	"	33.3		89.2	40-140			
delta-BHC	29.9	0.330	"	33.3		89.6	40-140			
Dieldrin	31.2	0.330	"	33.3		93.7	40-140			
Endosulfan I	31.5	0.330	"	33.3		94.5	40-140			
Endosulfan II	29.8	0.330	"	33.3		89.5	40-140			
Endosulfan sulfate	28.9	0.330	"	33.3		86.8	40-140			
Endrin	27.0	0.330	"	33.3		81.1	40-140			
Endrin aldehyde	26.7	0.330	"	33.3		80.2	40-140			
Endrin ketone	32.1	0.330	"	33.3		96.4	40-140			
gamma-BHC (Lindane)	29.3	0.330	"	33.3		87.9	40-140			
Heptachlor	27.8	0.330	"	33.3		83.4	40-140			
Heptachlor epoxide	28.5	0.330	"	33.3		85.6	40-140			
Methoxychlor	25.7	1.65	"	33.3		77.2	40-140			
alpha-Chlordane	28.2	0.330	"	33.3		84.7	40-140			
<i>Surrogate: Decachlorobiphenyl</i>	65.0		"	66.7		97.5	30-150			
<i>Surrogate: Tetrachloro-m-xylene</i>	73.3		"	66.7		110	30-150			

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ANALYTICAL LABORATORIES, INC.

Polychlorinated Biphenyls (PCB) by EPA SW 846-8082/EPA Compendium Methods - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10207 - EPA 3550B											
Blank (BH10207-BLK1)						Prepared & Analyzed: 08/04/2011					
Aroclor 1016	ND	0.0170	mg/kg wet								
Aroclor 1221	ND	0.0170	"								
Aroclor 1232	ND	0.0170	"								
Aroclor 1242	ND	0.0170	"								
Aroclor 1248	ND	0.0170	"								
Aroclor 1254	ND	0.0170	"								
Aroclor 1260	ND	0.0170	"								
Aroclor 1262	ND	0.0170	"								
Aroclor 1268	ND	0.0170	"								
Total PCBs	ND	0.0170	"								
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0737		"	0.0667		110	30-150				
<i>Surrogate: Decachlorobiphenyl</i>	0.0727		"	0.0667		109	30-150				
LCS (BH10207-BS2)						Prepared & Analyzed: 08/04/2011					
Aroclor 1016	0.328	0.0170	mg/kg wet	0.333		98.5	40-140				
Aroclor 1260	0.315	0.0170	"	0.333		94.5	40-140				
<i>Surrogate: Tetrachloro-m-xylene</i>	0.0827		"	0.0667		124	30-150				
<i>Surrogate: Decachlorobiphenyl</i>	0.0787		"	0.0667		118	30-150				

YORK

ANALYTICAL LABORATORIES, INC.

Chlorinated Herbicides by EPA Method 8151 - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10066 - EPA 3550B/8151A										
Blank (BH10066-BLK1)										
Prepared: 08/02/2011 Analyzed: 08/03/2011										
2,4-D	ND	100	ug/kg wet							
2,4,5-TP (Silvex)	ND	100	"							
2,4,5-T	ND	100	"							
<i>Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)</i>	3240		"	2500		130 10-148				
LCS (BH10066-BS1)										
Prepared: 08/02/2011 Analyzed: 08/03/2011										
2,4-D	895	100	ug/kg wet	800		112 10-186				
2,4,5-TP (Silvex)	940	100	"	800		118 13.3-189				
2,4,5-T	940	100	"	800		118 11.2-181				
<i>Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)</i>	3000		"	2500		120 10-148				
LCS Dup (BH10066-BSD1)										
Prepared: 08/02/2011 Analyzed: 08/03/2011										
2,4-D	870	100	ug/kg wet	800		109 10-186		2.83	38	
2,4,5-TP (Silvex)	895	100	"	800		112 13.3-189		4.90	39	
2,4,5-T	910	100	"	800		114 11.2-181		3.24	39	
<i>Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)</i>	3080		"	2500		123 10-148				
Batch BH10067 - EPA 3535A										
Blank (BH10067-BLK1)										
Prepared: 08/01/2011 Analyzed: 08/02/2011										
2,4-D	ND	5.00	ug/L							
2,4,5-TP (Silvex)	ND	5.00	"							
<i>Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)</i>	159		"	125		127 30-150				
LCS (BH10067-BS1)										
Prepared: 08/01/2011 Analyzed: 08/02/2011										
2,4-D	27.0	5.00	ug/L	40.0		67.5 30-120				
2,4,5-TP (Silvex)	34.2	5.00	"	40.0		85.6 30-127				
<i>Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)</i>	118		"	125		94.2 30-150				

YORK

ANALYTICAL LABORATORIES, INC.

Chlorinated Herbicides by EPA Method 8151 - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10067 - EPA 3535A											
LCS Dup (BH10067-BSD1)						Prepared: 08/01/2011 Analyzed: 08/02/2011					
2,4-D	30.2	5.00	ug/L	40.0		75.6	30-120		11.4	25	
2,4,5-TP (Silvex)	37.8	5.00	"	40.0		94.4	30-127		9.72	25	
Surrogate: 2,4-Dichlorophenylacetic acid (DCAA)	132		"	125		106	30-150				

YORK

ANALYTICAL LABORATORIES, INC.

Gas Chromatography/Flame Ionization Determination - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
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Batch BH10227 - EPA 3550B

Blank (BH10227-BLK1)

Prepared: 08/04/2011 Analyzed: 08/05/2011

Total Petroleum Hydrocarbons-DRO	ND	10.0	mg/kg wet								
Surrogate: Triacontane	0.00		"	10.0			30-150				

LCS (BH10227-BS1)

Prepared: 08/04/2011 Analyzed: 08/05/2011

Total Petroleum Hydrocarbons-DRO	188	10.0	mg/kg wet	172		109	40-150				
Surrogate: Triacontane	10.2		"	10.0		102	30-150				

YORK

ANALYTICAL LABORATORIES, INC.

Metals by EPA 6000 Series Methods - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10022 - EPA SW 846-3010A										
Blank (BH10022-BLK1)						Prepared & Analyzed: 08/01/2011				
Arsenic	ND	0.010	mg/L							
Barium	ND	0.010	"							
Cadmium	ND	0.003	"							
Chromium	ND	0.005	"							
Lead	ND	0.003	"							
Selenium	ND	0.010	"							
Silver	ND	0.005	"							
Blank (BH10022-BLK2)						Prepared & Analyzed: 08/01/2011				
Arsenic	ND	0.010	mg/L							
Barium	ND	0.010	"							
Cadmium	ND	0.003	"							
Chromium	ND	0.005	"							
Lead	ND	0.003	"							
Selenium	0.012	0.010	"							
Silver	ND	0.005	"							
Reference (BH10022-SRM1)						Prepared & Analyzed: 08/01/2011				
Arsenic	0.553	0.010	mg/L	0.547		101		83.9-117		
Barium	0.329	0.010	"	0.301		109		86.7-113		
Cadmium	0.249	0.003	"	0.239		104		84.9-114		
Chromium	0.638	0.005	"	0.626		102		87.1-113		
Lead	0.506	0.003	"	0.466		109		86.9-113		
Selenium	0.919	0.010	"	0.928		99.1		79.4-115		
Silver	0.247	0.005	"	0.260		94.9		85.8-115		
Batch BH10051 - EPA SW 846-3050B										
Blank (BH10051-BLK1)						Prepared & Analyzed: 08/01/2011				
Aluminum	ND	2.00	mg/kg wet							
Antimony	ND	0.500	"							
Arsenic	ND	0.500	"							
Barium	ND	0.500	"							
Beryllium	ND	0.010	"							
Cadmium	ND	0.500	"							
Calcium	ND	2.00	"							
Chromium	ND	0.500	"							
Cobalt	ND	0.500	"							
Copper	ND	0.500	"							
Iron	ND	1.00	"							
Lead	ND	0.300	"							
Magnesium	ND	2.00	"							
Manganese	ND	1.00	"							
Nickel	ND	0.500	"							
Potassium	ND	10.0	"							
Selenium	ND	0.500	"							
Silver	ND	0.500	"							
Sodium	ND	10.0	"							
Thallium	ND	0.500	"							
Vanadium	ND	0.500	"							
Zinc	ND	0.500	"							

YORK

ANALYTICAL LABORATORIES, INC.

Metals by EPA 6000 Series Methods - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10051 - EPA SW 846-3050B										
Reference (BH10051-SRM1)					Prepared & Analyzed: 08/01/2011					
Aluminum	6780	2.00	mg/kg wet	9780		69.3			44.4-155	
Antimony	126	0.500	"	121		104			21.4-251	
Arsenic	115	0.500	"	109		105			69.9-131	
Barium	335	0.500	"	325		103			74.2-126	
Beryllium	94.9	0.010	"	92.1		103			74.5-126	
Cadmium	117	0.500	"	110		106			73.3-126	
Calcium	6770	2.00	"	6700		101			74-126	
Chromium	90.6	0.500	"	93.4		97.0			69.3-131	
Cobalt	147	0.500	"	133		111			74.3-126	
Copper	85.0	0.500	"	74.7		114			73.6-127	
Iron	9950	1.00	"	13100		76.0			32.4-167	
Lead	156	0.300	"	152		103			73.7-126	
Magnesium	2320	2.00	"	2980		78.0			65.8-134	
Manganese	484	1.00	"	443		109			76.7-124	
Nickel	129	0.500	"	109		119			72.3-127	
Potassium	2280	10.0	"	2770		82.1			61.7-138	
Selenium	219	0.500	"	207		106			68.6-131	
Silver	50.3	0.500	"	51.9		96.8			66.5-133	
Sodium	990	10.0	"	724		137			56.6-144	
Thallium	184	0.500	"	171		108			68.4-131	
Vanadium	106	0.500	"	110		96.2			67-133	
Zinc	288	0.500	"	299		96.3			71.6-128	

YORK

ANALYTICAL LABORATORIES, INC.

TCLP Metals by EPA SW846-1311/6010B - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10022 - EPA SW 846-3010A											
Blank (BH10022-BLK1)						Prepared & Analyzed: 08/01/2011					
Lead	ND	0.00300	mg/L								
Blank (BH10022-BLK2)						Prepared & Analyzed: 08/01/2011					
Lead	ND	0.00300	mg/L								
Reference (BH10022-SRM1)						Prepared & Analyzed: 08/01/2011					
Lead	0.506	0.00300	mg/L	0.466		109	86.9-113				

YORK

ANALYTICAL LABORATORIES, INC.

Mercury by EPA 7000/200 Series Methods - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	RPD Limits	Flag	RPD	Limit	Flag
Batch BG11066 - EPA SW846-7470											
Blank (BG11066-BLK1)						Prepared & Analyzed: 08/01/2011					
Mercury	ND	0.0002000	mg/L								
LCS (BG11066-BS1)						Prepared & Analyzed: 08/01/2011					
Mercury	0.002880	0.0002000	mg/L	0.00300		96.0	80-120				
Batch BG11084 - EPA SW846-7471											
Blank (BG11084-BLK1)						Prepared & Analyzed: 08/01/2011					
Mercury	ND	0.100	mg/kg wet								
LCS (BG11084-BS1)						Prepared & Analyzed: 08/01/2011					
Mercury	2.90		mg/kg	2.96		98.0	80-120				

YORK

ANALYTICAL LABORATORIES, INC.

Wet Chemistry Parameters - Quality Control Data

York Analytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source* Result	%REC	%REC Limits	Flag	RPD	RPD Limit	Flag
Batch BH10077 - Analysis Preparation											
Blank (BH10077-BLK1)						Prepared & Analyzed: 08/02/2011					
Reactivity - Cyanide	ND	0.250	mg/kg								
Batch BH10098 - Analysis Preparation											
Blank (BH10098-BLK1)						Prepared & Analyzed: 08/02/2011					
Reactivity - Sulfide	ND	15.0	mg/kg								

Notes and Definitions

- S-BN Base/Neutral surrogate recovery outside of control limits. The data was accepted based on valid recovery of remaining two base/neutral surrogates.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- QL-02 This LCS analyte is outside Laboratory Recovery limits due the analyte behavior using the referenced method. The reference method has certain limitations with respect to analytes of this nature.
- J Detected below the Reporting Limit but greater than or equal to the Method Detection Limit (MDL); therefore, the result is an estimated concentration.
- IGN-01 Non-Ignit.
- B Analyte is found in the associated analysis batch blank. For volatiles, methylene chloride and acetone are common lab contaminants. Data users should consider anything <10x the blank value as artifact.
-
- ND Analyte NOT DETECTED at the stated Reporting Limit (RL) or above.
- RL REPORTING LIMIT - the minimum reportable value based upon the lowest point in the analyte calibration curve.
- MDL METHOD DETECTION LIMIT - the minimum concentration that can be measured and reported with a 99% confidence that the concentration is greater than zero. If requested or required, a value reported below the RL and above the MDL is considered estimated and is noted with a "J" flag.
- NR Not reported
- RPD Relative Percent Difference
- Wet The data has been reported on an as-received (wet weight) basis
- Low Bias Low Bias flag indicates that the recovery of the flagged analyte is below the laboratory or regulatory lower control limit. The data user should take note that this analyte may be biased low but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
- High Bias High Bias flag indicates that the recovery of the flagged analyte is above the laboratory or regulatory upper control limit. The data user should take note that this analyte may be biased high but should evaluate multiple lines of evidence including the LCS and site-specific MS/MSD data to draw bias conclusions. In cases where no site-specific MS/MSD was requested, only the LCS data can be used to evaluate such bias.
- Non-Dir. Non-dir. flag (Non-Directional Bias) indicates that the Relative Percent Difference (RPD) (a measure of precision) among the MS and MSD data is outside the laboratory or regulatory control limit. This alerts the data user where the MS and MSD are from site-specific samples that the RPD is high due to either non-homogeneous distribution of target analyte between the MS/MSD or indicates poor reproducibility for other reasons.

Corrective Action:

YORK

ANALYTICAL LABORATORIES, INC.
120 RESEARCH DR. STRATFORD, CT 06615
(203) 325-1371 FAX (203) 357-0166

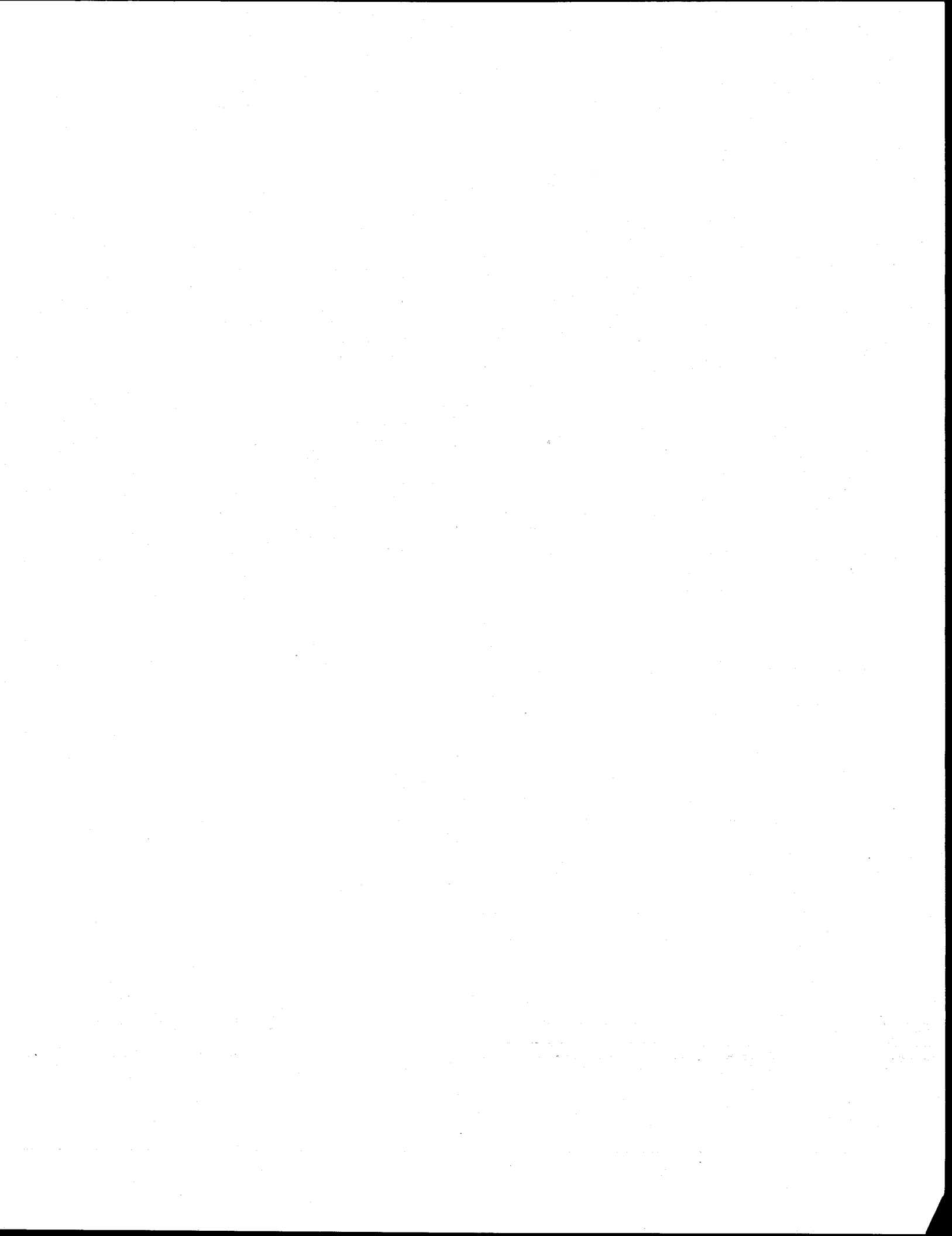
Field Chain-of-Custody Record

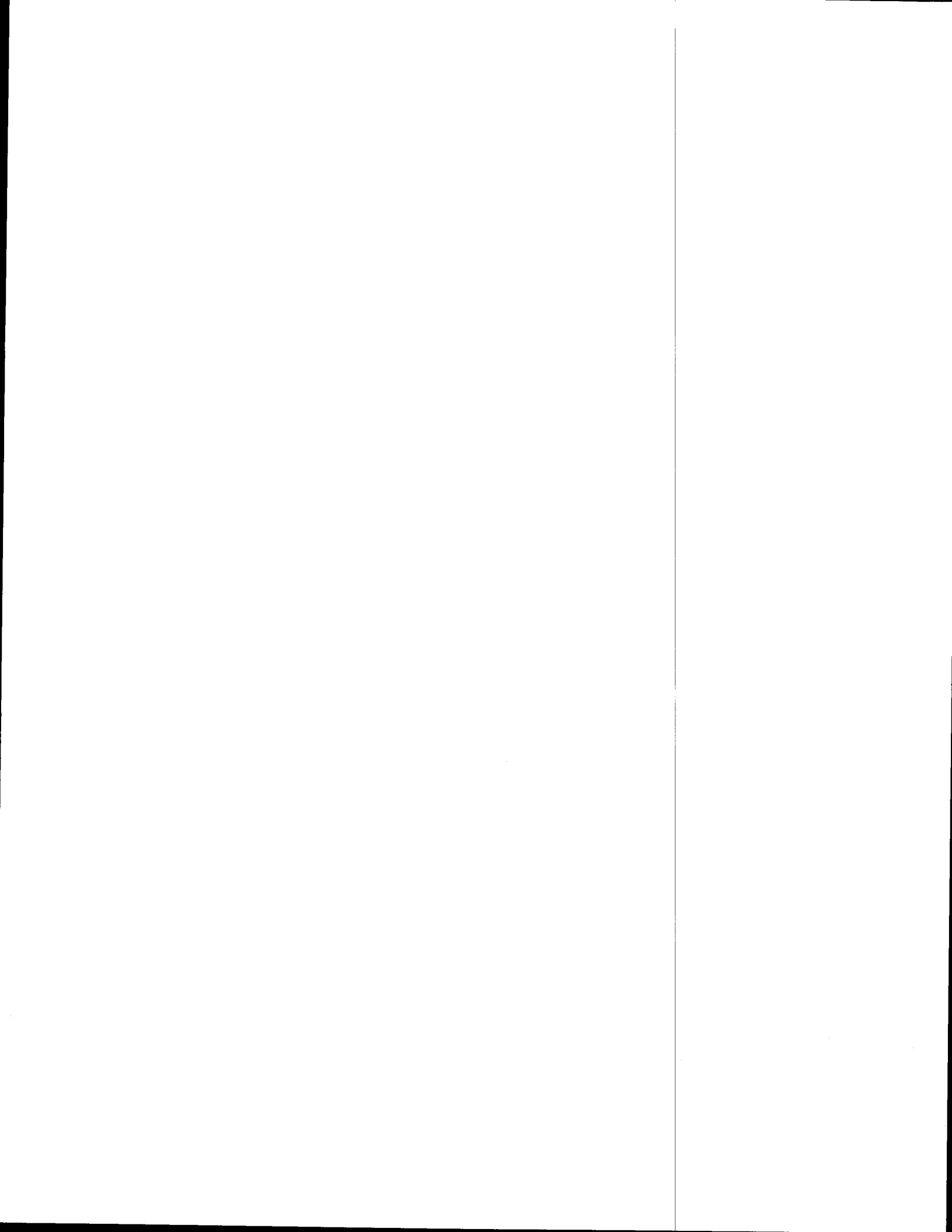
NOTE: York's Std. Terms & Conditions are listed on the back side of this document. This document serves as your written authorization to York to proceed with the analyses requested and your signature binds you to York's Std. Terms & Conditions unless superseded by written contract.

Page 1 of 1

York Project No. 1160898

YOUR Information		Report To:		Invoice To:		YOUR Project ID		Turn-Around Time		Report Type/Deliverables						
Company:	LANGAN ENGINEERING	Company:		Company:		170150101		RUSH - Same Day		Summary Report	X					
Address:	300 West 31st St	Address:	SAME	Address:	SAME	Purchase Order No.		RUSH - Next Day		Summary w/ QA	X					
Phone No.:	New York, NY 10001	Phone No.:		Phone No.:				RUSH - Two Day		CT RCP Package						
Contact Person:	Clay Patterson	Attention:		Attention:				RUSH - Three Day		NY ASP A Package						
E-Mail Address:	cpatterson@langan.com	E-Mail Address:		E-Mail Address:				RUSH - Four Day		NY ASP B Package						
<p>Print Clearly and Legibly. All Information must be complete. Samples will NOT be logged in and the turn-around time clock will not begin until any questions by York are resolved.</p>		<p>Matrix Codes</p> <ul style="list-style-type: none"> S - soil Other - specify (oil, etc.) WW - wastewater GW - groundwater DW - drinking water Air-A - ambient air Air-SV - soil vapor 		<p>Semi-Vols:</p> <ul style="list-style-type: none"> 8270 or 625 STARS list BN Only Acids Only PAH list TAGM list CT RCP list TCLP list NIJEP list App. IX TCLP BNA SPLP/TCLP 608 PCB 		<p>Volatiles</p> <ul style="list-style-type: none"> 8260 full 624 STARS list BTEX MTBE TCLP list TAGM list CT RCP list NIJEP list App. IX SPLP/TCLP 8021B list 		<p>Metals</p> <ul style="list-style-type: none"> RCLAS PP13 list TAL CTI 15 list TAGM list NIJEP list Total Dissolved SPLP/TCLP Inhib. Metals LIST Below 		<p>Misc. Org.</p> <ul style="list-style-type: none"> TPH GRO TPH DRO CT ETHP NY 310-13 TPH 1664 Air TO14A Air TO15 Air STARS Air VPH Air TICs Methane Helium 		<p>Common Miscellaneous Parameters</p> <ul style="list-style-type: none"> Nitrate Nitrite TKN Tit. Nitrogen Ammonia-N Chloride Phosphate Tot. Phos. Oil & Grease Free Solids pH MBAS TPH 1664 		<p>Special Instructions</p> <ul style="list-style-type: none"> Field Filtered <input type="checkbox"/> Lab to Filter <input type="checkbox"/> 		
<p>Samples Collected/Authorized By (Signature)</p> <p><i>[Signature]</i></p> <p>SAPA WEISSNER</p> <p>Name (printed)</p>		<p>Choose Analyses Needed from the Menu Above and Enter Below</p>		<p>Container Description(s)</p>												
Sample Identification	B-1 (0-2')	Date Sampled	1100 7/26/11	Sample Matrix	SOIL	TPH, DRO, TCLP Lead				(1) 802						
	B-2 (0-2')		1200 7/26/11		SOIL	TPH, DRO, TCLP Lead				(1) 802						
	B-4 (0-2')		1300 7/26/11		SOIL	TPH, DRO, TCLP Lead				(1) 802						
	NC-2		1400 7/26/11		SOIL	TCL VOCs, TCL SVOCs, TPH Metals, PCBs, Pesticides, Herbicides, Heavy Characteristic Ignitability, Corrosivity, Reactivity, Toxicity via TCLP, TCLP VOCs, SVOCs, Methanol, herbicides, and metals.				(3) 802 (1) 202						
Comments		Preservation Check those Applicable		4°C		Frozen	ZnAc	HCl	MeOH	Ascorbic Acid	HNO ₃	ILSO	NaOH	Other	Temperature on Receipt	5.0°C
		Samples Relinquished By		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		
		SAPA		0900 7/29/11		7/27/11		1205		7/29/11		1540				
		Samples Relinquished By		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		Date/Time		





FMS ID: PV272-PATH



**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

Construction of Garden-Wide Pedestrian Pathway System

**LOCATION: 43-50 Main Street
BOROUGH: Queens, 11355
CITY OF NEW YORK**

Contractor

Dated _____, 20____

Entered in the Comptroller's Office

First Assistant Bookkeeper

Dated _____, 20____

